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BULLETIN

GRADUATE DIVISION

SAN DIEGO STATE COLLEGE



1966
1967

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BULLETIN OF THE GRADUATE DIVISION

**GRADUATE CURRICULA AT
SAN DIEGO STATE COLLEGE**

1966-1967

SAN DIEGO STATE COLLEGE
SAN DIEGO, CALIFORNIA 92115

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ACADEMIC CALENDAR

1966-1967

FALL SEMESTER

July 15	Last day for graduate students to file application for admission or readmission to the College for the fall semester.
August 16	Graduate Record Examination Aptitude Test for master's degree applicants, 6:30-10:00 p.m., by appointment made four weeks in advance, Test Office.
August 20	Graduate Record Examination Aptitude Test for master's degree applicants, 8:30-12:00 noon, by appointment made four weeks in advance, Test Office.
September 12	Opening date of the academic year.
September 12-16	Testing, advising, residency clearance, and registration week.
September 14-16	Registration, payment of fees, advising, and enrollment in classes.
September 17	Registration for classes meeting after 4:00 p.m.
September 19	First day of classes.
September 21	Graduate Record Examination Aptitude Test for master's degree applicants, 6:30-10:00 p.m., by appointment made four weeks in advance, Test Office.
October 3	Last day to apply for refunds.
October 7	Last day to withdraw from class without penalty for unsatisfactory work.
October 8	Graduate Record Examination Aptitude Test for master's degree applicants, 8:30-12:00 noon, by appointment made four weeks in advance, Test Office.
November 3	Graduate Record Examination Aptitude Test for master's degree applicants, 6:30-10:00 p.m., by appointment made four weeks in advance, Test Office.
November 5	End of seventh week of classes. Deficiency notices due.
November 11	Holiday—Veterans Day.
November 18	Last day to withdraw from class or change registration.
November 24-26	Thanksgiving recess.
December 7	Graduate Record Examination Aptitude Test for master's degree applicants, 6:30-10:00 p.m., by appointment made four weeks in advance, Test Office.
December 15	Last day for graduate students to file application for admission or readmission to the College for the spring semester.
December 16	Last day to apply for mid-year graduation with the master's degree, Graduate Office.
December 17	Last day of classes before Christmas recess.
December 19-	
January 2	Christmas recess.
January 3	Classes resume.
January 4	Last day for a complete withdrawal from the College.
January 18	First day of final examinations.
January 27	Last day of the fall semester.

SPRING SEMESTER

January 30-	
February 3	Testing, advising, residency clearance, and registration week.
February 1-3	Registration, payment of fees, advising, and enrollment in classes.
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 4	Registration for classes meeting after 4:00 p.m.
February 6	First day of classes.

ACADEMIC CALENDAR—Continued

SPRING SEMESTER—Continued

February 13	Holiday—Lincoln's Birthday.
February 20	Last day to apply for refunds.
February 22	Holiday—Washington's Birthday.
February 24	Last day to withdraw from class without penalty for unsatisfactory work.
March 4	Graduate Record Examination Aptitude Test for master's degree applicants, 8:30 a.m.-12:00 noon, by appointment four weeks in advance, Test Office.
March 18	Last day of classes before spring recess.
March 20-25	Spring recess.
March 27	Classes resume.
April 1	End of seventh week of classes. Deficiency notices due.
April 4	Graduate Record Examination Aptitude Test for master's degree applicants, 6:30-10:00 p.m., by appointment four weeks in advance, Test Office.
April 14	Last day to withdraw from class or change registration.
April 21	Last day to apply for June graduation with the master's degree, Graduate Office.
May 10	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 12	Last day for submitting committee approved theses at Graduate Office for final approval prior to binding for June graduation.
May 17	Last day for a complete withdrawal from the College.
May 19	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, division, or school.
May 29	Last day of classes before final examinations.
May 30	Holiday—Memorial Day.
May 31	First day of final examinations.
June 9	Commencement. Last day of the spring semester.

1966 SUMMER SESSIONS

June 13-24	Intersession (2 weeks).
June 27- August 5	Term I Summer Session (6 weeks). Last day to apply for summer graduation with the master's degree, Graduate Office.
August 5	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, division, or school.
August 8-26	Term II Summer Session (3 weeks).

1967 SUMMER SESSIONS

June 12-23	Intersession (2 weeks).
June 26- August 4	Term I Summer Session (6 weeks). Last day to apply for summer graduation with the master's degree, Graduate Office.
August 4	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, division, or school.
August 7-25	Term II Summer Session (3 weeks).

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	\$38.00
Student activity fee	8.00
Student Union	5.00
Auditors pay same fees as students carrying courses for credit.	
Total required fees	\$51.00

Fees for six units or less:

Materials and service	19.50
Student Union	2.50
Auditors pay same fees as students carrying courses for credit.	
Total required fees	\$22.00

Tuition for nonresident student:

(In addition to materials and service and activity fees)

Nonresident student enrolled for 15 units or more	300.00
Nonresident student enrolled for less than 15 units, or fraction thereof	(per unit) 20.00
<i>(For fee-paying purposes, zero unit courses are counted as one unit.)</i>	

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

(In addition to materials and service and activity fees)

Foreign student enrolled for 15 units or more	127.50
Foreign student enrolled for less than 15 units or fraction thereof	(per unit) 8.50
<i>(For fee-paying purposes, zero unit courses are counted as one unit.)</i>	

Parking Fees:

Students enrolled in more than six units	13.00
Students enrolled in six units or less	6.00
Each alternate car in addition to first vehicle	1.00
Two-wheeled, self-propelled vehicle:	
Student enrolled in more than six units	3.25
Student enrolled in six units or less	1.50

MISCELLANEOUS FEES

(Fees payable when service is rendered)

Application fee for admission or readmission to the College	5.00
Late registration	5.00
Change of program	1.00
Failure to meet administratively required appointment or time limit	2.00
Transcript of record (first copy free)	1.00
Check returned for any cause	2.00
Studio lesson, per lesson per student	1.00 to 6.00
Current fee per semester (15 40-minute lessons)	75.00
Organ practice	10.00
Loss or damage of equipment and library books	Cost

REGULAR SESSION FEE REFUNDS

Materials and service fees:

To be eligible for 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 \$2 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:

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

Parking fee:

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

Nonreserved space per semester:

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

The late registration fee is not refundable.

The Business Office should be consulted for further refund details.

SUMMER SESSION FEES

Tuition, each session	(per unit) \$17.00
Activity fee (required), Term I	2.00
Student Union fee (required), Term I	3.50
Parking fees:	
Nonreserved spaces:	
Six-week session	5.00
Other sessions of one week or more	(per week) 1.00

EXEMPTIONS

Students under Public Law 16, 346, 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 90054

EX OFFICIO TRUSTEES

Edmund G. Brown, LL.B., Governor of California and President of the Trustees	State Capitol, Sacramento 95814
Glenn M. Anderson, A.B., Lieutenant Governor of California	State Capitol, Sacramento 95814
Jesse M. Unruh, B.A., Speaker of the Assembly	State Capitol, Sacramento 95814
Max Rafferty, A.B., M.A., Ed.D., State Superintendent of Public Instruction	721 Capitol Avenue, 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 90054

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.

Louis H. Heilbron, A.B., LL.B., LL.D. (1969)	14 Montgomery Street, San Francisco 94104
Donald M. Hart, B.A. (1968)	2230 Pine Street, Bakersfield 93302
Charles Luckman, LL.D., A.F.D. (1966)	9220 Sunset Boulevard, Los Angeles 90046
Paul Spencer, B.A. (1969)	P. O. Box 145, San Dimas 91773
Theodore Meriam, A.B. (1971)	P. O. Box 370, Chico 95927
Albert J. Ruffo, LL.B., B.S. in E.E. (1971)	1680 Hedding Street, San Jose 95113
Mrs. Philip Conley, B.A. (1964)	3729 Huntington Boulevard, Fresno 93702
E. Guy Warren, B.A. (1965)	P. O. Box 59, Hayward 94541
Daniel H. Ridder, B.A. (1967)	604 Pine Street, Long Beach 90801
George D. Hart, A.B. (1967)	111 Sutter Street, San Francisco 94104
Gregson E. Bautzer, B.A., LL.B. (1968)	190 N. Cañon Drive, Beverly Hills 90069
Simon Ramo, B.S., Ph.D. (1972)	8433 Fallbrook Ave., Canoga Park 91304
James F. Thacher, A.B., LL.B. (1970)	310 Sansome Street, San Francisco 94104

APPOINTED TRUSTEES—Continued

Victor H. Palmieri, B.A., LL.B. (1970)
 Janss Corp., Kirkeby Center, Wilshire at Westwood Blvd., Los Angeles 90024
 Alec L. Cory, B.A., LL.B. (1973)
 U.S. National Bank Building, San Diego 92101
 Chester R. Bartolini (1966)
 240 Golden Gate Ave., San Francisco 94102

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 President

Donald M. Hart
 Vice Chairman

Albert J. Ruffo
 Chairman

Chancellor Glenn S. Dumke
 Secretary-Treasurer

OFFICE OF THE CHANCELLOR OF THE CALIFORNIA STATE COLLEGES

5670 Wilshire Boulevard
 Los Angeles, California 90054
 213 938-2981

Chancellor	Glenn S. Dumke
Vice Chancellor, Academic Affairs	Raymond A. Rydell
Vice Chancellor, Business Affairs	Harry E. Brakebill
Assistant Chancellor, Faculty and Staff Affairs	C. Mansel Keene

THE CALIFORNIA STATE COLLEGES

California State College at Fullerton
 800 North State College Boulevard
 Fullerton, California 92631
 Dr. William B. Langsdorf, President
 714 871-3300

California State College at Hayward
 25800 Hillary Street
 Hayward, California 94542
 Dr. Fred F. Harclerod, President
 415 538-8000

California State College at Long Beach
 6101 East Seventh Street
 Long Beach, California 90804
 Dr. Carl W. McIntosh, President
 213 433-0951

California State College at Los Angeles
 5151 State College Drive
 Los Angeles, California 90032
 Dr. John A. Greenlee, Acting President
 213 225-1631

California State College at Palos Verdes
 27608 Silver Spur Road, Suite 200
 Palos Verdes Peninsula, California 90274
 Dr. Leo F. Cain, President
 213 377-6837

California State College at San Bernardino
 532 Mountain View Avenue
 San Bernardino, California 92407
 Dr. John M. Pfau, President
 714 887-6311

California State Polytechnic College
 San Luis Obispo, California 93402
 805 546-0111
 Kellogg-Voorhis Campus
 Pomona, California 91766
 213 964-6424
 Dr. Julian A. McPhee, President

Chico State College
First and Normal Streets
Chico, California 95927
Dr. Glenn Kendall, President
916 343-4411

Fresno State College
Shaw and Cedar Avenues
Fresno, California 93726
Dr. Frederic W. Ness, President
209 222-5161

Humboldt State College
Arcata, California 95521
Dr. Cornelius H. Siemens, President
707 822-1771

Sacramento State College
6000 Jay Street
Sacramento, California 95819
916 452-3252

San Diego State College
5402 College Avenue
San Diego, California 92115
Dr. Malcolm A. Love, President
714 286-5000

San Fernando Valley State College
18111 Nordhoff Street
Northridge, California 91326
Dr. Ralph Prator, President
213 349-1200

San Francisco State College
1600 Holloway Avenue
San Francisco, California 94132
415 584-2300

San Jose State College
125 South Seventh Street
San Jose, California 95114
Dr. Robert D. Clark, President
408 294-6414

Sonoma State College
265 College View Drive
Rohnert Park, California 94928
Dr. Ambrose R. Nichols, President
707 545-7220

Stanislaus State College
Turlock, California 95380
Dr. Alexander Capurso, President
209 632-2411

The California State Colleges are a unique development of the democratic concept of tax-supported public higher education for all qualified students.

Spanning the state from Humboldt County in the north to San Diego in the south, the 17 campuses of the California State Colleges (with another campus soon to be constructed) represent the largest system of public higher education in the Western Hemisphere and one of the largest in the world. Current enrollment is more than 157,000 full- and part-time students. The faculty and administrative staff numbers approximately 8,000.

The individual colleges, each with a geographic, curricular and academic character of its own, offer a solid basic program in the liberal arts. Beyond this, each college is noted for its individuality in academic emphasis which makes for a diversified system. Course offerings leading to the bachelor's and master's degree are designed to satisfy existing student interests and to serve the technical and

professional manpower requirements of the state. A joint doctoral program with the University of California is now underway.

The California State Colleges are dedicated to rigorous academic standards. Constant striving for academic excellence is at the heart of the system. The primary responsibility of each faculty within the system is the instructional process on the teacher-student level, with appropriate recognition of the necessary and constructive role of research in any institution of higher education.

Responsibility for the California State Colleges is vested in the Board of Trustees, which is appointed by the Governor, and the Board's administrative arm, the Chancellor. The Trustees and the Chancellor set broad policy for the colleges while delegating considerable independent responsibility for implementation at the college level. A Statewide Academic Senate, made up of representatives elected by the faculty at each college, acts as a consultative body to the area of academic affairs.

Although the oldest of the colleges, San Jose State College, dates back a century, the California State College system under an independent Board of Trustees was created by the Donahoe Act of 1960. Formerly, the colleges were under the jurisdiction of the State Board of Education.

Today, the California State Colleges are in a particularly dynamic period of their development. Prior to World War II, there were seven State Colleges with a peak total enrollment of some 13,000. Since 1947, ten new campuses have been developed; one is operating in temporary quarters in southwestern Los Angeles, and another has been authorized, to be located in Kern County. Enrollment in the system is expected to reach 225,000 by 1970.

PART TWO

SAN DIEGO STATE COLLEGE

GENERAL INFORMATION

OFFICERS OF THE COLLEGE

President	Malcolm A. Love
Assistant to the President	Lloyd A. Walker
Executive Dean	George A. Koester
Administrative Analyst	James M. Elden
Administrative Analyst	Margaret L. Gilbert
Building Program Assistant	Clarence B. Cover
Vice President, Administration	Ernest B. O'Byrne
Publications and Public Relations Manager	Gordon F. Lee
Vice President, Academic Affairs	Donald R. Watson
Assistant to the Vice President, Academic Affairs	Robert S. Ackerly, Jr.
Assistant to the Vice President, Academic Affairs	E. June Warren
Dean of Arts and Sciences	Sidney L. Gulick
Dean of Extended Services and Summer Sessions	Clayton M. Gjerde
Coordinator of Audio-Visual Services	E. Glen Fulkerson
Coordinator of Extended Services	Manville R. Petteys
Coordinator of Summer Sessions	Marvin H. Platz
Dean of Graduate and Professional Studies	Maurice M. Lemme
Coordinator of Graduate Studies	Millard R. Biggs
College Librarian	Louis A. Kenney
Secretary to the Faculty	Maurice L. Crawford
Dean of Students	Herbert C. Peiffer, Jr.
Assistant to the Dean of Students	Edward M. Webb
Dean of Activities	Margery Ann Warner
Activities Adviser	Donald L. Kelm
Activities Adviser	Margot S. Nilsen
Activities Adviser	Gary A. Solbue
Dean of Admissions and Records	Melvin A. Anderson
Admissions Officer	Robert E. Downen
Registrar	Peter W. Barend
Dean of Counseling and Testing	Donald F. Harder
Test Officer	Herman Roemmich
Coordinator of Counseling	Earl F. Peisner
Director of Health Services	Frank O. Robertson, M.D.
Director of Housing	John M. Yarborough
Director of Placement and Financial Aids	William M. Kidwell
Assistant Director of Placement	Jack W. McCrary
Assistant Placement Officer	Theodora W. Cooper
Assistant Placement Officer	Jerry J. Joyce
Assistant Placement Officer	Patricia A. Logan
Loans Officer	Alan S. Mishne
Graduate Manager, Associated Students	Harvey J. Goodfriend
Business Manager	Selwyn C. Hartigan
Accounting Officer	Grant L. Nielsen
Administrative Assistant	Carolyn E. Kessler
Business Services Officer	Lois W. Sisson
Housing Manager	Willard W. Trask
Chief of Plant Operations	Timothy V. Hallahan
Personnel Officer	J. Austin Jillson

SAN DIEGO STATE COLLEGE ADVISORY BOARD

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Associate Members

Mrs. Douglas J. Schroeder President, San Diego Branch, American Association of University Women
Mrs. John Bogen President, Ninth District, California Congress of Parents and Teachers
Daniel W. Hale President, San Diego State Alumni Association

RESEARCH BUREAUS

Bureau of Business and Economic Research Gerald K. Sharkey, Director
Bureau of Educational Research Robert T. Gray, Coordinator
Center for Economic Education Joseph McClintic, Director
Center for Survey Research Oscar Kaplan, Director
Computer Center E. G. Bauer, Coordinator
Economics Research Center Kozo Yamamura, Coordinator
Institute of Labor Economics Adam Gifford, Coordinator
Public Affairs Research Institute W. Richard Bigger, Director
Social Research Center Aubrey Wendling, Director

THE COLLEGE

San Diego State College, founded in 1897, is one of the seventeen publicly supported California State Colleges. It is governed by the Board of Trustees of the California State Colleges and is administered through the Office of the Chancellor by the President of the College. The primary purpose of the College 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.

The campus is situated on a mesa overlooking Mission Valley, the site of the first mission founded in California by Father Junipero Serra. Alvarado Freeway cuts through the valley, bringing the campus to within a few 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. The heritage of the past lives in the mission style and Spanish-Moorish architecture of San Diego State's 303-acre campus.

San Diego State College, with an enrollment of more than 16,000 students, offers a four-year liberal arts course in over 50 major fields of study, graduate curricula leading to the master of arts and master of science degrees in 34 fields, and to the two-year Master of Business Administration and Master of Social Work degrees. The Doctor of Philosophy degree in Chemistry is offered jointly by the University of California at San Diego and San Diego State College.

Programs leading to teaching credentials authorizing teaching in the public schools of California from the kindergarten through the junior college are available.

ACCREDITATION

San Diego State College is a member of the Western College Association and the American Association of Colleges for Teacher Education. It is fully accredited by the Western College Association, the National Council for Accreditation of Teacher Education, the California State Board of Education, and is approved by the Veterans Administration for the education and training of veterans. The Master of Science degree in business administration is accredited by the American Association of Collegiate Schools of Business. The Department of Chemistry is on the approved list of the American Chemical Society, thereby enabling qualified students to receive the Certificate of the American Chemical Society. The Department of Music is a member of the National Association of Schools of Music. The School of Engineering is accredited in the fields of Aerospace, Civil, Electrical and Electronic, and Mechanical Engineering by the Engineer's Council for Professional Development.

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

THE FACULTY

The college faculty consists of over 1,000 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

Library resources and services for study and research include the book collection of 370,000 volumes, 80,000 government publications, 150,000 microform publications, 41,000 curriculum materials items, and about 30,000 pamphlets, prints, maps, manuscripts, recordings, photographs, and other related research type materials.

The library receives 4,500 periodicals, exclusive of government publications, holds 52,000 volumes of bound journals. It is a depository for United States and California publications, and has extensive holdings of publications of foreign countries,

the United Nations, Organization of American States, Council of Europe, and other international bodies, and of municipal governments.

Twenty-one 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.

Facilities for 2,200 readers are provided in the central library. Typing rooms, group study rooms, microfilm reading rooms, listening facilities, exhibit areas and individual study carrels are provided. Inexpensive copying machines are available.

LIVING ACCOMMODATIONS

Two men's and three women's campus residence halls, each accommodating 200 students, are available in September, 1966. These three-story buildings are attractively designed and are fireproof and air-conditioned throughout. Furnishings are particularly well selected to provide facilities for study and comfortable campus living.

Meals for all residence hall students are provided in the college cafeteria and are required for those under twenty-one years of age.

For 1966-1967, the total charge per student per semester for campus board and room will be slightly in excess of \$400, payable a semester in advance or on an installment plan that entails a \$6 service charge. Parking and health service benefits, including hospitalization, are included in this total. An additional security deposit of \$20 is refundable at the close of the college year.

Additional information concerning campus housing may be obtained from the office of the Director of Housing.

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 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 medical doctor and consisting of a full-time staff, assisted on a part-time basis by several medical specialists, are available to students for consultation, treatment of minor physical difficulties and emergencies, and counsel as to additional proper procedures. Full-time nurses are also on duty. During the weeks the college is in session, students may obtain appointments with specialists during the hours they are available at the office of Health Services. A student must be currently enrolled for seven or more units of credit to be eligible for other than emergency treatment.

A student insurance program is available for all those carrying seven or more units. The policy is reasonable in cost and provides medical and surgical care not provided by the Student Health Services.

PLACEMENT CENTER

The 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 possible employers, and (4) following through to learn of actual placement acceptance and the amount of success of the candidate.

The 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 na-

tional 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 Placement Center maintains a vocational library of current materials and company brochures from firms and agencies 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 individual needs. The wide range of tastes and financial resources of students in a college with an enrollment of more than 16,000 makes it difficult to give specific information on the cost of going to college. At San Diego State it is possible to live simply and participate moderately in college life and activities on a modest budget. A table of estimated costs is given below as a guide to students in planning the college budget.

ESTIMATED EXPENSES FOR ONE SEMESTER

Typical Cost for Living on Campus

Materials, service, student activity, and student union fee	\$51.00
(Non-resident tuition for out-of-state students of \$300, or Foreign Student tuition of \$127.50, is in addition to above fee.)	
Books and supplies	75.00
Room, board, health services, parking	420.00
Clothing, laundry, cleaning	124.00
Personal	180.00
	<hr/>
	\$850.00

Typical Cost for Commuting Students

Materials, service, student activity, and student union fee	\$51.00
Books and supplies	75.00
Lunches	81.00
Transportation	90.00
Parking	13.00
Personal	90.00
	<hr/>
	\$400.00

PART THREE

THE GRADUATE DIVISION

Graduate study at San Diego State College began in 1946 with an authorization to offer a graduate program leading to the general secondary teaching credential. The Master of Arts degree was first authorized in 1949; the Master of Science degree in 1955; the Master of Business Administration and the Master of Social Work degrees in 1963.

In July, 1965, San Diego State College was authorized to offer a graduate program leading to the Doctor of Philosophy degree in Chemistry jointly with the University of California, San Diego. The first candidate was admitted to this program in September, 1965.

Graduate curricula at San Diego State College 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.

As of September 1965, 3,619 graduate students were enrolled at the College. From 1949 to 1964, 1,723 Master of Arts degrees and 390 Master of Science degrees have been awarded.

All graduate study leading to advanced degrees is incorporated in the Graduate Division which also undertakes the development and improvement of graduate curricula in liberal arts and professional fields, especially those fields concerned with teaching, supervising, or administering in the schools of California. Responsibility for all graduate curricula is delegated to the Graduate Council under the Dean of Graduate and Professional Studies who acts as the administrative officer of the Graduate Division and chairman of the Graduate Council.

THE GRADUATE COUNCIL

The Graduate Council of the Graduate Division at San Diego State College consists of the Vice President for Academic Affairs, the Dean of Graduate and Professional Studies, the Coordinator of Graduate Studies, and members of the faculty appointed by the President upon recommendation of the appropriate dean or chairman of a school or division of the College. For the academic year 1966-1967, the membership of the Graduate Council is as follows:

Donald R. Watson, Ed.D. (ex officio)	Vice President for Academic Affairs
Maurice M. Lemme, Ph.D.	Dean of Graduate and Professional Studies
Millard R. Biggs, Ph.D.	Coordinator of Graduate Studies
Richard H. Lawson, Ph.D.	Arts and Sciences
David W. Belcher, Ph.D.	School of Business Administration
Glenn H. Hodge, Ph.D.	School of Business Administration
Russell L. Trimmer, Ph.D.	School of Education
Sanford H. Stone, M.S., M.S.E.	School of Engineering
Ernest F. Witte, Ph.D.	School of Social Work
John W. Ackley, Ph.D.	Division of Fine Arts
Angela M. Kitzinger, Ph.D.	Division of Health Education, Physical Education, and Recreation
John W. Dickinson, Ph.D.	Division of Humanities
David A. Farris, Ph.D.	Division of the Life Sciences
William A. Hunrichs, Ph.D.	Division of the Life Sciences
Robert W. Isensee, Ph.D.	Division of the Physical Sciences
Calvin V. Holmes, Ph.D.	Division of the Physical Sciences
James D. Kitchen, Ph.D.	Division of Social Sciences
Spencer L. Rogers, Ph.D.	Division of the Social Sciences

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 departmental requests for new graduate level (200-numbered) courses and new advanced degree curriculums.
10. Coordinating and systematizing procedures followed by departments, divisions, or schools offering advanced degrees or credentials.
11. Making recommendations to the President, the Vice President for Academic Affairs, committees of the College, the Senate, and the faculty on matters pertaining to graduate study at San Diego State College.

AUTHORIZED GRADUATE DEGREES

DOCTOR OF PHILOSOPHY

Chemistry

MASTER OF ARTS

Anthropology
Art
Biology
Business Education
Chemistry
Economics
Education
English
French
Geography
German
Health Education
History

Industrial Arts
Mathematics
Music
Philosophy
Physical Education
Physical Science
Physics
Political Science
Psychology
Social Science
Sociology
Spanish
Speech Arts

MASTER OF SCIENCE

Aerospace Engineering
Astronomy
Biology
Business Administration
Chemistry
Civil Engineering
Electrical Engineering

Geology
Mathematics
Mechanical Engineering
Physics
Psychology
Public Administration

MASTER OF BUSINESS ADMINISTRATION

MASTER OF SOCIAL WORK

TEACHING CREDENTIALS

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

The Standard Teaching Credential with a Specialization in Elementary Teaching
The Standard Teaching Credential with a Specialization in Secondary Teaching
The Standard Teaching Credential with a Specialization in 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 psychometrist and school psychologist endorsements)

The Standard Designated Services Credential with a Specialization in Health
The Standard Supervision Credential

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

GRADUATE STUDY IN THE SUMMER SESSIONS

San Diego State College conducts summer sessions in which a graduate student may earn credit in residence which may be used to satisfy the requirements for an advanced degree or for credentials. Before credit earned in the summer sessions is accepted on an advanced degree program, a student must meet the requirements for classified graduate standing in the Graduate Division. The acceptance of courses by other colleges or by a teacher's local school board for salary schedule purposes as graduate credit is entirely optional with the college or school system 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 six academic units may be earned; and Term II of three weeks, during which time three academic units may be earned. In the Intersession only a limited number of special workshops and conferences are usually offered. Students who enroll for more units than authorized, including concurrent college courses taken outside this college, will not receive graduation credit for the excess units.

GRADUATE STUDY FOR FOREIGN STUDENTS

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

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

The letter of inquiry should state the area in which the student wishes to study and whether or not the student intends to seek an advanced degree. No student will be permitted to engage in graduate study at the College until he has complied with the requirements and procedures of the Office of Admissions and has been admitted to the College with unclassified graduate standing.

An applicant whose education has been in a language other than English must take the Test of English as a Foreign Language (TOEFL). This test is administered in most foreign countries and test scores must be received by the College before admission to the College can be granted. Information as to the time and place at which this test is given may be obtained from the Educational Testing Service (TOEFL), Princeton, New Jersey 08540, U.S.A.

A student whose undergraduate instruction has been in a language other than English will generally need at least two years for the completion of the requirements for the master's degree. Since no graduate fellowships or scholarships are available for foreign graduate students at San Diego State College, arrangements

for financial support necessary for three or four semesters should be made before the student comes to the United States.

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

Arrangements for housing should be completed before the student's arrival on the campus. Detailed information regarding housing may be obtained from the Director of Housing, San Diego State College.

Upon arrival at San Diego State College, the foreign graduate student should arrange for appointments with the Adviser for Foreign Students and the Dean of Graduate Studies.

VETERANS AND GRADUATE STUDY

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

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

Graduate veterans are required to carry graduate loads of not less than 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, business education, chemistry, 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 the college, 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.

Information concerning an appointment as a graduate teaching assistant may be obtained from the head of the department, division, or school 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 the College 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. Application forms are accepted at any time and must be filed in the Graduate Office at least one month prior to 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 College.

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.

One Secondary Teacher Education Scholarship of \$400 to be granted only to fifth year students training to teach in the public schools of California on a general secondary credential. It may be divided into \$200 awards if, in the judgment of the Scholarship Committee, this would be a wise procedure.

SAN DIEGO INSTITUTE ON GOVERNMENT SCHOLARSHIP IN PUBLIC ADMINISTRATION

A \$200 scholarship awarded annually to a student enrolled for full-time study toward the M.S. Degree in Public Administration. Make application to Chairman, Political Science Department.

SAN DIEGO HUMAN FACTORS SOCIETY

A \$50 annual scholarship to a psychology major in area of experimental or engineering psychology; graduate student in engineering psychology preferred. Nominations are made by the Department of Psychology; final selection of the recipient is made by the San Diego Human Factors Society.

DOROTHY CRANSTON STOTT

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

K. W. STOTT

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

ZONTA INTERNATIONAL CLUB SCHOLARSHIP

Awarded to a graduate or upper division student with a major in Speech Correction. Applicants must be recommended by the Speech Arts Department and the recipient must spend eight hours a week in the clinical work of the Speech Arts Department. Amount of scholarship variable. Selection is made by the Department of Speech Arts.

STIPENDS FOR SOCIAL WORK

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

FINANCIAL AID

At San Diego State College, every effort is made to see that students who wish to attend are not prevented from doing so because of inadequate financial resources. To this end, financial aid in the form of loans and opportunity for part-time employment is made available to qualified applicants. In a majority of cases, a student will be offered a package financial aid plan which may include a loan and part-

time employment. The programs explained below are administered by the Financial Aid Office, Administration Building, Room 207.

SAN DIEGO STATE COLLEGE FOUNDATION LOAN PROGRAM

Through the generosity of a number of individuals and groups, funds have been established to assist students with both short-term and deferred loans. Completion of at least one semester of full-time attendance at San Diego State College is required before the student is eligible. The amount that may be borrowed, based on college-related need, 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 students who can meet the specific qualifications. All students, both entering and continuing, may apply for these loans. The amount that may be borrowed, based on college-related need, may not exceed \$2,500 per year for graduate students. Repayment begins nine months after the student ceases to carry at least one-half of the normal full-time academic study load at the College and ends ten years and nine months after this date. The interest rate is three percent simple interest per year. This loan program provides a borrower with a partial cancellation of ten or fifteen percent of his loan, 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

United Student Aid Fund Loans in conjunction with the student's home town bank are available to graduate students meeting specific requirements. The amount that may be borrowed, based on college-related need, may not exceed \$2,000 per year for graduate students. Repayment begins five months from the time the borrower graduates and may extend between thirty-six and fifty-four months. The interest rate is 6% simple interest beginning at the time the loan is granted.

COLLEGE WORK-STUDY PROGRAM

San Diego State College participates in the College Work-Study Program under the Economic Opportunity act of 1964. Students may qualify for financial aid in the form of part-time employment if they meet the specific qualifications of this program. All students, both entering and continuing, are eligible to apply. (Where feasible, College Work-Study grants will be combined with loans, scholarships, and other financial aid.) Students may work in on-campus positions for up to fifteen hours per week. The rate of pay for such employment is \$1.25 to \$2.10 per hour.

MINIMUM REQUIREMENTS FOR ALL APPLICATIONS

The College participates in the College Scholarship Service (CSS) of the College Entrance Examination Board. As a participant, the institution subscribes to the principle that the amount of financial aid granted a student should be based upon financial need. The CSS assists the college in determining the student's need for financial assistance. All students under twenty-five years of age, regardless of marital status, who request financial assistance in excess of \$200 per year 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. Necessary forms, in addition to the financial aid application and brochure, may be obtained at the Financial Aid Office.

APPLYING FOR AID

Students may request assistance for all programs explained above on one financial aid form 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. Application forms are available between February 15 and June 1, 1966 for the 1966-1967 academic year. To the extent that funds are still available, students may apply for aid from any program after the academic year has begun.

COUNSELING AND GUIDANCE TRAINING INSTITUTE

Arrangements have been made with the U.S. Department of Health, Education and Welfare for San Diego State College to offer two counseling and guidance training institutes under provisions of the National Defense Education Act, Public Law 85-864, during 1966 and 1967.

During the 1966 summer session, an eight-week institute will be offered and during the 1966-1967 academic year a 36-week institute will be offered.

Information concerning these institutes may be obtained from Dr. David D. Malcolm, Coordinator of Guidance Studies, San Diego State College.

INSTITUTE FOR SECONDARY SCHOOL TEACHERS OF MATHEMATICS

Under a grant from the National Science Foundation, San Diego State College is offering a full-time Academic Year Institute for 25 high school teachers of mathematics during the academic year 1965-1966. All participants will attend an eight-week preliminary session starting June 27, 1966.

To be eligible for admission to the Institute, the applicant must be admitted to the College 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 \$3,600 which includes both the academic year and the preliminary summer session. Additional 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 College.

ADMISSION OF GRADUATE STUDENTS TO THE COLLEGE

The conditions for admission of graduate students to San Diego State College 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."

ADMISSION PROCEDURE

All new graduate students (including graduates of San Diego State College) 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:

1. **File Application for Admission to the College.** This application *must be accompanied by an application fee of \$5 payable to San Diego State College*, and should be filed during the semester preceding the one in which the student expects to enroll. The following forms must be filed in the Admissions Office: (1) Application for Admission (or readmission); (2) Health History Record; and (3) Statement of Residency. These forms may be obtained from the Admissions Office. Letters from students signifying intention to enroll will not be considered as applications for admission. The official forms must be filed. The last dates for filing applications are as follows:

For fall semester: July 15.

For spring semester: December 15.

2. **File Official Transcripts.** The student must file official transcripts from **EACH** college or university attended (including extension, correspondence, summer session, or evening courses). If a student plans to enter a master's degree curriculum or a graduate credential program, he must file all transcripts in **duplicate**. An official transcript is one sent directly between registrars of schools. The student should request the college or university attended to send all transcripts to the Admissions Office, San Diego State College. All records or transcripts received at the Admissions Office become the property of the college and **will not be released nor will copies be made**.

A student who has obtained his degree from San Diego State College is not required to file transcripts, except those transcripts covering work he may have taken at other institutions. He must, however, file an application for readmission to the college and, if he plans to enter a master's degree curriculum, an application for admission to the Graduate Division and must comply with all other admission procedures outlined above.

RESIDENCY STATUS CLEARANCE

Each student enrolling in the college must be designated as a resident or nonresident student, prior to the payment of registration fees.

The residency classification received by any student is subject to review and change. Each student is held responsible for notifying the Residency Status Office of any change in his legal status as a resident of California. A new residency declaration must be made whenever a student interrupts continuous attendance at this college.

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 from audit to credit or from credit to audit; and changing sections of the same course. Consult calendar for deadline dates for change of schedule.

ADMISSION TO THE COLLEGE FOR POSTGRADUATE STUDY

Admissions standards in the California State Colleges are prescribed by the Trustees of the California State Colleges and are stated in the California Administrative Code, Title 5, Education, section 40600-41200.

NOTE: At San Diego State College, only fully matriculated students are accepted for enrollment in any regular semester. This includes auditors.

An applicant for admission who holds an acceptable bachelor's degree from an accredited institution may be admitted to the College by the Dean of Admissions and Records who notifies the applicant that he has been admitted with **unclassified graduate standing**.

An applicant who does not hold an acceptable bachelor's degree from an accredited institution may be admitted to the College by the Dean of Admissions and Records as an **undergraduate student**. Upon satisfactory completion of a minimum of 12 units of undergraduate courses approved by the Dean of Admissions and Records with a grade point average not less than 2.50, the student may receive **unclassified graduate standing** from the Dean of Admissions and Records.

A student who has been admitted to the college with **unclassified graduate standing** must file an application for admission to the Graduate Division if he wishes to enter a graduate degree curriculum. Refer to the section on Admission of Graduate Students to the Graduate Division in this bulletin.

Unclassified Graduate Student Enrollment

An unclassified graduate student is not eligible to enroll in 200-numbered courses, except with permission of the instructor and concurrence of the Dean of Graduate Studies. All credit earned by an unclassified graduate student is subject to evaluation as to its acceptance for graduate credit in a master's degree curriculum.

REGISTRATION

Only students who have received a Notice of Admission from the Dean of Admissions and Records will be eligible for registration for the Fall or Spring Semesters. Students who have allowed a semester or more to lapse in regular attendance at the college will be required to file an application for readmission. This regulation does not apply to Summer Session registration.

Directions for registration are published each semester in the Class Schedule, available at the College Book Store at the beginning of each semester.

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.

STUDENT DISCIPLINE AND ATTENDANCE

Any student may be placed on probation, suspended, or expelled for one or more of the following causes:

- (a) Disorderly, unethical, vicious, or immoral conduct.
- (b) Misuse, abuse, theft, or destruction of state property.

The period for which the student may be placed on probation or suspended by the president shall not exceed 12 months. Fees or tuition paid by or for the semester or summer session in which he is suspended will not be refunded.

The above penalties may be applied in cases involving academic dishonesty: cheating in tests, examinations, laboratory work, written work (plagiarism)—that is, for any attempt to get credit for work not performed.

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 master's degree.

ADMISSION OF GRADUATE STUDENTS TO THE GRADUATE DIVISION

Students will be admitted to the Graduate Division only after they have been officially admitted to the College 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 41001 (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 College, 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 College, 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. (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, divisional 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 in the Graduate Division.

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, division, or school, he may reapply for classified graduate standing and admission to the Graduate Division.

Assignment of a Graduate Adviser

At the time a student is given notice of having attained classified graduate standing in the Graduate Division, he is assigned an official adviser in the appropriate department, division, or school who assists him in planning an official program for the master's degree. The program 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 of Graduate Studies.

Graduate students who wish to work for a credential but not for an advanced degree are referred to the appropriate coordinator in the School of Education.

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 such professional and personal standards as the Graduate Council may prescribe, and after receiving the recommendation of his department, a student is eligible for advancement to candidacy.

WITHDRAWALS

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

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

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 approved 100-numbered courses for concurrent master's degree credit with the remaining requirements for the bachelor's degree. Enrollment in 200-numbered courses is not permitted. The bachelor's degree must be 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. The rules of the Graduate Division concerning academic load must be observed. (Refer to the section of this bulletin on Regulations of the Graduate Division for information on study list limits.)

REGULATIONS OF THE GRADUATE DIVISION

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

All graduate students admitted to the college after August, 1966 will be required to follow the procedures and regulations stated in the 1966-1967 editions 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 (commendable), 3 points; C (satisfactory), 2 points; D (passing), 1 point; F (failure), 0 points; Inc (incomplete), counted as units attempted, 0 points; W (withdrawal), not counted in grade point average; WF (withdrawal failing), counted as failing in the grade point average; Cr (credit) signifying units earned, but not counted in the grade point average. The mark "Cr" is used in reporting satisfactory completion of certain courses, such as Course 299, where letter grades would be inappropriate. No course in which a final grade below "C" was earned may be used to satisfy the requirements for an advanced degree.

GRADE POINT AVERAGES

Grade point averages are determined by dividing the total number of grade points earned by the total number of units attempted. 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 and grade points earned, subject to the regulations for repeating courses. The incomplete will remain on the student's permanent record as units attempted with no grade points earned and cannot thereafter be made up through removal of course deficiencies.

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 Inc. (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.

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

WITHDRAWALS FROM COURSES

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 and not later than the end of the ninth week of classes, either a W (withdrawal passing) or WF (withdrawal failing) will be recorded, depending upon whether he is passing or failing the course on the date of filing the request for withdrawal. (WF is equivalent to a failing grade.) After the ninth week, withdrawal from a class is not permitted. A final grade will be recorded for each class for which the student is enrolled. Withdrawal from college (that is from all courses) will be permitted up to 10 days preceding the final examination schedule; however, the student will receive a W or WF grade in each class, depending upon whether he is passing or failing in the class on the date of filing his request for withdrawal from college.

Improper Registration in Graduate Courses. The registration of graduate students in Course 298, Special Study, and Course 299, Thesis, will be cancelled if the prerequisites for these courses 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 without filing official withdrawal forms with the Registrar within the deadline dates established for withdrawal.

REPEATED COURSES

A graduate student may not repeat courses which have been taken as part of the master's degree, except in the case of courses required as prerequisites to a master's degree program. Such courses may be repeated under the overall college regulations for repeated courses. (Refer to the General Catalog.)

PROBATION

Any undergraduate student whose scholarship record falls below a "C" average (2.0) for all college work attempted, or all college work attempted at San Diego State College, will be placed on probation by the Office of Admissions. Probation may be continued, provided that the student obtains a "C" average or better each semester while on probation. The student will be removed from probation when he has attained a "C" average or better on all college work attempted and on all college work attempted at San Diego State College.

These regulations regarding probation in the College also apply to the graduate student, except that only postgraduate work is counted.

DISQUALIFICATION FROM THE COLLEGE

Disqualification for Scholarship. Any student on probation whose scholarship falls below a "C" average (2.0) in any single semester or summer session will be subject to disqualification and dismissal from the college. Veterans who are disqualified from further attendance at this college forfeit their rights to veterans' benefits. Specific information may be obtained from the Veterans Administration regarding disqualification of veterans in graduate curricula.

Reinstatement After Disqualification. A disqualified student may be readmitted to the college for reasons satisfactory to the Board of Admissions. Applications for readmission must be made on forms which may be obtained at the Admissions Office.

DISQUALIFICATION FROM THE GRADUATE DIVISION

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

TRANSCRIPTS OF RECORD

An official transcript of record may be obtained by filing an application for transcript at the Registrar's Office. A fee of \$1 is charged for each transcript (first copy free). 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. Once a student has matriculated in this college or has had an official evaluation made, transcripts from other schools or colleges become the property of this college and will not be released nor will copies be made.

AUDITORS

A graduate student who does not wish to take a course for credit may enroll as an auditor, class size permitting. An auditor must meet all admission requirements, pay the same fees, and comply with all regulations required of students taking the course for credit. An auditor is not held for examinations and does not receive credit or a final grade in the course. A student may change his program from "audit" to "credit" or vice versa within the time limits authorized for changes of program and subject to the regulations for withdrawal from classes.

FINAL EXAMINATIONS

No final examination shall be given to individual students before the regularly scheduled time. Any student who is passing in a course and 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; and 34 units for the Master of Social Work degree. To be accepted as a part of the requirements for these degrees, all credit earned in other colleges or in extension courses must be approved by the appropriate graduate adviser and the Dean of Graduate Studies. **Approval of extension course credit must be obtained by the student prior to the date of completion of the extension course.** Credit earned by correspondence is not accepted as satisfying degree requirements.

STUDY LIST LIMITS IN THE GRADUATE DIVISION

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

A graduate student who is not taking any 200-numbered courses may register for 17½ units of credit during any semester. If one or more 200-numbered courses are included in the study list, the maximum number of units permitted is 15. An excess study load requires the approval of the Dean of Graduate Studies at the beginning of the semester in which the credit is to be earned. The maximum amount which will be approved by petition for any one semester for students carrying one or more 200-numbered courses is 17 units and for any one year, 33 units.

Graduate students who are employed full time should not attempt to earn more than six units of credit per semester. Graduate students attending summer sessions are limited to one unit of credit per week of attendance.

Graduate students who are employed as teaching assistants at San Diego State College are limited to 15 units of combined teaching assignments and course work unless their request for excess load is approved by the Dean of Graduate Studies.

Students who enroll for more units than authorized will not receive credit on their official master's 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.

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 in 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 College, the candidate must have completed the following general requirements of the Graduate Division and the specific requirements listed in the appropriate sections of Part Four of this bulletin, Fields of Study and Courses of Instruction for the Master's Degree:

(A) ADVANCEMENT TO CANDIDACY:

A student who holds *classified graduate* standing in the Graduate Division at San Diego State College and who meets its scholastic, professional, and personal standards may be considered for advancement to candidacy for the master's degree provided he has filed an official program of study approved by the appropriate graduate adviser and the Dean of Graduate Studies. For the Master of Arts and the Master of Science degrees, a student may be advanced to candidacy after he has earned at least 12 units in his graduate program with a minimum grade point average of 3.0 (B), or six units of his program if he is a graduate of San Diego State College provided his undergraduate grade point average was at least 2.75; for the Master of Business Administration degree, the student must have earned at least 24 units in his graduate program in the School of Business Administration with a minimum grade point average of 3.0 (B); and for the

Master of Social Work degree, the student must have earned at least 27 units in his graduate program in the School of Social Work with a minimum grade point average of 3.0 (B).

In addition to having the grade point averages specified above, the student must (1) have completed all undergraduate deficiencies and the special requirements of the department, division, or school concerned; (2) have attained satisfactory scores on the Graduate Record Examination Aptitude Test; (3) have passed the foreign language examination if required; (4) have been recommended for advancement to candidacy by the department, division, 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:

A reading knowledge of a foreign language is required in certain Master of Arts degree curricula. Competence is determined by examinations administered and evaluated by the department of the language concerned. Information concerning the dates upon which specific foreign language examinations are scheduled may be found in the Class Schedule or by inquiring at the departmental offices. The student is required to pass his foreign language examination before he can be advanced to candidacy.

(D) UNIT REQUIREMENTS:

Master of Arts and Master of Science degrees:

Thirty units of approved 100- or 200-numbered courses earned in graduate standing, at least 24 of which must be completed in residence. At least 12 units must be in 200-numbered courses. Not more than a total of 6 units in approved extension and transfer courses may be used to satisfy the minimum 30 units required for the degree. Courses required to remove undergraduate deficiencies are in addition to the minimum 30 units required for the degree. Credit earned by correspondence is not acceptable. Not more than a total of 6 units in special study courses numbered 199 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 degree. Courses required to remove undergraduate deficiencies are in addition to the minimum 54 units for the degree. Credit earned by correspondence is unacceptable.

Master of Social Work degree:

Fifty-eight units of 200-numbered courses specified by the School of Social Work at least 24 of which must be completed in residence. Courses required to remove undergraduate deficiencies are in addition to the minimum 58 units for the degree. Credit earned by correspondence is unacceptable.

(E) COURSE REQUIREMENTS:

In all master's degree curriculums offered at San Diego State College, any course completed more than seven years prior to the date on which all

requirements for the degree are completed cannot be used to satisfy the foregoing unit requirements except that the Graduate Council, on the recommendation of the department, division, or school concerned, may extend the time for students who pass a comprehensive examination in the relevant course. With the approval of the appropriate graduate adviser and the Dean of Graduate Studies, a more recently completed course may be substituted for an out-dated one.

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

A minimum of nine units of courses listed on the official program of study must be completed *after* advancement to candidacy for the Master of Arts and the Master of Science degrees. A minimum of 24 units on programs of study for the Master of Business Administration and Master of Social Work degrees must be completed *after* advancement to candidacy.

Specific courses required in the basic 30, 54, or 58 units and the requirements concerning foreign languages are listed in the appropriate sections of Part Four, Fields of Study and Courses of Instruction under Specific Requirements for the Master's Degree.

(F) THESIS:

Plan A, requiring a thesis, may be selected by a student seeking the master's degree provided the department, division, or school concerned approves the listing of Course 299, Thesis, on the official program of study. Three units of "Cr" are granted for the satisfactory completion of the thesis or project following its acceptance by the student's thesis committee, the department, division, or school concerned, and the Graduate Council. Assigning of "Cr" grade for the thesis is the responsibility of the Graduate Office. Registration in Course 299, Thesis, is required; however, students will not be permitted to register for this course until they have received official notification of advancement to candidacy from the Graduate Office and have an officially appointed thesis or project committee. Theses or projects must be completed well in advance of the date of the convocation at which the degree is to be conferred. Refer to the calendar in Part I of this Bulletin for deadline dates.

The thesis should be completed within one calendar year following the date of the beginning of the semester or summer session in which the student first registers in Course 299, Thesis. Refer to the section on Incomplete Grade in this bulletin.

All theses or projects must be typed on special water-marked thesis paper available at the College Book Store. 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 College and are subject to the regulations of the Library with respect to the circulation or duplication of its cataloged materials.

Plan B, requiring a comprehensive examination in lieu of a thesis, may, with the approval of the department, division 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, division, or school concerned. Results on comprehensive examinations must be reported to the Graduate Office by the department, division, or school. Refer to the calendar in Part I of this Bulletin for deadline dates.

(G) GRADE POINT AVERAGES:

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

1. All programed 100-numbered courses required for the removal of undergraduate deficiencies.
2. All programed courses including courses accepted for transfer credit and courses taken concurrently with or subsequently to courses accepted for transfer.

3. All 100- or 200-numbered courses taken at San Diego State College concurrently with or subsequently to the earliest course listed on the official master's degree program.

(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 in 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 College, 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 College Book Store.

REQUIREMENTS FOR THE JOINT-DOCTORAL DEGREE

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.

PART FOUR

FIELDS OF STUDY AND COURSES OF INSTRUCTION

This section contains the specific requirements for all graduate degrees authorized at San Diego State College by the Board of Trustees of the California State Colleges. These specific requirements of departments, divisions, 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 College Bookstore prior to the date of registration of each semester, or the summer session bulletin which is available prior to the opening of summer session.

The college 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 through the instructor, the chairman of the department concerned, and the Graduate Office. Forms for this purpose are available 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.

ANTHROPOLOGY

GENERAL INFORMATION

The Department of Anthropology, in the Division of the Social Sciences, offers graduate study leading to the Master of Arts degree with a major in anthropology. For graduate study in connection with the Master of Arts degree for teaching service with a concentration 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 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 the equivalent to those required for an undergraduate major in anthropology at San Diego State College. 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 student must: (a) Pass a diagnostic written examination, after one semester of graduate work in Anthropology, divided equally among the following four fields: physical anthropology, archaeology, ethnology, and social anthropology; (b) Pass an examination demonstrating reading knowledge of a foreign language approved by the Department and administered by the Department of Foreign Languages.

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 graduate program of at least 30 units, of which a minimum of 24 units must be selected from courses in anthropology listed below as acceptable on master's degree programs. At least 15 units must be in 200-numbered courses including Anthropology 200, Seminar, and Anthropology 299, Thesis. 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.

TEACHING 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, Division of the Social Sciences: D. S. Milne, Ph.D.
 Chairman, Department of Anthropology: S. L. Rogers, Ph.D.
 Coordinator of Graduate Programs in Anthropology: S. L. Rogers, Ph.D.
 Graduate Advisers:
 Archaeology: D. L. Brockington, P. H. Ezell
 Physical Anthropology: D. L. Brockington, S. L. Rogers
 Ethnology: V. Goldkind, H. Lewis, C. E. Mann
 Ethnohistory: A. J. Anderson, P. H. Ezell
 Social Anthropology: V. Goldkind, H. Lewis
 Ethnolinguistics: A. J. Anderson, C. E. Mann
 Professors: P. H. Ezell, Ph.D.; S. L. Rogers, Ph.D.

Associate Professors: A. J. Anderson, Ph.D.; Victor Goldkind, Ph.D.
 Assistant Professors: D. L. Brockington, Ph.D.; A. D. Buck, Jr., M.A.;
 H. T. Lewis, B.A.; C. E. Mann, Ph.D.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN ANTHROPOLOGY

UPPER DIVISION COURSES

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| 115. Primatology (3) | 171. Ethnology of North America (3) |
| 120. Introduction to Anthropological Linguistics (3) | 172. Indian Cultures of the Southwest (3) |
| 122. Language in Culture (3) | 173. Archaeological Field Methods (3) |
| 124. Descriptive Linguistics (3) | 174. Prehistoric Archaeology of Europe (3) |
| 150. Ethnological Field Methods (3) | 175. Cultures of Southeast Asia (3) |
| 153. Primitive Religion (3) | 176. Early Near and Middle Eastern Civilizations (3) |
| 155. Peasant Society and Culture (3) | 179. Applied Anthropology (3) |
| 156. Culture Change and Processes (3) | 180. Preclassic Aboriginal Civilizations of Mid-America |
| 158. Economic Anthropology (3) | 181. Classic Pre-Columbian Civilizations of Middle America (3) |
| 159. Cultural Ecology (3) | 182. Post-Conquest Cultures of Middle America (3) |
| 160. Primitive Technology (3) | 199. Special Study (1-6) |
| 161. The California Indian (3) | |
| 162. Cultures of South America (3) | |
| 163. Contemporary Latin American Cultures (3) | |
| 165. Culture and Personality (3) | |
| 170. Archaeology of North America (3) | |

GRADUATE COURSES

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

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

233. Social Structure (3)
 Prerequisite: 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 designed to permit concentrated studies of the area and those related to it, based on archaeology, aboriginal records, colonial accounts, and modern studies; and to permit various approaches to such studies.

256. Cultures and Societies in Southern 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.

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. An analysis of recent literature, with evaluation oriented toward significance for research.

298. Special Study (1-6)

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.

Guidance in the preparation of a project or thesis for the master's degree.

ART

GENERAL INFORMATION

The Department of Art, in the Division of the Fine Arts, offers graduate study leading to the Master of Arts degree with a major in art and to the Master of Arts degree for teaching service with a concentration in art.

The Art Department is prepared to offer advanced study to graduate students in the fields of painting, sculpture, ceramics, printmaking, and the history of art. In addition to the excellent equipment of the Fine Arts Building at the college, the Fine Arts Gallery of San Diego and the Museum of Archeology, both located in Balboa Park, offer valuable original materials as well as specialized libraries for research in those fields.

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 general, the student must have completed an undergraduate major in art with a minimum of 24 upper division units, including a course in the principles of art appreciation and two semesters' work in the general history of art, before he will be permitted to begin work on his graduate program. The student must also be able to show that he is adequately advanced both in drawing and design to carry out projects which measure up to graduate standards. This requirement will be measured through an examination of examples of the student's undergraduate work. If it is determined that the student is capable of doing graduate art work, he may be permitted to begin such work even though he has not completed an appropriate undergraduate major in art. Those students whose work is insufficiently advanced for classified graduate standing may enroll for courses, under guidance of the department, in order to meet the standard requirements.

ADVANCEMENT TO CANDIDACY

In addition to meeting the requirements for advancement to candidacy as described in Part Three of this bulletin, all students will be required to pass a comprehensive examination covering the fields of History of Art of Western Civilization, Principles of Art Appreciation, and the techniques and materials of the artist.

Students working for a Master of Arts degree in the field of art history must complete the following courses or their equivalents before advancement to candidacy:

Anthropology: 1B or 103

Art: 5, 50A-50B, 51, 52A-52B, 153, 154, 155, 156, 157, 158.

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 art from courses listed below as acceptable on master's degree programs in art, of which at least 16 units must be in the 200-numbered courses. Art 292A or Art 292B, Art 294A or Art 294B, and Art 299 are required courses. If a student completes a creative project in Art 299, he must also complete Art 290; if he completes a thesis, he must also complete Education 211, Procedures of Investigation and Report. Not more than a total of 6 units in the special study courses Art 199 and Art 298 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.

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 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 299, and Education 211 are required courses. Not more than a total of 6 units in the special study courses Art 199 and Art 298 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 cataloged and accessioned in the college library; projects remain in the custody of the Department of Art at the college.

FACULTY

Chairman, Division of the Fine Arts: G. N. Sorenson, M.A.

Chairman, Department of Art: J. D. Swiggett, M.F.A.

Graduate Advisers: Major, J. D. Swiggett; Teaching, J. H. Dirks

Credential Adviser: J. D. Swiggett

Professors: J. H. Dirks, M.F.A.; Ilse H. Ruocco, M.A.; G. N. Sorenson, M.A.; J. D. Swiggett, M.F.A.

Associate Professors: Marybelle S. Bigelow, M.A.; P. A. Lingren, M.A.; Martha W. Longenecker, M.F.A.; JoAnn L. Tanzer, M.A.; R. D. Wallace, D.Litt.

Assistant Professors: K. L. Baker, M.F.A.; R. J. Baxter, M.F.A.; R. V. Berg, M.A.; W. F. Bowne, M.A.; D. P. Covington, M.F.A.; Arline M. Fisch, M.A.; Winifred H. Higgins, Ph.D.; J. R. Hopkins, M.F.A.; L. B. Hunter, M.A.; A. W. Miller, M.A.; J. J. Rogers, M.S.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN ART

UPPER DIVISION COURSES

100A-100B. Advanced Drawing (2-2)
106A-106B-106C. Printmaking (2-2-2)
107. Color and Design in Merchandise (2)

111A-111B. Industrial Design (2-2)
112A-112B. Design and Composition (2-2)

113A-113B. Advanced Furniture Design (2-2)

114A. Design for Advertising (2)

114B-114C. Advanced Advertising Design (2-2)

114D. Advanced Graphic Communication (2)

115A-115B-115C-115D. Life Drawing and Painting (2-2-2-2)

116A-116B-116C-116D. Advanced Painting (2-2-2-2)

117A-117B-117C-117D. Advanced Sculpture (2-2-2-2)

118A-118B. Advanced Watercolor Painting (2-2)

119A-119B-119C. Ceramics (2-2-2)

120A-120B. Advanced Design (2-2)

122. Art Education Colloquium (2)

153. Ancient Art (3)

154. Medieval Art (3)

155. Renaissance Baroque and Rococo Art (3)

156. History of Modern Art (3)

157. History of American Art (3)

158. Art of Primitive Peoples (3)

161A-161B. Design in Crafts (2-2)

170A-170B. Jewelry (2-2)

180A-180B. Advanced Weaving (2-2)

191. Gallery Exhibition (2)

193. Drawing and Illustration for Graphic Communication (2)

195A. Interior Design (2)

195B. Environmental Design (2)

199. Special Study (1-6)

GRADUATE COURSES

206A-206B. Creative Printmaking (1-6)

Advanced creative work in selected printmaking media based upon the analysis of the history and philosophies of printmaking from its inception through contemporary concepts. May be repeated to a maximum of six units towards the master's degree.

216A-216B. Creative Painting (1-6)

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

Aesthetic organization of selected visual subject matter in the medium of colors in oils. May be repeated to a maximum of six units towards the master's degree.

217A-217B. Creative Sculpture (1-6)

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

Aesthetic organization of selected subject matter in the media of sculpture. May be repeated to a maximum of six units towards the master's degree.

219A-219B. Creative Crafts (1-6)

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. May be repeated to a maximum of six units towards the 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)

Seminars in creative art are offered to provide discussion and independent research in specified areas and include the presentation of a paper with its oral defense.

Each course may be taken to a maximum of six units. No more than six units of the 291 series is 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

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

Prerequisites: 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.

298. Special Study (1-6)

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.

Guidance in the preparation of a project or thesis for the master's degree.

ASTRONOMY

GENERAL INFORMATION

The Department of Astronomy, in the Division of the Physical 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. The College 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 UBV and narrow band filters is attached to each of the 16-inch and the 24-inch telescopes, and a regular schedule of nightly observations is now in operation. Also, an IBM 1620 electronic computer is available. San Diego State College 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. It is expected that a 16-inch reflecting telescope with photometer will be in operation by the summer of 1966, and that, a few months following, a 24-inch reflector with photometer will be in operation.

ADMISSION TO THE GRADUATE DIVISION

All students must satisfy the general requirements for admission to the Graduate Division with classified graduate standing, as described in Part Three of this bulletin under Admission to the Graduate Division. In addition, the student must have an 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 this college. Students transferring to San Diego State College 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 will 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:

- Complete at least twelve units of 200-numbered courses in astronomy including Astronomy 200, 210, and 220.
- Complete at least nine units of graduate level or approved upper division courses in astronomy or related fields as approved by his departmental committee.
- 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.
- Complete 6 units of electives selected with approval of the adviser.
- A reading knowledge of scientific French, German, or Russian is highly recommended.

TEACHING ASSISTANTSHIPS

Graduate teaching assistantships in astronomy are available to one or two qualified students. Application blanks and additional information may be secured from the Chairman of the Department of Astronomy.

FACULTY

Chairman, Division of the Physical Sciences: D. H. Robinson, Ph.D.

Chairman, Department of Astronomy: C. E. Smith, Ph.D.

Graduate Adviser: C. E. Smith, Ph.D.

Professors: C. M. Huffer, Ph.D.; C. E. Smith, Ph.D.

Associate Professors: Burt Nelson, Ph.D.; J. D. Schopp, Ph.D.

Assistant Professor: C. J. Silvernail, M.A.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN ASTRONOMY

Astronomy

- Introduction to Variable Stars and Peculiar Stars (3)
- Celestial Mechanics (3)
- 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 (3-3)
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)
131. Astronautics (2)
148. Nuclear Physics Laboratory (3)
151. Nuclear Physics (3)
156. Digital Computers (3)
163. Electronics Laboratory (2)
170. Electromagnetic Theory (3)
- 173A-173B. Physical Electronics (3-3)
175. Advanced Mechanics (2)
180. Solid State Physics (3)
190. Introductory Quantum Mechanics (3)
196. Advanced Physics (2 or 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 Structure (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.

280. Orbit Theory and Computation (3)

Prerequisite: Astronomy 180.

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

297. Research (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.

298. Special Study (1-6)

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.

Guidance in the preparation of a project or thesis for the master's degree.

BIOLOGY

GENERAL INFORMATION

The Departments of Biology, Botany, Microbiology, and Zoology, in the Division of the Life Sciences, offer graduate study leading to the Master of Arts degree in biology, and the Master of Science degree in biology. 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 may be completed in any one of the following program areas:

Biology: Ecology; Genetics and Development Biology; Physiology and Radiation Biology

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 San Diego Zoo Hospital, the United States Department of Agriculture, Fish and Game Commission, and the Alvarado Filtration Plant of the City of San Diego. The College is establishing a biological research center on a 2,530 acre area in 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 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:

- Have or complete the requirements of the undergraduate major in the department of the biological sciences at San Diego State College in which graduate study is contemplated.
- Satisfactorily complete a qualifying examination in the biological sciences. Details may be obtained from the Division of the Life Sciences.
- As soon as a general area has been decided upon, the appropriate graduate adviser for the appropriate program area should be consulted regarding the program of study.

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 the biological sciences from courses listed below as acceptable on master's degree programs, of which at least 12 units must be in 200-numbered courses, including the thesis. The remaining units, at least six, must be in cognate fields, or in the biological sciences. 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, the student must satisfy the general requirements for the master's degree, described in Part Three of this bulletin. The student must also meet the following departmental requirements:

- A minimum of 12 units of graduate level (200-numbered) courses in the following fields: biology, botany, microbiology, or zoology.

- (b) A minimum of 12 additional units of upper division or graduate courses selected from biology, botany, microbiology, or zoology. Remaining units at least six, may be taken in these or closely related fields or in acceptable courses in the School of Education.
- (c) Plan A will be required. The student must satisfactorily defend his thesis and be prepared to discuss orally questions covering a survey of the general field of biology.

TEACHING ASSISTANTSHIPS

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

FACULTY

Chairman, Division of the Life Sciences: J. E. Crouch, Ph.D.
 Chairman, Department of Biology: F. J. Ratty, Ph.D.
 Chairman, Department of Botany: D. A. Preston, Ph.D.
 Chairman, Department of Microbiology: H. B. Moore, Ph.D.
 Chairman, Department of Zoology: K. K. Bohnsack, Ph.D.
 Graduate Coordinator, Genetics: K. M. Taylor, Ph.D.
 Coordinator, Master's Degree Programs: Mabel A. Myers, Ph.D.
 Graduate Departmental Advisers for general counselling:
 Biology: Ecology, G. W. Cox; Genetics and Development
 Biology, G. C. Goeringer; Physiology and Radiation
 Biology, J. A. Parsons
 Botany: D. A. Preston
 Microbiology: W. L. Baxter
 Zoology: Invertebrate Zoology, W. J. Wilson
 Vertebrate Zoology, R. E. Etheridge
 Credential Adviser: J. A. Brookes
 Professors: K. K. Bohnsack, Ph.D.; C. L. Brandt, Ph.D.; R. W. Crawford, Ph.D.; J. E. Crouch, Ph.D.; A. H. Gallup, Ph.D.; R. D. Harwood, Ph.D.; E. W. Huffman, Ph.D.; D. L. Jameson, Ph.D.; B. J. Kaston, Ph.D.; Mabel A. Myers, Ph.D.; A. C. Olson, Ph.D.; F. J. Ratty, Ph.D.; D. C. Shepard, Ph.D.; K. M. Taylor, Ph.D.; H. A. Walch, Ph.D.
 Associate Professors: Adelia S. Baer, Ph.D.; R. E. Etheridge, Ph.D.; D. A. Farris, Ph.D.; W. E. Hazen, Ph.D.; D. Hunsaker, Ph.D.; Wm. McBlair, Ph.D.; H. B. Moore, Ph.D.; C. E. Norland, M.S.; D. A. Preston, Ph.D.; W. C. Sloan, Ph.D.; H. L. Wedburg, Ph.D.
 Assistant Professors: F. T. Awbrey, Ph.D.; W. L. Baxter, Ph.D.; J. Brookes, Ph.D.; R. E. Carpenter, Ph.D.; R. H. Catlett, Ph.D.; T. J. Cohn, Ph.D.; G. Collier, M.A.; G. W. Cox, Ph.D.; R. F. Ford, Ph.D.; G. C. Goeringer, Ph.D.; A. W. Johnson, Ph.D.; N. McLean, Jr., Ph.D.; P. C. Miller, Ph.D.; J. W. Neel, Ph.D.; J. A. Parsons, Ph.D.; H. H. Plymale, D.V.M.; R. R. Rinehart, Ph.D.; M. A. Taylor, M.S.; W. M. Thwaites, Ph.D.; W. J. Wilson, Ph.D.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS

UPPER DIVISION COURSES

- | | |
|--|--|
| <i>Biology</i> | |
| 101. General Physiology (4) | 151. Radioisotope Techniques in Biology (3) |
| 103. General Cytology (4) | 155. Genetics (4) |
| 105. Developmental Biology (4) | 157. Cytogenetics (4) |
| 110. Ecology (4) | 158. Conservation of Wildlife (3) |
| 111. Aquatic Biology (4) | 160. Experimental Evolution (3) |
| 112. Fisheries Biology (3) | 161. History of Biology (3) |
| 113. Biological Oceanography (4) | 162. Source Material in the History of Biology (3) |
| 150A-150B. Radiation Biology (2-2) | 169. Population Genetics (3) |
| 150C. Radiation Biology Laboratory (1) | 175. Statistical Methods in Biology (3) |

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS—Continued

UPPER DIVISION COURSES—Continued

Botany

102. Mycology (4)
 112. Cultivated Trees and Shrubs (3)
 114. Systematic Botany (4)
 126. Plant Pathology (4)
 130. Plant Physiology (4)
 140. Plant Anatomy (4)
 162. Agricultural Botany (2)
 172. Palynology (3)

Microbiology

101. General Microbiology (Bacteriology) (4)
 102. Advanced Bacteriology (4)
 103. Fundamentals of Immunology and Serology (4)
 104. Medical Mycology (4)
 105. Bacterial Physiology (2)
 106. Bacterial Physiology Laboratory (2)
 107. Virology (2)
 108. Virology Laboratory (2)
 109. Hematology (3)

Zoology

100. Vertebrate Embryology (4)
 102. Invertebrate Embryology (3)
 106. Comparative Anatomy of the Vertebrates (4)
 108. Histology (4)
 112. Marine Invertebrates (4)
 114. Natural History of the Vertebrates (4)
 115. Ichthyology (4)
 116. Herpetology (4)
 117. Ornithology (4)
 121. General Entomology (4)
 122. Advanced Entomology (3)
 123. Immature Insects (3)
 125. Economic Entomology (4)
 126. Medical Entomology (3)
 128. Parasitology (4)
 130. Protozoology (4)
 140. Physiological Zoology (4)
 142. Comparative Animal Physiology (4)
 164. Human Genetics (4)

GRADUATE COURSES

Biology

200. Seminar (2 or 3)
 Prerequisite: Consent of instructor.
 An intensive study in advanced biology, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.
210. Seminar in Cellular Biology (2)
 Prerequisite: Biology 101 or 103.
 May be repeated with new content to a maximum of four units.
220. Seminar in Growth and Development (2)
 Prerequisite: Zoology 100.
 May be repeated with new content to a maximum of four units.
221. Analysis of Development (3)
 Prerequisite: Biology 105 or Zoology 100; Biology 101.
 A detailed consideration of modern analytical trends in developmental biology.
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 (2)
 (Same course as Psychology 231)
 Prerequisite: Biology 110 or Psychology 114.
 A seminar in the types of species, specific behavior patterns, and their function in the living systems of animals. May be repeated with new content to a maximum of four units.
240. Seminar in Ecology (2)
 Prerequisite: Biology 110 or 112.
 May be repeated with new content to a maximum of four units.
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 to a maximum of four units.

261. Seminar in Environmental Radiation (2)

Prerequisites: Biology 150A 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.

270. Seminar in Genetics (2)

Prerequisite: Biology 155.

May be repeated with new content to a maximum of four units.

271. 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.

276. Physiological Genetics (3)

Prerequisites: Biology 155 or Zoology 164; Chemistry 12.

Recommended: Chemistry 115A-115B.

Biochemical aspects of genetics of microbial and human systems.

277. Microbial Genetics Laboratory (3)

Nine hours of laboratory.

Prerequisites: Microbiology 1 or 101; Biology 276; Chemistry 115B or 116B.

The design, methods, and execution of research in microbial genetics.

290. Bibliography (2)

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

291. Investigation and Report (3)

Analysis and research techniques in biology.

298. Special Study (1-6)

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.

Guidance in the preparation of a project or thesis for the master's degree.

Botany

200. Seminar (2 or 3)

Prerequisite: Consent of instructor.

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

298. Special Study (1-6)

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.

Guidance in the preparation of a project or thesis for the master's degree.

Microbiology

200. Seminar (2 or 3)

Prerequisite: Consent of instructor.

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

210. Seminar in Medical Bacteriology (2)

Prerequisite: Microbiology 102 or consent of instructor.

May be repeated with new content to a maximum of four units.

220. Seminar in Industrial and Agricultural Microbiology (2)

Prerequisite: Microbiology 101 or consent of instructor.

May be repeated with new content to a maximum of four units.

230. Seminar in Medical Mycology (2)

Prerequisite: Microbiology 104 or consent of instructor.

May be repeated with new content to a maximum of four units.

240. Seminar in General Microbiology (2)

Prerequisites: Microbiology 101 and 105, or consent of instructor.

May be repeated with new content to a maximum of four units.

250. Seminar in Virology (2)

Prerequisite: Microbiology 107 or consent of instructor.

May be repeated with new content to a maximum of four units.

260. Seminar in Immunology and Serology (2)

Prerequisite: Microbiology 103 or consent of instructor.

May be repeated with new content to a maximum of four units.

298. Special Study (1-6)

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.

Guidance in the 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.

298. Special Study (1-6)

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.

Guidance in the 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 also offers graduate study leading to a Master of Arts degree in business education. Please refer to the section of this Bulletin on Business Education, which follows this section, for detailed information.

The Master of Business Administration degree is designed to provide a broad education in business for the student with a non-business undergraduate degree. The Master of Science degree with a major in business administration is designed to provide for additional education and specialization in business subjects for the student who has an undergraduate degree in one of the business subject fields. The Master of Science degree 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 Coordinator of Graduate Programs in the School of Business Administration prior to applying for admission.

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

BUREAU OF BUSINESS AND ECONOMIC RESEARCH

The Bureau of Business and Economic Research is an organized research activity serving the needs of the School of Business Administration and the Department of Economics. Operationally, it is a part of the School of Business Administration, with a director and a policy committee. The principal objectives of the Bureau are to (1) conduct research in the areas of economics and business, with special reference to local and regional problems; (2) facilitate research in these areas by the faculty and students; (3) seek cooperative arrangements with outside individuals and organizations for conducting specific research projects; (4) compile local and regional data; (5) publish the results of Bureau research investigations and aid the faculty in publication of research. Graduate students are encouraged to make use of Bureau facilities.

ADMISSION TO GRADUATE CURRICULUMS

A student seeking admission to either of the master's degree curriculums offered in the School of Business Administration must (1) be admitted to the College with unclassified graduate standing and (2) be admitted to the Graduate Division with classified graduate standing.

ADMISSION TO THE COLLEGE

Students should request application materials for admission to the College directly from the Office of Admissions. They are required to file applications and duplicate copies of transcripts of all college work. See Part III of this Bulletin under Admission of Graduate Students to the College for information on admission procedures.

ADMISSION TO THE GRADUATE DIVISION AND THE SCHOOL OF BUSINESS ADMINISTRATION

Admission to the Graduate Division with classified graduate standing for the purpose of working toward either the Master of Business Administration degree or the Master of Science degree in business administration constitutes admission to the School of Business Administration. Students should request application materials from the Graduate Office. For additional information, see Part III 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 for credit toward either master's degree. In order to obtain classified standing for the purpose of working toward a master's degree in the School of Business Administration, a student must have an undergraduate grade point average of not less than 3.0 (B) on all college work attempted up to the time he applies for admission.

Students may also be recommended for classified graduate standing in the Graduate Division if their capacity for graduate study is demonstrated by satisfactory scores upon the following two mandatory examinations: (1) Graduate Record Examination Aptitude Test, (2) Admission Test for Graduate Studies in Business. (Students should arrange to take these tests prior to enrolling in the College. Details concerning these tests, fees, and examination dates may be obtained from the Test Officer, San Diego State College, or by writing to the Educational Testing Service, 20 Nassau Street, Princeton, New Jersey. These tests are administered four times a year, in November, February, April, and July.)

Course Prerequisites for Admission to Master's Degree Curricula

For admission to the curriculum for the Master of Business Administration degree there are no specific prerequisite courses. For admission to the curriculum for the Master of Science degree in business administration, the following courses or their equivalents must be completed before classified graduate standing can be given:

- Business Administration 1A-1B, Principles of Accounting (4 units)
- Economics 1A-1B, Principles of Economics (6 units)
- Economics 2, Statistical Methods (3 units)
- Business Administration 30A, and Business Administration 30B, Business Law or Business Administration 131, Legal Factors in Business (6 units)
- Business Administration 132, Fundamentals of Management (3 units)
- Business Administration 150, Marketing Principles (3 units)
- Business Administration 127, Fundamentals of Finance, or Economics 135, 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 School of Business Administration.

ADVANCEMENT TO CANDIDACY

The Master of Business Administration Degree

To be eligible for advancement to candidacy for this degree, the student must, in addition to holding classified graduate standing, have filed an official program indicating the area of concentration, and he must have completed at least 24 units listed on that 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, including the attainment of a satisfactory score on the Graduate Record Examination Aptitude Test. 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.

The Master of Science Degree in Business Administration

To be eligible for advancement to candidacy for this degree, the student must, in addition to holding classified graduate standing, have filed an official program

of studies for the degree, and he must have completed 12 units listed on that program with a grade point average of 3.0 or higher. In addition, the School of Business Administration must recommend to the Graduate Division that the student be advanced to candidacy to assure that all deficiencies have been removed and all requirements of that School have been met.

SPECIFIC REQUIREMENTS FOR MASTER'S DEGREES

The Master of Business Administration Degree

In addition to meeting the requirements for classified graduate standing in the Graduate Division for the purpose of pursuing the Master of Business Administration degree, the student must complete an approved program of studies 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 approved 200-level course in its place.

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)
 - Econ. 201. Economic Analysis (3)
 - B.A. 206. Managerial Economics (3)
 - B.A. 207. Research and Reporting (3)
2. Complete B.A. 299, Thesis (3), in accordance with regulations of the Graduate Council regarding thesis writing and production as stated in Part III of this Bulletin.
3. Complete one of the concentrations listed below.
 - a. Accounting: B.A. 210, Theory and Analysis of Financial Statements (3); B.A. 211, Advanced Accounting Problems (3); B.A. 212, Income Tax Accounting (3); B.A. 213, Auditing (3); B.A. 219, Seminar in Accounting Theory (3); and 3 units of approved electives in an area other than accounting.
 - b. Employee Relations: B.A. 240, 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); B.A. 249, Seminar in Employee Relations (3); and 3 units of electives in an area other than employee relations.
 - c. Finance: B.A. 229, Seminar in Financial Markets (3); B.A. 223, Seminar in Business Finance (3); and nine units of electives.
 - d. Management: B.A. 284, Policy Formation (3); two courses selected from B.A. 281, Behavioral Science for Management (3), B.A. 282, Group Processes and Leadership (3), B.A. 283, Origin and Nature of American Business Enterprise (3), and B.A. 289, Seminar in Organization and Management (3); and 3 units of electives in an area other than management.
 - e. Marketing: B.A. 259, Marketing Analysis and Research (3); B.A. 251, Seminar in Marketing Theory (3); B.A. 252, Marketing Institutions (3); B.A. 253, Seminar in Marketing Price Policy (3); and 3 units of approved electives in an area other than marketing.
 - f. Office Administration: B.A. 273, Data Systems and Automation (3); B.A. 278, Seminar in Office Administration (3); B.A. 279, Seminar in Data Systems Design (3); and six units of electives, of which 3 must be outside of the business education area and 3 must be in fields other than business administration and economics.
 - g. Production Management: B.A. 230, Production and Operations Management (3); B.A. 231, Advanced Methods Engineering and Work Measurement (3); B.A. 232, Operations Research (3); B.A. 239A or 239B, Seminar in Production and Operations Management (3); and three units of electives in an area other than production management.

In addition to meeting pattern requirements for the Master of Business Administration degree described above, the student must meet the general requirements and regulations of the Graduate Council published elsewhere in this Bulletin, including the following:

1. The student must complete at least 24 units of course work on his program after he has been advanced to candidacy.
2. At least thirty of the required 54 units must be completed at San Diego State College. All courses accepted for transfer must be strictly graduate courses and equivalent to those required as a part of the degree.
3. All course work included as a part of the requirement for the degree must be completed within seven years of the date when all requirements for the degree are completed, except that the College, at its option, may extend the time for students who pass a comprehensive examination in the relevant course or subject field.
4. Grade Point Averages:
 - Grade point averages of at least 3.0 (B) must be maintained on:
 - a. All programmed courses required for the removal of undergraduate deficiencies.
 - b. All programmed courses including courses accepted for transfer credit and courses taken concurrently with or subsequently to courses accepted for transfer.
 - c. All 100- or 200-numbered courses taken at San Diego State College concurrently with or subsequently to the earliest course listed on the official master's degree program.
5. Final approval:
 - The student's official program of study as approved by the School of Business Administration 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 in Part I of this Bulletin for deadline dates.
6. Award of Degrees:
 - The Board of Trustees of the California State Colleges, upon recommendation of the faculty of San Diego State College, awards the appropriate diploma or degree to a student who has completed the prescribed course of study.
7. Diploma:
 - The appropriate diploma is ordered by the student from the College Book Store.

The Master of Science Degree in Business Administration

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 III of this Bulletin, the student must complete a graduate program of 30 approved units including at least twenty-one units in 200-numbered courses. Business Administration 299, Thesis, is required. 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.

The following concentrations are available:

- | | |
|---|-----------------------|
| 1. Accounting | 5. Insurance |
| 2. Management | 6. Marketing |
| 3. Finance | 7. Employee Relations |
| 4. Production and Operations Management | 8. Real Estate |

TEACHING ASSISTANTSHIPS

Graduate 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: C. W. Lamden, Ph.D., C.P.A. (On leave)
 Acting Dean: M. L. Crawford, Ed.D.
 Chairman, Department of Accounting: L. W. Snudden, D.B.A., C.P.A.
 Chairman, Department of Business Law and Finance: Simon Reznikoff, LL.B.
 Chairman, Department of Management: A. C. Pierson, Ph.D.
 Chairman, Department of Marketing: W. F. Barber, D.B.A.
 Coordinator of Graduate Programs: G. L. Hodge, Ph.D.
 Graduate Advisers:
 Accounting: C. W. Lamden, V. E. Odmark
 Business Management: D. W. Belcher, D. R. Hampton, L. H. Peters
 Finance: D. C. Bridenstine
 Production Management: Oliver Galbraith, A. L. Srbich
 Insurance: W. A. Nye
 Marketing: R. D. Darley, W. F. Barber, E. A. Hale
 Employee Relations: D. W. Belcher, D. R. Hampton
 Office Management: M. L. Crawford, L. A. Pemberton
 Real Estate: W. H. Hippaka
 Professors: D. W. Belcher, Ph.D.; D. C. Bridenstine, Ph.D.; Arthur Brodshatzer, D.B.A., C.P.A.; D. B. Ferrel, M.B.A., C.P.A.; E. A. Hale, Ph.D.; G. L. Hodge, Ph.D.; C. W. Lamden, Ph.D., C.P.A.; V. E. Odmark, Ph.D., P.A.; G. K. Sharkey, Ph.D.; Frances B. Torbert, M.A.
 Associate Professors: W. F. Barber, Ph.D.; R. D. Darley, Ph.D.; L. J. Dodds, M.B.A., C.P.A.; W. W. Harned, Ph.D.; W. H. Hippaka, Jur. D.; Sylvia Lane, Ph.D.; W. A. Nye, Ph.D.; L. H. Peters, Ph.D.; A. C. Pierson, Ph.D.; Simon Reznikoff, LL.B.; L. W. Snudden, D.B.A., C.P.A.; A. L. Srbich, Ph.D.
 Assistant Professors: T. J. Atchison, M.B.A.; Oliver Galbraith, M.B.A.; J. L. Chapman, J.D.; J. V. Ghorpade, M.B.A.; V. V. Gilbert, M.B.A.; D. R. Hampton, Ph.D.; D. G. Leaverton, LL.B.; D. A. Lindgren, M.B.A.; K. S. Wade, M.S.; T. R. Wotruba, Ph.D.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN BUSINESS ADMINISTRATION

UPPER DIVISION COURSES

- | | |
|--|---|
| 100. Intermediate Accounting (4) | 141. Employee Relations Laboratory (1) |
| 101. Advanced Accounting (3) | 142. Wage and Salary Administration (3) |
| 102. Cost Accounting (4) | 143. Problems in Employee Relations (3) |
| 106. Income Tax Accounting (4) | 151. Problems of Marketing Management (3) |
| 107. Advanced Income Tax Accounting (2) | 152. Retailing Principles (3) |
| 108. Governmental Accounting (2) | 153. Advertising Principles (3) |
| 112. Auditing (4) | 154. Advertising Problems (3) |
| 114. Accounting Systems (2) | 157. Market Research (3) |
| 115. Financial Statements (2) | 158. Market Research Laboratory (1) |
| 116. Controllershship (2) | 161. Traffic Management (3) |
| 118. Advanced Business Law (3) | 162. Industrial Marketing and Wholesaling (3) |
| 119. C.P.A. Review (3) | 163. Sales Management (3) |
| 120. General Insurance (3) | 164. Purchasing and Buying (3) |
| 121. Property and Casualty Insurance (3) | 165. Foreign Marketing (3) |
| 124. Life Insurance Principles and Practices (3) | 170. Real Estate Principles and Practices (3) |
| 125. Estate Planning (3) | 171. Law of Real Property (3) |
| 128. Investments (3) | 172. Property Management (3) |
| 130. Financial Analysis and Management (3) | 173. Real Estate Finance (3) |
| 131. Law in a Business Society (3) | 174. Real Estate Appraisal Theory (3) |
| 136. Production and Quality Control (3) | 197. Business Forecasting (3) |
| 137. Motion and Time Study (3) | 199. Special Study (1-6) |
| 138. Systems and Data Analysis (3) | |

GRADUATE COURSES

200. **Financial Accounting** (3)
 Prerequisite: Classified graduate standing or consent of instructor.
 Basic concepts and principles of financial accountings; accounting as a data processing system; measurement of business income; financial statements.
- 201A-201B. **Business Organization and Management** (3-3)
 Prerequisite: Classified graduate standing.
 Functions, role, and relationships of business organizations; theories of management; decisions, dilemmas, and human values in industrial societies.
- 202A-202B. **Quantitative Methods** (3-3)
 Prerequisite: Classified graduate standing.
 In 202A: Measures of central tendency and variation, sampling and various statistical tests such as analysis of variance, F, t, and χ^2 tests. Simple and multiple correlation. In 202B: The design of statistical experiments and various operations research techniques such as simulation, linear programming, queuing theory, and Markov chain analysis.
203. **Marketing** (3)
 Prerequisite: Classified graduate standing.
 The marketing activities of a firm in relation to management and society. Application of economic theory to marketing institutions and functions. Not open to students with credit for Business Administration 150 or its equivalent.
204. **Law for Business Executives** (3)
 Prerequisite: Classified graduate standing.
 Development significance, and interrelationships of law and business. Analysis of essential aspects of law pertaining to business including materials from the law of contracts, sales, agency, business organizations, property, negotiable instruments, secured transactions. Effects of government regulation of labor and business.
205. **Financial Principles and Policies** (3)
 Prerequisite: Business Administration 200.
 Finance and financial institutions as they relate to the firm and the flow of funds. Emphasis upon the supply of and demand for capital; principles and tools of business finance; money and capital markets.
206. **Managerial Economics** (3)
 Prerequisite: Economics 100A or 201. (Students who have not completed this prerequisite must include Economics 201 as a substitute for three units of electives during their first year.)
 Role of economic theory in management analysis and decisions. Study of demand, cost, and supply theories from a business viewpoint.
207. **Research and Reporting** (3)
 Prerequisite: Business Administration 202A.
 Principles of research design and data accumulation. Emphasis on the analysis and effective presentation of data related to business and industry.
208. **Managerial Accounting** (3)
 Prerequisite: Business Administration 200.
 Accounting in relation to the decision making process; various cost systems; relevancy of various cost concepts; direct costing, flexible budgets, distribution costing; break-even analysis; capital budgeting; and other techniques of management planning and control.
210. **Theory and Analysis of Financial Statements** (3)
 Prerequisite: Business Administration 200.
 An intensive study of the theories, principles, and concepts underlying financial statements; measurement and presentation of enterprise resources, equities, and income in accordance with generally accepted accounting principles; consideration of price level problems.

- 211. Advanced Accounting (3)**
Prerequisite: Business Administration 210.
Principles and concepts as related to the measurement, determination, and presentation of resources, equities, and income of parent and affiliated companies; concepts of fund accounting; specialized reporting for partnership formation, income distribution, and liquidation; statement of affairs; estates and trusts.
- 212. Income Tax Accounting (3)**
Prerequisite: Business Administration 210.
Provisions of the federal tax law, including preparation of returns for individuals, partnerships, corporations, estates, trusts; procedures for reporting deficiency assessments, refunds, and other administrative practices.
- 213. Auditing (3)**
Prerequisite: Business Administration 211.
Critical analysis of the application of auditing principles in verification of financial statements; review of AICPA and SEC bulletins and regulations; consideration of professional ethics, audit standards, procedures, sampling techniques, and report writing; trends and developments in auditing profession.
- 219. Seminar in Accounting Theory (3)**
Prerequisite: Business Administration 211.
Historical development of accounting principles and theory; problems in valuation, income determination, and statement presentation. (Formerly Business Administration 200, Seminar in Accounting Theory.)
- 220. Legal Aspects of Labor-Management Relations (3)**
Prerequisite: Classified graduate standing.
Legal aspects of union organizational activities, representation proceedings, unfair labor practices, collective bargaining and contracts, grievances and arbitration, strikes, picketing, boycotts and injunctions.
- 221. Insurance Principles and Practices (3)**
Prerequisite: Classified graduate standing.
Nature and extent of personal, business, and social risk. Risk handling techniques; insurance principles and practices; basic contracts analysis; insurance underwriting and rating; insurance problems and trends; personal and business risk management.
- 222. Principles of Real Estate (3)**
Prerequisite: Classified graduate standing.
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.
- 223. Seminar in Business Finance (3)**
Prerequisite: Business Administration 205.
Application of principles of finance to current problems in financial management, with emphasis on planning and development of tools for use in decision making. Consideration of case materials, study of the literature, and development of individual student reports.
- 225. Seminar in Insurance (3)**
Prerequisite: Business Administration 221.
Risk management in effective business operations. Programing of personal and business risk problems. Insurance institutions.
- 226. Seminar in Real Estate (3)**
Prerequisite: Business Administration 222.
Current problems in real property. Regional land use planning.
- 229. Seminar in Financial Markets (3)**
Prerequisite: Business Administration 205.
Analysis of money and capital markets. Emphasis on factors of influence and sources and uses of data. Survey of literature in the field.
- 230. Production and Operations Management (3)**
Two lectures and two hours of laboratory.
Prerequisites: Business Administration 202A and 202B.
Theory, concepts and decision analysis related to effective utilization of major factors of production in manufacturing and service industries. Utilizes the system approach to achieve unification of the production elements in terms of both analysis and synthesis. Not open to students who have credit for a basic course in production management.
- 231. Advanced Methods Engineering and Work Measurement (3)**
Prerequisite: Business Administration 230 or equivalent.
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.
- 232. Operations Research (3)**
Prerequisite: Business Administration 230 or equivalent.
Programing and simulation techniques for analysis of interlocking decision problems with and without the use of computers. Derivation of man, machine, and systems models. Design of steady state and dynamic stochastic models.
- 239A. Seminar in Production and Operations Management (3)**
Prerequisite: Business Administration 231.
Industrial risk and forecasting; diagnosis of industrial problems; production policies and organization; determination of production methods; coordination of production activities.
- 239B. Seminar in Production Management (3)**
Prerequisite: Business Administration 232.
Analysis by quantitative techniques for managerial planning and decision making. Applications of operations research and other concepts to industrial situations.
- 240. Employee Relations (3)**
Prerequisites: Business Administration 201A and 201B or equivalent. (Concurrent enrollment permissible.)
Analysis of theories and factors underlying managerial policies and practices involving employees.
- 241. Business and Labor (3)**
Prerequisite: Business Administration 240 or equivalent.
Analysis of the role of unions in the modern business community with special attention to the impact of union policies on management.
- 242. Wage Theory and Administration (3)**
Prerequisite: Business Administration 240 or equivalent.
Study of wage theory, factors, and criteria important in determination of wage rates. Wage structure, payment methods, and other compensation relating to the business firm.
- 243. Management Development (3)**
Prerequisite: Business Administration 240 or equivalent.
Management development programs; organization, administration, development, and evaluation.
- 249. Seminar in Employee Relations (3)**
Prerequisite: Business Administration 240 or equivalent.
Analysis of factors underlying managerial policies and programs in employee relations.
- 250. Seminar in Marketing and the Economy (3)**
Prerequisites: Business Administration 203 or 150.
Advertising, selling, sales promotion, and merchandising as they relate to society, business and the economy.

251. Seminar in Marketing Theory (3)

Prerequisites: Business Administration 203 or 150.

Study of marketing theory and contributions of economics and behavioral sciences to marketing thought.

252. Marketing Institutions (3)

Prerequisites: Business Administration 203 or 150.

Analysis of development of wholesaling and retailing and of growth, change, and efficiency of these institutions in the American and other economies.

253. Seminar in Marketing Price Policy (3)

Prerequisites: Business Administration 203 or 150.

Study of pricing strategy and price determination in business organizations.

259. Market Analysis and Research (3)

Prerequisite: Business Administration 203 or 150, and 202B.

Application of statistical and mathematical methods to market problems, consumer research, and product analysis.

270. Seminar in Business Education (3)

An intensive study of some phase of business education, such as administration and supervision; distributive and basic business education; trends in and methods of teaching shorthand and typewriting. May be repeated with new subject matter. Maximum of six units may be applied for the master's degree program.

273. Data Systems and Automation (3)

Prerequisite: Business Administration 202A or consent of instructor.

Principles and techniques used in formulating, installing, and operating integrated and electronic data processing systems, including computer applications to typical automated data processing problems.

278. Seminar in Office Administration (3)

Prerequisites: Business Administration 185 and 186, or Business Administration 273.

Advanced study of contemporary problems in office administration. Emphasis on current trends and developments and on individual student research.

279. Seminar in Data Systems Design (3)

Prerequisites: Business Administration 185 and 186, or Business Administration 273.

Research in the analysis and design of data processing systems.

281. Behavioral Sciences for Management (3)

Prerequisites: Business Administration 201A and 201B or equivalent.

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)

Prerequisites: Business Administration 201A and 201B or equivalent.

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)

Prerequisites: Business Administration 201A and 201B or equivalent.

Factors underlying the American system of business enterprise: modern corporations, the corporation man, technological change, the business community and politics, and other significant issues.

284. Policy Formulation (3)

Prerequisites: Business Administration 201A and 201B or equivalent.

Building and maintaining enterprises in our society; determining objectives; developing policies and plans for achievement; measuring and controlling organiza-

tional activities; reappraising objectives and policies on the basis of new developments.

289. Seminar in Organization and Management (3)

Prerequisites: Business Administration 201A and 201B or equivalent.

Analysis of problems in business and other organizations. Organization and decision theory and contemporary developments in management science are 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.

298. Special Study (1-6)

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.

Guidance in the preparation of a project or thesis for the master's degree.

BUSINESS EDUCATION

GENERAL INFORMATION

The Department of Business Education, in the School of Business Administration, offers graduate study leading to the Master of Arts degree for teaching service with a concentration in business education. It is designed for students in teaching service and is expressly fitted to the needs and interests of each student with special consideration being given to his past college work, his California teaching credentials, and his work experience in teaching and/or industry. San Diego State College is particularly well equipped with the most modern office machines and devices, enabling the graduate student to work in excellent business education laboratory surroundings.

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 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 defined as follows: A minimum of 18 units in business administration selected from courses listed below as acceptable on master's degree programs in business education of which at least 12 units must be in 200-numbered courses. With the consent of the graduate adviser in Business Education certain courses in economics can be used to satisfy this 18 unit requirement. Business Administration 207 is recommended. The student may choose to write a thesis (Plan A) or a project report, or may elect to take a comprehensive departmental examination in lieu of thesis (Plan B) composed of the following parts:

(a) A general section designed to test the student on core information in the business teaching field.

(b) Two special sections designed to test the student on the two business education subfields set forth on his California teaching credential.

TEACHING ASSISTANTSHIPS

Graduate teaching assistantships in Business Education are available to a limited number of qualified students. Application blanks and further information may be obtained from the Dean of the School of Business Administration.

FACULTY

Dean, School of Business Administration: C. W. Lamden, Ph.D. (On Leave)

Acting Dean: M. L. Crawford, Ed.D.

Chairman, Department of Business Education: L. A. Pemberton, Ed.D.

Graduate Advisers: E. C. Archer, M. L. Crawford, E. D. Gibson, L. A. Pemberton

Credential Advisers: M. L. Crawford, Evangeline O. LeBarron

Professors: E. C. Archer, Ed.D.; M. L. Crawford, Ed.D.; E. D. Gibson, Ed.D.; Lura Lynn Straub, M.C.S.

Associate Professors: R. G. Langenbach, Ed.D.; L. A. Pemberton, Ed.D.; Evangeline O. LeBarron, B.A., B.S.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN BUSINESS EDUCATION

UPPER DIVISION COURSES IN BUSINESS ADMINISTRATION

- | | |
|--|---|
| 101. Advanced Accounting (3) | 143. Problems in Employee Relations (3) |
| 106. Income Tax Accounting (4) | 151. Problems of Marketing Management (3) |
| 107. Advanced Income Tax Accounting (2) | 152. Retailing Principles (3) |
| 108. Governmental Accounting (2) | 153. Advertising Principles (3) |
| 112. Auditing (4) | 154. Advertising Problems (3) |
| 114. Accounting Systems (2) | 157. Market Research (3) |
| 115. Financial Statements (2) | 161. Traffic Management (3) |
| 116. Controllorship (2) | 162. Industrial Marketing and Wholesaling (3) |
| 119. C.P.A. Review (3) | 163. Sales Management (3) |
| 120. General Insurance (3) | 165. Foreign Marketing (3) |
| 121. Property and Casualty Insurance (3) | 170. Real Estate Principles and Practices (3) |
| 124. Life Insurance Principles and Practices (3) | 171. Law of Real Property (3) |
| 125. Estate Planning (3) | 172. Property Management (3) |
| 128. Investments (3) | 173. Real Estate Finance (3) |
| 130. Financial Analysis and Management (3) | 174. Real Estate Appraisal Theory (3) |
| 131. Law in a Business Society (3) | 181. Administration and Supervision of Distributive Education (3) |
| 136. Production and Quality Control (3) | 184. Office Management (3) |
| 137. Motion and Time Study (3) | 185. Office Systems and Automation (3) |
| 138. Systems and Data Analysis (3) | 186. Data Processing Practicum (3) |
| 141. Employee Relations Laboratory (1) | 189. Scope and Function of Business Education (3) |
| 142. Wage and Salary Administration (3) | 197. Business Forecasting (3) |
| | 199. Special Study (1-6) |

Courses in the Department of Economics with 100 or above numbers with the exception of Economics 103A-103B may be selected with the approval of the graduate adviser.

GRADUATE COURSES IN BUSINESS ADMINISTRATION

207. Research and Reporting (3)
Prerequisite: Business Administration 202A.
Principles of research design and data accumulation. Emphasis on the analysis and effective presentation of data related to business and industry.
270. Seminar in Business Education (3)
An intensive study of some phase of business education such as administration and supervision, distributive and basic business education; trends in and methods of teaching shorthand and typewriting. May be repeated with new subject matter. Maximum of six units may be applied for the master's degree program.
273. Data Systems and Automation (3)
Prerequisite: Business Administration 202A.
Principles and techniques used in formulating, installing, and operating integrated and electronic data processing systems, including computer applications to typical automated data processing systems.
278. Seminar in Office Administration (3)
Prerequisites: Business Administration 185 and 186, or Business Administration 273.
Advanced study of contemporary problems in office administration. Emphasis on current trends and developments and on individual student research.

279. Seminar in Data Systems Design (3)

Prerequisites: Business Administration 185 and 186, or Business Administration 273.

Research in the analysis and design of data processing systems.

290. Bibliography (1)

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

298. Special Study (1-6)

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.

Guidance in the preparation of a project or thesis for the master's degree.

CHEMISTRY

GENERAL INFORMATION

The Department of Chemistry in the Division of the Physical Sciences, San Diego State College, 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 with a major in chemistry, the Master of Arts degree for teaching service with a concentration 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 new four-million-dollar chemistry building.

SECTION I. 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 a qualifying 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 299 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 12 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 on master's degree programs. At least 12 of these units must be in 200-numbered courses, excluding Chemistry 290, 297, 298, and 299. Chemistry 211 and 291 are required. Subject to departmental approval, the student may elect 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 on his thesis. The student must demonstrate a reading knowledge of scientific German or Russian. This requirement will be considered to have been met by the student who holds the American Chemical Society Certificate.

SECTION II. JOINT DOCTORAL PROGRAM

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

ADMISSION TO THE GRADUATE DIVISIONS

An applicant for admission to the joint doctoral program must first be admitted to regular graduate standing in the Graduate Division of the University of California, San Diego, and to classified graduate standing in the Graduate Division of San Diego State College. In seeking admission to the two Graduate Divisions, the applicant must pay all fees required by each institution and comply with the admission procedures stated in this bulletin and in the current edition of the Announcement of 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 will be required to have a mastery of the subjects usually presented in the undergraduate curriculum: physical, organic, analytical, and inorganic chemistry. All applicants will be expected to present the equivalent of one year of physics and one year of mathematics. Students should be prepared to take orientation examinations which will be administered by a joint committee and will cover the fields of analytical, inorganic, organic and physical chemistry, and mathematics.

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

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

RESIDENCY REQUIREMENTS

After formal admission to the joint doctoral program, the student must spend at least one year in full-time residence on each of the two campuses. The definition of residence must be in accord with the regulations of the University of California, San Diego, and San Diego State College.

FOREIGN LANGUAGE REQUIREMENTS

A reading knowledge of German and of either Russian or French will be required of all candidates for the joint doctoral degree in chemistry. Competence will be determined by examinations conducted at either of the two institutions in a manner approved by the Graduate Councils and designated by the Student's Joint Guidance Committee.

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

JOINT DOCTORAL COMMITTEE

A Joint Doctoral Committee consisting of three faculty members from each of the cooperating institutions will be appointed by the Graduate Councils jointly. Each departmental Chairman will nominate three members of this committee, one of whom must be from a department other than chemistry. The Joint Doctoral Committee will conduct the oral part of the Qualifying Examination and make arrangements for the written part when required. It will report the satisfactory passage of the Qualifying Examination to the Graduate Deans. The Joint Doctoral Committee is completely responsible for the student and may set any requirements 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 payment of the Candidacy Fee to the University of California, San Diego, and after approval by both Graduate Deans, the student will be notified of his advancement to candidacy by the Graduate Dean, University of California.

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

DSSERTATION

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

also 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 such other provisions as may be decided by the Graduate Council of San Diego State College.

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 University of California, San Diego, and San Diego State College.

PROCEDURES

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

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

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

All student petitions must be addressed to the two Graduate Deans, jointly.

Courses taken by students who have been formally admitted to the joint doctoral program at either institution, and the grades obtained, will be reported to the Registrar of the other institution.

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: Joseph Mayer; Alternate: T. G. Traylor

Staff: James R. Arnold, Martin D. Kamen, Joseph E. Mayer, Stanley L. Miller, Charles L. Perrin, Teddy G. Traylor, Harold C. Urey, Bruno H. Zimm.

San Diego State College:

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

Staff: Reilly C. Jensen, Walter D. Jones, Edward O'Neal, William H. Richardson, Morey A. Ring, William R. Ware, Arne N. Wick.

TEACHING ASSISTANTSHIPS

Graduate teaching assistantships in chemistry are available to a limited number of qualified students. Application blanks and additional information may be secured from the Chairman of the Department of Chemistry.

FACULTY

Chairman, Division of the Physical Sciences: D. H. Robinson, Ph.D.

Chairman, Department of Chemistry: Arne N. Wick, Ph.D.

Graduate Adviser: R. W. Isensee

Credential Adviser: L. E. Smith

Professors: R. W. Isensee, Ph.D.; Lionel Joseph, Ph.D.; V. J. Landis, Ph.D.; J. G. Malik, Ph.D.; D. H. Robinson, Ph.D.; R. D. Rowe, Ph.D.; J. A. Spangler, Ph.D.; C. J. Stewart, Ph.D.; Harold Walba, Ph.D.; Arne N. Wick, Ph.D.

Associate Professors: E. J. Grubbs, Ph.D.; N. J. Harrington, Ed.D.; L. H. Hellberg, Ph.D.; Reilly Jensen, Ph.D.; H. E. O'Neal, Ph.D.; E. P. Wadsworth, Jr., Ph.D.; William Ware, Ph.D.; J. H. Woodson, Ph.D.

Assistant Professors: M. T. Abbott, Ph.D.; W. D. Jones, Ph.D.; J. H. Mathewson, Ph.D.; W. H. Richardson, Ph.D.; M. A. Ring, Ph.D.; C. M. Sharts, Ph.D.

COURSES ACCEPTABLE ON ADVANCED DEGREE PROGRAMS IN CHEMISTRY

UPPER DIVISION COURSES

- | | |
|---|---|
| 116A-116B. General Biochemistry (3-3) | 155. Advanced Instrumental Methods (4) |
| 118. Advanced Physical Chemistry (3) | 156. Quantitative Microanalysis (3) |
| 127A-127B-127C. Inorganic Chemistry (3-3-1) | 160A-160B. Principles of Chemical Engineering (3-3) |
| 131. Theoretical Organic Chemistry (3) | 170. Radiochemistry (4) |
| 154. Organic Qualitative Analysis (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.
210. Advanced Topics in Physical Chemistry (Credit to be arranged)
Prerequisite: Consent of instructor.
Selected topics in physical chemistry. Maximum credit six units applicable to a master's degree.
211. Chemical Thermodynamics (3)
Prerequisites: Mathematics 52 and Chemistry 110B.
Chemical thermodynamics and an introduction to statistical thermodynamics.
212. Chemical Kinetics (3)
Prerequisites: Mathematics 52 and Chemistry 110B.
Theory of rate processes; applications of kinetics to the study of reaction mechanisms.
213. Quantum Chemistry (3)
Prerequisites: Mathematics 52 and Chemistry 110B.
Quantum mechanics of atomic and molecular systems; applications to chemical bonding theory.
214. Molecular Structure (3)
Prerequisites: Mathematics 52 and Chemistry 110B.
Theory and techniques used in the determination of molecular structure.
215. Chemical Statistical Mechanics (3)
Prerequisite: Chemistry 211.
Statistical mechanics as applied to chemical systems.
216. Physical Chemistry of Electrolytic Solutions (2)
Prerequisite: Chemistry 211.
Theory of ionic solutions: electrode potentials, activity coefficients, partial molal quantities, conductance and ion association.
220. Advanced Topics in Inorganic Chemistry (Credit to be arranged)
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 (Credit to be arranged)

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 (Credit to be arranged)

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 (Credit to be arranged)

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.

Nuclear reactions, fission systematics, interpretations arising from nuclear models and applications of radioactivity to chemistry.

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 (Credit to be arranged)

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 (1-6)

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.

Guidance in the preparation of a project or thesis for the master's degree.

ECONOMICS

GENERAL INFORMATION

The Department of Economics, in the Division of the Social Sciences, offers graduate study leading to the Master of Arts degree with a major in economics. For graduate study in connection with the Master of Arts degree for teaching service with a concentration 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 with a major in economics must have completed Economics 2, Statistical Methods, and at least 18 units of upper division courses in economics including Economics 100A-100B, Intermediate Economic Theory, 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 2 and Economics 100A-100B may, with the consent of the Department of Economics, offer more than six upper division units in fields other than economics as part of this undergraduate preparation for admission to classified graduate standing.

ADVANCEMENT TO CANDIDACY

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

SPECIFIC REQUIREMENTS FOR THE MASTER OF ARTS DEGREE

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Three of this bulletin, the student must include in his graduate program a minimum of 24 units in economics from courses listed below as acceptable on master's degree programs of which at least 18 units must be in 200-numbered courses including Economics 299, Thesis. The remaining unit requirements may be selected from courses in economics listed below or, by petition to the Departmental Graduate Study Committee, from 100 or 200-numbered courses offered by other departments of the college. A written comprehensive examination over course work taken for the degree is required.

TEACHING 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, Division of the Social Sciences: D. S. Milne, Ph.D.

Chairman, Department of Economics: D. A. Flagg, Ph.D.

Graduate Advisers: George Babilot; G. K. Anderson; R. E. Barckley

Professors: G. K. Anderson, Ph.D.; R. E. Barckley, Ph.D.; D. A. Flagg, Ph.D.;

Adam Gifford, Ph.D.; J. O. McClintic, Ph.D.; Marjorie S. Turner, Ph.D.

Associate Professors: George Babilot, Ph.D.; J. W. Leasure, Ph.D.; E. J. Neuner, Ph.D.

Assistant Professors: L. E. Chadwick, B.S.; C. E. Jencks, Ph.D.; L. G. Smith, M.A.; D. C. Wellington, M.A.; Kozo Yamamura, Ph.D.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN ECONOMICS

UPPER DIVISION COURSES

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| 102. Comparative Economic Systems (3) | 151. Labor Legislation (3) |
| 105. Welfare Economics (3) | 152. Collective Bargaining (3) |
| 107. Quantitative Economics (3) | 172. Public Utilities (3) |
| 111. Economic History of the United States (3) | 173. Economic Resources and Growth (3) |
| 114. Economic Problems of Latin America (3) | 174. Economic Concentration and Monopoly Power (3) |
| 115. Economic Problems of South and East Asia (3) | 175. Industry Studies (3) |
| 118. Economy of the Soviet Union (3) | 190. International Economics—Principles (3) |
| 119. Economic Problems of Africa and the Middle East (3) | 195. International Economics—Problems (3) |
| 131. Public Finance (3) | 196. Economics of Underdeveloped Areas (3) |
| 135. Money and Banking (3) | 197. Research Design and Method (3) |
| 138. Urban Land Economics (3) | 198. Investigation and Report (3) |
| 142. Business Cycles (3) | 199. Special Study (1-6) |
| 150. Labor Problems (3) | |

GRADUATE COURSES

- 200A-200B. Seminar in Advanced Economic Theory
Prerequisites: Economics 100A and 100B.
Individual research, seminar reports, group discussion of problems in economics theory. Formerly numbered 203A-203B.
- 201A-201B. Seminar in the Development of Economic Thought (3-3)
Prerequisites: Twelve units in economics.
A critical study of the development of economic thought. Formerly numbered 200A-200B.
202. Seminar in Comparative Economic Systems (3)
Prerequisites: Economics 102 or 115 or 118.
Topics in comparative economic systems; the Soviet economy, the economy of Communist China, and related subjects.
203. Economic Analysis (3)
Prerequisite: Classified graduate standing.
The theory of the firm in a market economy. Not open to students with credit in Economics 100A-100B; not applicable toward a master's degree in economics. Formerly numbered 201.
210. Seminar in Economic History (3)
Prerequisite: Economics 110 or 111.
Individual study and group discussion on selected topics in economic history.
231. Seminar in Public Finance (3)
Prerequisite: Economics 131.
Advanced study of public finance problems and literature; research.
235. Seminar in 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.
241. Econometrics (3)
Prerequisite: Economics 197.
Measurement in economics. The construction and testing of econometric models. Emphasis on the adaptation of statistical analysis to economics. Estimating demand, supply, and the marginal propensity to consume; forecasting national income.

250. Seminar in Labor Economics (3)

Prerequisites: Economics 150 or 151 or 152.

Individual study and group discussion of selected topics in labor economics.

272. Seminar in Utilities and Water Resources (3)

Prerequisite: Economics 172 or Economics 173.

Advanced study and group discussion of selected topics in utility economics and regulation, and the economics of water resource development.

274. Seminar in Economic Concentration and Monopoly Power (3)

Prerequisites: Economics 174 or both Economics 170 and 100A.

Selected topics in the field of economic concentration and monopoly.

290. Bibliography (1)

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

295. Seminar in International Economics (3)

Prerequisites: Economics 190 or 195 or 196.

Individual and group research into selected topics; group discussion of procedures and results.

296. Seminar in the Economics of Underdeveloped Countries (3)

Prerequisite: Economics 196.

Theories regarding underdevelopment and policies for development of economically underdeveloped countries.

297. Research (3)

Prerequisites: Classified graduate standing and consent of instructor.

Independent research project in an area of economics.

298. Special Study (1-6)

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.

Guidance in the preparation of a project or thesis for the master's degree.

EDUCATION

GENERAL INFORMATION

The School of Education offers graduate study leading to the Master of Arts degree in education with concentrations in the following: audiovisual education, elementary curriculum and instruction, secondary curriculum and instruction, administration, supervision, counseling, and special education. Some of these concentrations are designed to permit concurrent completion of the requirements for the correspondingly named advanced credentials. A student who had not embarked on a given credential program by November 1, 1963, will need to meet new credential requirements developed in accordance with legislation enacted in 1961.

ADMISSION TO THE GRADUATE DIVISION

The student must satisfy the general requirements for admission to the Graduate Division with classified graduate standing, as described in Part Three of this bulletin under Admission to the Graduate Division. In addition, the student must have completed a minimum of 12 units in professional education courses, and he must either be admitted to the program of teacher education or hold a valid California credential, other than an emergency or provisional credential, before he will be recommended by the school for classified graduate standing.

ADVANCEMENT TO CANDIDACY

A student desiring a master's degree concentration in audiovisual education, 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 below). A student desiring a concentration in administration, supervision, or pupil personnel services, 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, Education 179.)

The Qualifying Examination

The student is urged to take this examination (The Graduate Record Examination Advanced Test in Education) at the earliest possible date in his first graduate year. In the fall semester, the test will be given on November 19, 1966, with reservations required prior to October 21, 1966. In the spring semester, the test will be given on March 18, 1967, with reservations required prior to February 17, 1967. Make reservations in the Test Office. (Administration Building, Room 228)

SPECIFIC REQUIREMENTS FOR THE MASTER OF ARTS DEGREE

In addition to meeting the requirements for 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 295A-295B are required courses. All applicants for the Master of Arts degree in education must pass a comprehensive examination and satisfactorily complete either a thesis (Plan A) or two writing seminars (Plan B). In addition, students majoring in certain concentrations are required to verify successful teaching experience, and to satisfy requirements for advanced credentials. See below for further information regarding each of the concentrations.

The Comprehensive Examination

This examination, designed to evaluate the student's achievement in the specific area of his concentration, is required of all candidates for the master's degree in education. A student is eligible to take the comprehensive only if he has been

advanced to candidacy and has completed or is currently enrolled in the last course or courses in his major concentration.

This year this examination will be given on November 5, 1966, and on March 25, 1967. 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

After a student has been admitted to the Graduate Division with classified graduate standing he will be assigned an adviser. He must then make an appointment with that adviser to plan his program of studies for the master's degree. In general, applicants will be programed at that time for Plan B, the seminar plan. After the student has completed approximately half of his program for the degree, he may request permission to transfer to Plan A, the thesis plan, if he has by this time established a plan for his thesis and has secured a faculty sponsor for it. Requests for transfer to Plan A must be prepared as an official change in program for the master's degree and countersigned by the faculty sponsor and then submitted to the Office of Advanced Credentials in the School of Education.

In general, Plan A is designed for students who have a particular research problem they wish to investigate in some detail. It is also recommended for students who plan eventually to secure the doctorate. Plan B provides an opportunity (1) to have two experiences of a writing and research nature, (2) to participate actively in the research projects of the other members of the seminar, and (3) to subject his own research to critical evaluation by the other seminar members. Both plans require the ability to formulate and define research problems, to assemble data pertinent to the problem, to draw conclusions and to present the study in adequate written form. It is expected that the two seminars will be at least as demanding as the thesis with respect to the difficulty and quantity of work required.

Course Requirements

Note: Students are requested to consult with the appropriate master's degree adviser prior to taking any course work leading to the master's degree. Students are urged to take Education 211 (formerly 290A-B) (3 units) as early as possible in their first graduate year.

Elementary Curriculum and Instruction

The Master of Arts degree with a major in elementary curriculum and instruction is designed to increase professional competence in the form of more breadth, depth, and technical skill in curriculum and instruction. Upon adviser's approval, up to 12 units of electives may be chosen from courses in the several elementary subject fields, child study, and related academic departments.

This program of work furnishes an excellent curricular background for those who may prepare later for credentials in administration and supervision. Course requirements are as follows and should preferably be taken in the sequence as listed:

1. Prerequisite: A basic background in education (minimum of 12 units) to include curriculum and methods, child growth and development, tests and measurements, educational psychology, and history and philosophy of education.
2. Education 211, Procedures of Investigation and Report (3 units).
3. Core program (9 units) to include: Education 206, Philosophy of Education, or 207, Educational Sociology; Education 220, Advanced Educational Psychology, and Education 240, Elementary Curriculum.
4. Problems in Teaching (minimum of 6 units) from: Ed. 241, 242, 243, 244, and 248.
5. Electives selected with adviser's approval.
6. Additional required courses (3-6 units): Education 295A-295B, Seminar, or Education 299, Thesis.

Secondary Curriculum and Instruction

The Master of Arts degree in secondary curriculum and instruction is designed to assist the applicant in improving performance in his roles as a classroom teacher.

Twelve units in basic education courses are prerequisite to the program. Course requirements are as follows:

1. Education 211, Procedures of Investigation and Report (3 units).
2. Core program (15 units). The core is composed of courses in education and related fields selected with the approval of the adviser on the basis of the student's interests and goals, and his needs as evidenced by results on the qualifying examination.
3. Electives (6-9 units) selected with the approval of the adviser.
4. Research (3-6 units). Education 295A-295B, Seminar (6 units), or Education 299, Thesis (3 units).

Audio-visual Education

1. Twelve units in basic education courses are prerequisite to the program.
2. Education 211, Procedures of Investigation and Report (3 units).
3. Core program (18 units) to include: (a) Education 240, Curriculum Construction and Evaluation in Elementary Education, or Education 250, Curricular Problems in Secondary Education; (b) nine units as follows: Education 141, Creating Audio-visual Materials for Classroom Use; Education 274A, Utilizing Audio-visual Materials in the Classroom; and Education 275, Administering the Use of Audio-visual Materials; (c) a minimum of three units from the following: Industrial Arts 183, Materials and Techniques for Teaching Graphic Arts; Industrial Arts 185, Photography for Teachers; Industrial Arts 186, Advanced Photography; Education or Speech Arts 143-S, Workshop in Educational Television; and Education 298, Special Study; (d) Education 375, Directed Internship.
4. Electives (6 units).
5. Additional required courses (3-6 units): Education 295A-295B, Seminar, or Education 299, Thesis.

Administration and Supervision

In the fields of School Administration and Supervision the Master's Degree is designed to provide increased knowledge and skill for the prospective administrator. At San Diego State College 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. Prerequisite: Possession of (1) a valid standard teaching credential, standard designated subjects teaching credential or a standard designated services credential or (2) a basic teaching credential issued or renewed by the State of California prior to September, 1966.
2. Education 211, Procedures of Investigation and Report (3 units)
3. The administrative core program: (12 units)
Education 260, Principles of School Administration
Education 261, Educational Leadership
Education 262, Principles of and Procedures for Instructional Improvement
Education 263, (or Education 240 or Education 250), Curriculum Development and Evaluation
4. Advanced Seminars and Field Work: (9 units)
 - a. Elementary Specialization
Education 264A, 264B, 264C, Seminars in Elementary School Administration and Supervision
Education 266A, 266B, 266C, Field Experience in Elementary School Administration and Supervision
 - b. Secondary Specialization
Education 265A, 265B, 265C, Seminars in Secondary School Administration and Supervision
Education 267A, 267B, 267C, Field Experiences in Secondary School Administration and Supervision
5. Research (3-6 units) Education 295A-295B, Seminars, or Education 299, Thesis.
6. Electives (3-6 units) selected with the approval of the adviser.

Advanced seminars require admission to the program of Administration and Supervision, Department of Administration and Supervision. For further information the student is referred to the Office of Advanced Credentials in the School of Education. (Education Building, Room 179)

Counseling

A student who was enrolled by November 1, 1963, in a program leading to the pupil personnel services credential will be permitted to continue that program and to earn the master's degree (if he is qualified) as outlined on his official program, provided only that all requirements for the credential (but not necessarily for the master's degree) must be completed on or before September 15, 1966.

A student not so enrolled will be required to follow the program for the standard designated services credential and master's degree. These programs have been developed in accordance with the regulations adopted by the State Board of Education in May, 1963. A student who wishes to work toward the master's degree with a concentration in counseling must be admitted to the credential program. For further information, the student is referred to the Office of Advanced Credentials in the School of Education. (Education Building, Room 179)

Special Education

A student who was enrolled in a program leading to the credential for teaching exceptional children by November 1, 1963, will be permitted to continue that program, provided he can complete the credential requirements by September, 1966. If such a student has an approved official program on file in the Graduate Office for a master's degree with a concentration in special education, he will be permitted to continue this program also within the regulations of the Graduate Council.

A student not so enrolled will meet the requirement for a master's degree with a concentration if he, in addition to meeting other requirements of the graduate school,

1. Satisfies, either as a part of or in addition to the master's degree, the requirements for the minor in special education as specified for the Standard Teaching Credential. (For students who hold the Credential for Teaching Exceptional Children, this requirement will be waived.)
2. Completes a 30-unit graduate program approved by his adviser. Education 211, 220, 272, 273, and either 299 or 295A-295B are required in all programs. In addition the student interested in the elementary level must complete Education 137 and either Education 246 or Education 247. The student interested in the secondary level must complete Education 232 and one course selected from Education 131A, Education 122, and Education 137.

For further information the student is referred to the Office of Advanced Credentials in the Division of Education (Education Building, Room 179).

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 fifteen semester hours or more of upper division courses.)

Basic Requirements

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

- (a) Hold a master's degree or a higher degree in a subject matter field commonly taught in a junior college.

Professional Preparation

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.

Most 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 (2)
Education 223. Educational Psychology: Junior College (2)
Education 251. 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. (on leave, 1966-67)

Acting Dean of the School of Education: M. F. Stough, Ph.D.

Acting Assistant to the Dean: G. A. Person, Ph.D.

Coordinator of Elementary Education: P. S. Anderson

Coordinator of Secondary Education: C. E. Crum

Coordinator of Administrative Studies: R. A. Houseman

Coordinator of Guidance Studies: D. D. Malcolm

Coordinator of Special Education Studies: R. L. Trimmer

Coordinator of Junior College Programs: R. D. Smith, Jr.

Coordinator of Graduate Programs: R. L. Trimmer

Graduate Advisers:

Elementary Curriculum and Instruction: E. L. Anderson

Secondary Curriculum and Instruction: J. A. Apple, C. E. Fishburn

Elementary Administration and Supervision: W. H. Wetherill

Secondary Administration and Supervision: H. B. Holt

Elementary Pupil Personnel Services: L. E. Strom

Secondary Pupil Personnel Services: L. E. Strom

Special Education: R. L. Trimmer

Audiovisual Education: J. S. Kinder

Professors: M. D. Alcorn, Ed.D.; E. L. Anderson, Ed.D.; P. S. Anderson, Ph.D.; J. A. Apple, Ed.D.; D. L. Baker, Ed.D.; F. A. Ballantine, Ph.D.; Marguerite A. Brydegaard, Ph.D.; C. E. Crum, Ed.D.; C. E. Fishburn, Ed.D.; J. S. Fisher, Ph.D.;

Kurt Friedrich, Ed.D.; E. G. Fulkerson, Ed.D.; P. C. Gega, Ed.D.; R. T. Gray, Ed.D.; D. W. Grasier, Ed.D.; P. J. Groff, Ed.D.; W. O. Hill, Ed.D.; R. A. Houseman, Ed.D.; J. J. Hunter, Ph.D.; A. T. Johnson, M.A.; J. M. Linley, Ph.D.; D. D. Malcolm, Ph.D.; R. R. Nardelli, Ph.D.; G. A. Person, Ph.D.; M. H. Platz, Ed.D.; Helen L. Prouty, Ph.D.; M. H. Shrupp, Ph.D.; J. R. Schunert, Ph.D.; J. P. Stone, Ph.D.; M. F. Stough, Ph.D.; Marguerite R. Strand, Ph.D.; R. L. Trimmer, Ph.D.; W. H. Wetherill, Ph.D.

Associate Professors: Guinivere E. Bacon, M.A.; R. M. Briggs, Ed.D.; Paul Bruce, Ph.D.; C. M. Charles, Ph.D.; C. J. Falk, S.T.D.; G. F. Gates, Ed.D.; H. B. Holt, Ed.D.; H. E. Huls, Ph.D.; Hitoshi Ikeda, Ed.D.; J. E. Inskip, Ph.D.; W. L. Kendall, Ed.D.; Margaret H. La Pray, Ph.D.; Charles Lienert, Ed.D.; M. H. Petteys, Ed.D.; J. A. Rodney, Ed.D.; R. R. Ross, Ed. D.; M. K. Rowland, Ph.D.; J. L. Schmidt, Ph.D.; R. E. Servey, Ph.D.; Arthur Singer, Jr., Ph.D.; H. R. Smith, Ph.D.; J. H. Wilding, Ed.D.

Assistant Professors: Alice J. Anderson, M.A.; Sally M. Anthony, Ed.D.; E. D. Baldwin, Ed.D.; W. W. Bradley, M.A.; W. A. Brown, M.A.; L. L. Cockrell, Ed.D.; Paul Erickson, Ed.D.; D. K. Gast, M.A.; J. J. Geyer, M.A.; Philip Halfaker, Ed.D.; J. E. Harmon, M.S.; O. J. LuPone, Ph.D.; R. L. Miller, Ph.D.; A. J. Mitchell, Ed.D.; R. L. Sanner, M.A.; A. C. Smith, Ed.D.; R. D. Smith, Jr., Ph.D.; L. E. Strom, Ed.D.; Leila V. Tossas, Ed.D.; M. Agnes Walsh, M.A.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN EDUCATION

UPPER DIVISION COURSES IN EDUCATION

- | | |
|---|--|
| 114. Interpretation of Early Childhood Behavior (3) | 152. Measurement and Evaluation in Secondary Education (2) |
| 115. Guidance in Elementary Education (3) | 167. Exceptional Children (3) |
| 118. Supervision of Child Welfare and Attendance (3) | 168. Curriculum and Methods for Teaching Mentally Retarded Children in the Elementary School (3) |
| 122. Reading in Secondary Education (3) | 169. Curriculum and Methods for Teaching Mentally Retarded Children in the Secondary School (3) |
| 125. Organization and Administration of Music Education (2) | 170. Workshop in Special Education (6) |
| 126. Workshop in Secondary Education (3 or 6) | 172. Counseling Exceptional Children (3) |
| 130-131-132. Elementary Education Practicums (Limit of 6 units) | 173. Education of the Severely Mentally Retarded (3) |
| 133. Children's Literature in Elementary Education (3) | 174. Principles and Methods of Speech Correction (3) |
| 135. Workshop in Elementary Education (3 or 6) | 176. Stuttering and Neurological Disorders (3) |
| 137. Reading Difficulties (3) | 177. Audiometry (3) |
| 141. Creating Audio-Visual Materials for Classroom Use (3) | 178. The Teaching of Lip Reading (3) |
| 143S. Workshop in Educational Television (6) | 190. Conference on the Teaching of Mathematics (1) |
| 144. Application of Programed Instruction (3) | 191. Guidance Conference (1) |
| 151. Measurement and Evaluation in Elementary Education (3) | 192. Audiovisual Conference (1) |
| | 199. Special Study (1-6) |

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 Junior College Programs.

Sociological Foundations

201. The Junior College (2)

Overview of philosophy, history, aims, scope, function, outcomes, principles and problems of the junior college. Relation of the junior 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-290B.)

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 (Junior College) (2)

Fieldwork required.

Prerequisite: Credit for or concurrent registration in Education 201.

The nature of the junior college student; the learning process including contributions of audiovisual materials. The functions of student personnel services in the junior college.

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. (Formerly Education 234.)

225A-225B. Determinants of Pupil Behavior (3-3)

Prerequisite: Education 110, or 111 and 112, or equivalent.

Implications of selected research findings in behavioral sciences for the understanding of pupil behavior. Education 225A will deal with the psychological and psycho-physiological research; 225B with social, cultural, and linguistic research.

226. Guidance Services in Public Education (3)

Prerequisite: Education 110, or Education 111 and 112, or equivalent.

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

229. Workshop in Pupil Personnel Services (3)

Prerequisites: Teaching experience and consent of director of the workshop.

Application of principles and procedures to specific situations for improvement of pupil personnel services. Individual problems emphasized. (Formerly Education 239.)

Guidance

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 Pupil Appraisal (4)

Three lectures and three hours of laboratory.

Prerequisites: Education 225A, 225B, and 226.

Measurement theory and procedures, including interpretation of test results to pupils, parents, and teachers. (Formerly entitled: Techniques of Pupil Appraisal.) Not open to students with credit in Education 237.

232. Theory and Process of Vocational Choice (4)

Three lectures and three hours of laboratory and/or field work.

Prerequisites: Education 225A, 225B, and 226.

Vocational choice theory, occupational and educational materials used in career planning. Not open to students with credit in Education 237.

233. Theory and Process of School Counseling (4)

Three lectures and three hours of laboratory.

Prerequisites: Education 225A, 225B, and 226.

Counseling theory and techniques, interviewing and case study methods. Supervised practice in interviewing school age pupils, analyzing interviews, and writing reports. Not open to students with credit in Education 238 or Psychology 152.

234. Theory and Process of Group Work in Guidance (2)

One lecture and three hours of laboratory.

Prerequisites: Education 225A, 225B, and 226.

Group process and individual growth, theories of group interaction, group therapy, and group leadership techniques; applications for the school setting. Not open to students with credit in Education 238.

237. Measurement and Information in Guidance (6)

Five units of lecture and one unit of laboratory.

Prerequisite: Education 225A, 225B, and 226. Application to enter the course must be made early during the preceding semester.

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.

238. School Counseling: Individual and Group (6)

Five units of lecture and one unit of laboratory.

Prerequisites: Education 225A, 225B, and 226. Application to enter the course must be made early during the preceding semester.

Counseling theory and techniques, individual and group. Not open to students with credit in Education 233 or 234.

239. Professional Seminar in Guidance (2)

Prerequisites: Education 231, 232, 233, and 234, or equivalent.

Study of current problems, issues, and research in pupil personnel services. Not open to students with credit in Education 333.

Elementary Education

240. 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.

241. 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.

242. Seminar in Reading in Elementary Education (3)

Prerequisites: Credit or concurrent registration in Education 211.

Advanced study of trends in reading instruction. Topics include developmental sequences in reading skills and abilities, reading in the content fields, individual differences, and interests. Students will develop individual projects or problems.

243. 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.

244. Seminar in Language Arts in Elementary Education (3)

Prerequisites: Credit or concurrent registration in Education 211.

Advanced study of problems in teaching language arts in the elementary school, including spelling, literature and written and oral communication. Emphasis will be on the study of scientific research in the field.

245. Seminar in Elementary Education (3)

Prerequisites: Credit or concurrent registration in Education 211.

A study of the methodology of research with particular reference to the basic research in the psychology and teaching of the elementary school subjects.

246. Advanced Diagnosis in Reading (3)

Prerequisites: Psychology 204 and Education 137, or consent of instructor.

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

247. Advanced Diagnosis and Treatment of Learning Difficulties (3)

Prerequisites: A teaching credential and Education 151 or 152.

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

248. 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.

Secondary Education

250. Curricular Problems in Secondary Education (3)

Prerequisite: Student teaching or teaching experience.

Present status and development of the secondary school curriculum with emphasis upon curriculum construction and curriculum evaluation. Opportunities provided for study of problems submitted by students.

251. Instructional Methods and Materials (Junior College) (2)

Prerequisites: Education 223 and concurrent registration in Education 316.

The teaching process at the junior college level, including lesson planning, utilization of audiovisual and other instructional materials and procedures of evaluation.

252. Seminar for Student Teachers (3)

Prerequisites: Education 110 and 100. To be taken concurrently with Education 180C.

Advanced study in the application of principles and research related to planning instruction, selecting and using materials, evaluating instruction and pupil progress, maintaining class morale; school law and finance for classroom teachers.

254. Advanced Problems in Secondary School Instruction (3)

Prerequisites: Teaching experience and consent of instructor.

An analysis of the scientific research and philosophical principles in secondary school instruction.

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. Principles of and Procedures for Instructional Improvement (3)

Prerequisites: Standard Teaching Credential and consent of instructor.

Improvement of instruction through selection of personnel, development and utilization of in-service programs, teacher evaluation; related legal and financial factors.

- 263. Curriculum Development and Evaluation (3)**
Prerequisites: Standard Teaching Credential and consent of instructor.
Curriculum development in both elementary and secondary schools, with emphasis on interrelationships between these levels, responsibilities of curricular and supervisory personnel, and use of research.
- 264A-264B-264C. Seminar in Elementary School Administration and Supervision (2-2-2)**
Prerequisites: Education 260, 261, 262, 263, consent of instructor, and admission to Program of Educational Administration.
Analysis of theories and practices in the administration and supervision of the elementary school.
- 265A-265B-265C. Seminar in Secondary School Administration and Supervision (2-2-2)**
Prerequisites: Education 260, 261, 262, 263, consent of instructor, and admission to Program of Educational Administration.
Analysis of theories and practices in the administration and supervision of the secondary school.
- 266A-266B-266C. Field Experience in Elementary School Administration and Supervision (1-1-1)**
Prerequisite: Concurrent registration required in Education 264A, 264B, 264C.
Field experience in the elementary schools. Approval of local school district required in the semester prior to registration.
- 267A-267B-267C. Field Experience in Secondary School Administration and Supervision (1-1-1)**
Prerequisite: Concurrent registration required in Education 265A, 265B, 265C.
Field experience in the secondary schools. Approval of local school district required in the semester prior to registration.
- 268. Seminar in School Administration and Supervision (3)**
Prerequisites: Standard Teaching Credential, Education 260, 261, 262, 263, consent of instructor, and admission to Program of Educational Administration.
School administration and supervision in a specialized field, such as the junior college, a subject field, or designated services. Field experience required. May be substituted for Education 264C or 265C.
- 271. Supervision of Student Teaching (2)**
Open to experienced teachers interested in the teacher education program.
Study of selection, orientation, induction, counseling and evaluation of credential candidates and student teachers; helping student teachers plan lessons, conduct classroom learning, analyze pupils' difficulties and achievement.
- 272. Seminar in Education of Exceptional Children (3)**
Prerequisite: Education 167.
Principles, trends and research in the education of exceptional children.
- 273. Seminar in Education of the Mentally Retarded (3)**
Prerequisites: Education 168 or 169 and Psychology 109.
Review of studies and investigation in learning and adjustment of retarded children including etiology, classification, diagnosis, and assessment.
- 274A. Utilizing Audiovisual Materials in the Classroom (3)**
Prerequisite: Education 140.
A critical analysis of research evaluating the use of visual, auditory, and other sensory materials in education.
- 275. Administering the Use of Audiovisual Materials (3)**
Prerequisite: Education 140 or by consent of the instructor.
Organizing, supervising, and coordinating audiovisual centers as an integral part of educational systems.

- 276. Seminar in Programed Instruction (3 to 6)**
Prerequisite: Education 144.
Theories of programed instruction, with emphasis on construction of programs; application to teaching situations. Analysis and revision of programed projects.
- 280. Legal and Financial Aspects of School District Management (3)**
Prerequisites: Standard Teaching Credential, Education 260, 261, 262, 263, and consent of instructor.
Principles and practices of law and finance as an aspect of school business administration, school plant planning and development, and the operation and maintenance of school facilities and services.
- 281. School-Community Relationships (3)**
Prerequisites: Standard Teaching Credential, Education 260, 261, 262, 263, and consent of instructor.
Sociological aspects of school administration with particular emphasis on broad social policy, contemporary issues, community-school relationships, other social and service agencies of the community.
- 282. School District Personnel Management (3)**
Prerequisites: Standard Teaching Credential, Education 260, 261, 262, 263, and consent of instructor.
Personnel relationships to include administrative relationships with the Board of Education and the school staff. Central office personnel procedures including recruitment, employment, placement, evaluation, promotional and training procedures.
- 283. District Curriculum Development, Evaluation and Improvement (3)**
Prerequisites: Standard Teaching Credential, Education 260, 261, 262, 263, and consent of instructor.
School District Curricular development from kindergarten through junior college. Relationships of the superintendent and central administrative staff to regular staff and supervisory staff.
- 284. Advanced Seminar in School Administration and Supervision (3)**
Prerequisites: Standard Teaching Credential, Education 280, 281, 282, 283, and consent of instructor.
An intensive study of a selected area in school administration and supervision. May be repeated with new content for additional credit to a maximum of nine units. Typical courses in this area are School Law, School Finance, School Supervision, Personnel Procedures.
- 286A-286B. Seminar in School Building Construction and Utilization (3-3)**
Prerequisite: Possession of Standard Administration or Supervision Credential, or consent of instructor. Completion of or concurrent registration in Education 286A is prerequisite to 286B.
School building construction and utilization: the development of new facilities from the planning stage to complete utilization; remodeling.

Special Study and Research

- 295A-295B. Seminar (3-3)**
Prerequisites: Education 211 and advancement to candidacy for the Master of Arts degree in education.
An intensive study in selected areas of education culminating in a written project. Limited to students following Plan B for the Master of Arts degree in education.
- 298. Special Study (1-6)**
Individual Study. Six units maximum credit. Prerequisite: consent of staff; to be arranged with department chairman and instructor.
- 299. Thesis (3)**
Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Guidance in the preparation of a project or thesis for the master's degree.

Student Teaching and Internship

316. Directed Teaching Junior College (4) I, II

Prerequisites: Admission to Teacher Education and approval of the Junior College program coordinator. Credit in Education 201 and 223 and concurrent registration in Education 251.

Systematic observation, participation, and teaching under supervision in a junior college. Any grade below C is unacceptable for a credential. A weekly seminar or conference is required.

330. Guidance Internship (2-6)

Application to take the course should be made early during the preceding semester. Course may be repeated for additional credit with new content.

Supervised internship experience in pupil personnel activities with school age pupils.

331. Field Work in School Guidance (2)

Prerequisites: Education 231, 232, 233, and 234, or equivalent.

Application of concepts and procedures of pupil personnel services in public schools. Daily observation and practice. Weekly seminar sessions with college staff.

332. Practicum in School Counseling (3)

Prerequisites: Education 231, 232, 233, and 234, or equivalent. Application to take the course must be made early during the preceding semester.

Supervised experience in group and individual counseling and career planning with school age pupils. Not open to students with credit in Education 333.

333. Advanced Seminar and Practicum in Counseling (6)

Prerequisites: Education 237 and 238, or equivalent. Application to take the course must be made early during the preceding semester.

Supervised experience in group and individual counseling and career planning with school age pupils, and study of current problems, issues, and research. Not open to students with credit in Education 239 or 332.

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 in Audiovisual Education (2-6)

Application to take the course should be made during the preceding semester.

Supervised internship experience in audiovisual services in the public schools.

ENGINEERING

GENERAL INFORMATION

The School of Engineering offers graduate study leading to Master of Science degrees in aerospace, civil, electrical, and mechanical engineering. These curriculums are designed to augment the student's undergraduate training by advanced study in one of the various fields of engineering. Recognizing the increasing importance in modern technology of the engineer-scientist team, San Diego State College 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 College 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 described in Part Three of this bulletin. With the approval of the appropriate department the student working toward the Master of Science degree may elect either Plan A, requiring a thesis, or Plan B, requiring a comprehensive written examination. In either case, a final oral examination will be required.

The student shall arrange his course pattern, in conference with his graduate adviser, according to the following requirements for the specific degree:

AEROSPACE ENGINEERING

Classified Graduate Standing: To be recommended for classified graduate standing in the Graduate Division and to be able to enroll in graduate (200-numbered) courses, a student must have satisfactory scores on the Graduate Record Examination Advanced Test in Engineering and on the Departmental Examination in Aerospace Engineering.

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

- (a) Fifteen units of 200-numbered courses in aerospace engineering and/or engineering mechanics, excluding Engineering 290, 298, and 299.

- (b) At least nine additional units of 100- or 200-numbered courses in the School of Engineering or in the 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.

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 have satisfactory scores on the Graduate Record Examination Advanced Test in Engineering and on the Departmental Examination in Civil Engineering.

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 civil engineering, excluding Engineering 290, 298, and 299.
- (b) At least nine additional units of 100- or 200-numbered courses in the School of Engineering or in the 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 make satisfactory scores on the Graduate Record Examination Advanced Test in Engineering and on the Departmental Examination in Electrical Engineering.

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.
- (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 make satisfactory scores on the Graduate Record Examination Advanced Test in Engineering and on the Departmental Examination in Mechanical Engineering.

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 including at least nine units in one area of concentration (designated as Group A and Group B, below), but excluding Engineering 290, 298, and 299.
- (b) At least nine additional units of 100- or 200-numbered courses in the School of Engineering or in the 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.

Areas of Concentration in Mechanical Engineering

Group A: Energy Conversion

- M.E. 210, Cryogenic Engineering (3)
- M.E. 212, Gas Dynamics (3)
- M.E. 213, Aircraft and Missile Propulsion (3)
- M.E. 214, Analytical Thermodynamics (3)
- M.E. 215A-215B-215C, Heat Transfer (3-3-3)
- M.E. 216, Theory of Turbomachines (3)

Note: The following courses are required in this concentration: M.E. 212, 214, and 215A or 215C.

Group B: Engineering Design

- M.E. 220A-220B, Mechanical Vibrations (3-3)
- M.E. 221, Stress Analysis (3)
- M.E. 222A-222B, Dynamics of Machinery (3-3)
- M.E. 224, Fluid Power and Control Systems (3)
- M.E. 231A-231B, Advanced Science of Materials (3-3)
- M.E. 233, Reactor Materials (3)
- M.E. 234, High Temperature Materials (3)

TEACHING ASSISTANTSHIPS

Graduate teaching assistantships in engineering are available to a limited number of qualified students. Application blanks and additional information may be secured from the Dean of the School of Engineering.

FACULTY

Dean, School of Engineering: M. P. Capp, M.S.

Professors-in-Charge: W. H. Shutts, Aerospace Engineering and Engineering Mechanics; P. E. Johnson, Civil Engineering; C. R. Walling, Electrical Engineering; R. A. Fitz, Mechanical Engineering.

Graduate Advisers: W. H. Shutts, Aerospace Engineering; P. E. Johnson, Civil Engineering; C. R. Walling, Electrical Engineering; R. A. Fitz, Mechanical Engineering.

Professors: M. P. Capp, M.S.; R. A. Fitz, Ph.D.; C. R. Lodge, Ph.D.; Charles Morgan, M.S., M.E.; F. T. Quiett, M.S.; M. V. R. Rao, Ph.D.; W. H. Shutts, Ph.D.; S. H. Stone, M.S.E.; C. R. Walling, E.E.

Associate Professors: E. G. Bauer, M.S.; R. L. Bedore, M.S.M.E.; J. F. Conly, Ph.D.; Sangiah Dharmarajan, Ph.D.; P. E. Johnson, M.S.C.E.; H. L. Stone, B.S.

Assistant Professors: H. L. Bilterman, M.A.; W. L. Brown, E.E.; Shu-Yun Chan, Ph.D.; R. K. Fergin, Ph.D.; M. S. Hundal, Ph.D.; I. Noorany, Ph.D.; D. L. Skarr, B.E.E.; W. G. N. Slinn, M.Sc.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS

UPPER DIVISION COURSES IN ENGINEERING

Aerospace Engineering Programs

- 109B, Nonmetallic Materials (3)
- 130, Network Analysis (4)
- 131, Electromechanical Control Devices (3)
- 132, Time-Domain Analysis of Linear Networks (3)
- 134A-134B, Analysis and Design of Electronic Circuits (3-3)
- 135A-135B, Electronic Circuits Laboratory (1-1)
- 137, Communication Networks (3)
- 138A, Feedback Control Systems (3)
- 138B, Feedback Control Systems Laboratory (1)
- 140, Principles of Heat Transfer (3)
- 142, Fuels and Combustion (3)
- 146B, Advanced Machine Design (3)
- 147A, Introduction to Mechanical Vibrations (3)
- 147B, Experimental Vibrations (3)
- 181, Hydrodynamics (3)
- 187, Methods of Analysis (3)
- 189, Automatic Control Systems (3)

Civil Engineering Programs

- 120B, Structural Analysis II (3)
- 123, Sanitary Engineering (3)
- 128B, Advanced Surveying (3)
- 129, Highway Materials (2)
- 184, Experimental Strain Measurements and Analysis (3)
- 186, Advanced Resistance of Materials (3)

Electrical Engineering Programs

- 131. Electromechanical Control Devices (3)
- 132. Time-Domain Analysis of Linear Networks (3)
- 134B. Analysis and Design of Electronic Circuits (3)
- 135B. Electronic Circuits Laboratory (1)
- 137. Communication Networks (3)
- 138A. Feedback Control Systems (3)
- 138B. Feedback Control Systems Laboratory (1)
- 139A. Advanced Field Theory (3)
- 139B. Microwave Measurements Laboratory (1)
- 182. Transistor Circuit Analysis (3)
- 188. Digital Solutions of Engineering Problems (3)
- 191. Microwave Devices (2)
- 192. Semiconductor Devices (2)
- 193. Electric Analog Systems (3)
- 194. Pulse and Digital Circuits (3)
- 195. Logic Design and Switching Circuits (3)

Mechanical Engineering Programs

- 109B. Nonmetallic Materials (3)
- 120B. Structural Analysis II (3)
- 131. Electromechanical Control Devices (3)
- 140. Principles of Heat Transfer (3)
- 142. Fuels and Combustion (3)
- 143. Gas Dynamics (3)
- 146B. Advanced Machine Design (3)
- 147A. Introduction to Mechanical Vibrations (3)
- 147B. Experimental Vibrations (3)
- 149. Advanced Thermodynamics (3)
- 150A. Subsonic Aerodynamics (3)
- 152. Aircraft Propulsion Systems (3)
- 153. Aerospace Flight Mechanics (3)
- 154. Experimental Aerodynamics (3)
- 160A-160B. Principles of Chemical Engineering (3-3)
- 181. Hydrodynamics (3)
- 184. Experimental Strain Measurements and Analysis (3)
- 187. Methods of Analysis (3)
- 188. Digital Solutions of Engineering Problems (3)
- 189. Automatic Control Systems (3)

GRADUATE COURSES IN AEROSPACE ENGINEERING

AE 200. Seminar (1-3)

Prerequisite: Consent of the graduate adviser and instructor.
Intensive study of selected topics in aerospace engineering, topic to be announced in class schedule. Maximum credit 6 units applicable on a master's degree.

AE 202. Aeroelasticity (3)

Prerequisites: Engineering Mechanics 201 and credit or concurrent registration in Mathematics 118B.

Aircraft and missile structures deformed under static and dynamic loads; aeroelastic instability, vibration modes, divergence, loss of control and alteration of lift distribution; introduction to flutter analysis.

AE 204. Flight Dynamics—Stability and Control (3)

Prerequisite: Credit or concurrent registration in Engineering Mechanics 201.
Dynamic stability and control of aerospace vehicles. Stability derivatives, stability of uncontrolled motion, response to actuation of controls, automatic stability and control.

AE 205. Flight Dynamics—Theory of Flight Paths (3)

Prerequisites: Engineering 150B and credit or concurrent registration in Mathematics 118B.

Analysis of trajectories of aircraft, missiles, satellites, and spacecraft subjected to uniform or central gravitational forces, aerodynamic forces, and thrust.

AE 222. Aerothermal Structural Analysis (3)

Prerequisite: Engineering Mechanics 221.
Stress analysis of structures at elevated temperatures.

AE 240. Advanced Hydrodynamics (3)

Prerequisite: Engineering 181.
Theory of flows in which compressibility and viscosity effects do not predominate. Flow nets, conformal mapping. Applications to subterranean flow, airfoils, and surface waves.

AE 243. Supersonic Flow Theory (3)

Prerequisites: Engineering 150B and credit or concurrent registration in Mathematics 118B.

Theory of flow at supersonic speeds. Linearized theory, three-dimensional wings in steady flight, slender-body theory, methods of characteristics.

AE 244. Hypersonic Flow Theory (3)

Prerequisite: 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.

AE 245. Magnetofluidmechanics (3)

Prerequisite: EM 243.
Study of the effects of interaction of an electromagnetic field with an electrically conducting fluid. Stability, boundary layers, shock waves, and other applications.

AE 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 of six units of course 296 applicable on a master's degree.

AE 297. Research (1-3)

Prerequisite: Consent of graduate adviser.
Research in engineering. Maximum credit six units in Course 297 applicable on a master's degree in engineering.

GRADUATE COURSES IN CIVIL ENGINEERING

CE 200. Seminar (2 or 3)

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

CE 201. Advanced Theory of Structures (3)

Prerequisites: Engineering 120B and Mathematics 118A.
Analysis of statically indeterminate structures based on principles of deflected structures. Approximate analysis of structures under lateral loads for rigid and shear wall structures.

CE 202. Design of Thin Shell Structures (3)

Prerequisite: Engineering 120B.
Analysis and design of typical civil engineering thin shell structures.

CE 203. Plastic Design in Steel (3)

Prerequisite: Engineering 120B.
Analysis and design of steel framed structures for ultimate load. Connections, secondary design problems, column stability, and repeated loading.

CE 204. Advanced Problems in Structural Design (3)

Prerequisite: CE 201.

Design of buildings in steel and timber by elastic theory and limit design. Seismic resistant design.

CE 205. Prestressed Concrete Structures (3)

Prerequisite: Engineering 120B.

Fundamental concepts of prestressed concrete theory. Design applications to various types of structures.

CE 206. Matrix Analysis of Structures (3)

Prerequisite: Engineering 120B.

Development of matrix methods for the analysis of structural systems. Force methods, displacement methods. Application of the digital computer to structural analysis.

CE 207. Dynamics of Structures (3)

Prerequisite: Engineering 120B.

Dynamic disturbances, structures with variable degrees of freedom, free vibrations of slender elastic beams; continuous beams, rigid frames, floor systems. Energy methods in structural dynamics.

CE 220. Traffic Engineering (3)

Prerequisite: Engineering 127.

Traffic characteristics and studies. Control and regulation of street and highway traffic. Parking facilities, mass transportation, traffic engineering administration.

CE 221. Airport Engineering (3)

Prerequisite: Engineering 127.

Problems in airport planning and design. Site selection, general airport layout; safety, economy and community compatibility. Functional design of buildings. Lighting, navigational aids, approach protection.

CE 240. Advanced Soil Mechanics (3)

Prerequisite: Engineering 122.

Advanced theories of soil mechanics and their applications to design, including physicochemical behavior of soils, theories of compaction, consolidation, stress distribution, shear strength, settlement analyses, lateral pressures, and bearing capacity of soils.

CE 241. Advanced Foundation Engineering (3)

Prerequisite: CE 240.

Advanced theories of soil bearing capacity and stress distribution in soils. Analysis and design of foundations and retaining walls. Shallow foundations, piles, piers and caissons. Design of foundations for dynamic loads. Dewatering and other field problems.

CE 242. Seepage and Earth Dams (3)

Prerequisite: CE 240.

Principles governing the flow of water through soils and their application in the design of earth and rock fill dams. Stability analyses for earth dams.

CE 280. Seminar in Structural Engineering (2 or 3)

Prerequisite: Consent of the graduate adviser and instructor.

An intensive study in structural engineering. Maximum credit six units applicable on a master's degree.

CE 281. Seminar in Transportation Engineering (2 or 3)

Prerequisite: Consent of the graduate adviser and instructor.

An intensive study in transportation engineering. Maximum credit six units applicable on a master's degree.

CE 282. Seminar in Soil Mechanics and Foundation Engineering (2 or 3)

Prerequisite: Consent of the graduate adviser and instructor.

An intensive study in soil mechanics and foundation engineering. Maximum credit six units applicable on a master's degree.

CE 283. 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 284. 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 285. Seminar in Construction Engineering (2 or 3)

Prerequisite: Consent of the graduate adviser and instructor.

An intensive study in construction engineering. Maximum credit six units applicable on a master's degree.

CE 286. 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 296. Advanced Topics in Civil Engineering (2 or 3)

Advanced study in the field of civil engineering, topic to be announced in the class schedule. Maximum of six units of course 296 applicable on a master's degree.

CE 297. Research (1-3)

Prerequisite: Consent of graduate adviser.

Research in engineering. Maximum credit six units in course 297 applicable on a master's degree in engineering.

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 210A. Linear System Analysis (3)

Prerequisites: Engineering 130 and credit or concurrent registration in Mathematics 118B.

Loop and nodal system equations based on topological considerations, four-terminal network theory using matrices. Fourier integral transform theory as applied to linear system analysis. Positive real functions and associated testing methods. (Formerly entitled: Network Analysis.)

EE 210B. Linear System Synthesis (3)

Prerequisite: EE 210A.

Frequency-domain synthesis of driving point and transfer impedances in passive and active networks. Canonical forms and network equivalents. Time-domain synthesis and considerations of pulsed-data systems. (Formerly entitled: Network Synthesis.)

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 138A.

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 Systems (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 parameters; differential and chopper stabilized dc amplifiers; high efficiency switching mode power amplifiers, converters and inverters; noise, reliability considerations and high speed switching.

EE 234. Semiconductor RF Circuit Design (3)

Prerequisite: Engineering 134B.

Wide band amplifiers, low level RF amplifiers and mixers, IF amplifiers, AGC, tuning and stability problems, unilateralization and mismatching techniques, harmonic oscillators, VHF power amplifiers including varactor multipliers.

EE 236. Electronic Digital Systems (3)

Prerequisite: Engineering 134B.

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 systems; transmitters, antennas and receivers; detection of signals in noise, extraction of information; propagation effects; system engineering and design.

EE 250. Quantum Electronics (3)

Quantum mechanics for engineers concerned with its application to solid-state devices and optical communication systems.

EE 252. Optical Communications (3)

Prerequisite: EE 250.

Fundamentals of electro-optical technology from ultraviolet through infrared. Characteristics of thermal and laser radiation including generation, transmission, detection, data processing and display.

EE 296. Advanced Topics in Electrical Engineering (2 or 3)

Advanced study in the field of electrical engineering, topic to be announced in the class schedule. Maximum of six units of course 296 applicable on a master's degree.

EE 297. Research (1-3)

Prerequisite: Consent of graduate adviser.

Research in engineering. Maximum credit six units in course 297 applicable on a master's degree in engineering.

GRADUATE COURSES IN ENGINEERING MECHANICS**EM 200. Seminar (2 or 3)**

Advanced study of, or within, one phase of engineering mechanics, such as elasticity, plasticity, rheology, and micromeritics; buckling, vibration, and stability phenomena; hydrodynamics and magnetohydrodynamics; incompressible, compressible, and non-newtonian flow. May be repeated with new subject matter for additional credit.

EM 201. Advanced Dynamics (3)

Prerequisites: Engineering 102 or equivalent, and Mathematics 118A.

Kinematics and kinetics of systems of particles and rigid bodies with special reference to engineering problems. Moving reference axes, generalized coordinates, Lagrangian equations, Hamilton's principle and variational methods.

EM 203. Theory of Vibrations (3)

Prerequisites: Engineering Mechanics 201 and credit or concurrent registration in Mathematics 118B.

Linear and non-linear periodic phenomena as applied to discrete systems and continuous media with application to physical problems.

EM 221. Theory of Elasticity (3)

Prerequisites: 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 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 233. Theory of Plasticity (3)

Prerequisite: Engineering Mechanics 221.

Inelastic stress-strain relations. Solutions to engineering problems with ideally-plastic, strain-hardening, and visco-elastic materials.

EM 243. Advanced Fluid Mechanics I (3)

Prerequisites: Engineering 115 and credit or concurrent registration in 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 243.

A continuation of Engineering Mechanics 243. Further work in laminar and turbulent flow, and boundary layer theory. Diffusion. Applications to engineering problems.

EM 296. Advanced Topics in Engineering Mechanics (2 or 3)

Advanced study in the field of engineering mechanics, topic to be announced in the class schedule. Maximum of six units of course 296 applicable on a master's degree.

EM 297. Research (1-3)

Prerequisite: Consent of graduate adviser.

Research in engineering. Maximum credit six units in course 297 applicable on a master's degree in engineering.

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 210. Cryogenic Engineering (3)

Prerequisite: Engineering 148.

Analysis of low-temperature processes and equipment. Physical properties of structural and other materials used in producing, maintaining, and using low temperatures.

ME 212. Gas Dynamics (3)

Prerequisites: Engineering 143 and Mathematics 118B.

Further considerations of the flow of compressible fluids in conduits. Shock fronts, unsteady flow and real gases.

ME 213. 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 propellant systems. Dynamics of rocket propulsion free of gravity and air resistance.

ME 214. Analytical Thermodynamics (3)

Prerequisites: Engineering 149 and Mathematics 118B.

A development of kinetic theory and statistical thermodynamics. Applications to engineering problems. Irreversible processes. Comparison of classical and irreversible thermodynamics.

ME 215A-215B-215C. Heat Transfer (3-3-3)

Prerequisites: Engineering 140; Mathematics 118B or consent of instructor. ME 215A is a prerequisite to ME 215B.

Semester A. Conduction heat transfer, multidimensional conduction processes, transient analyses.

Semester B. Convection heat transfer. Advanced theories of forced and free convection.

Semester C. Radiation heat transfer. Solid body and gaseous radiation. (Formerly ME 215A-215B, Heat Transfer.)

ME 216. Theory of Turbomachines (3)

Prerequisites: Engineering 143 or 150B.

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.

ME 220A-220B. Mechanical Vibrations (3-3)

Prerequisites: Engineering 147B and Mathematics 118B.

Topics in vibration relating to mechanical design such as non-linear vibrations, distributed mass systems, random vibrations, mobility analysis, isolater design.

ME 221. Stress Analysis (3)

Prerequisites: Engineering 146B, 186 and Mathematics 118B.

Topics in applied elasticity, advanced study of the resistance of materials and experimental stress analysis. Failure theories, energy methods, limit design, theory of plates and shells. Photoelasticity, brittle lacquers, strain gages, and analogs in determining static, dynamic and residual stress distributions.

ME 222A-222B. Synthesis of Machines (3-3)

Prerequisites: Engineering 145, 146A, and Mathematics 118B.

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 109A.

Structure and physical properties of solids. Imperfections in materials and their effect on various properties. Elasticity, plasticity, and fracture of metals related to atomic and crystal structure.

ME 231B. Advanced Science of Materials II (3)

Prerequisite: Mechanical Engineering 231A.

Phase equilibria, metastability, rate and growth processes in solids. Principles of alloying and thermal treatments.

ME 233. Reactor Materials (3)

Prerequisite: Engineering 109A.

Metallurgical processing, corrosion, and radiation effects of nuclear materials. Selection of reactor materials.

ME 234. High Temperature Materials (3)

Prerequisite: Engineering 109A.

Behavior of metals, ceramics, and nonmetallic materials at high temperatures. Effect of environment and service conditions on composition, structure, and physical properties.

ME 296. Advanced Topics in Mechanical Engineering (2 or 3)

Advanced study in the field of mechanical engineering, topic to be announced in the class schedule. Maximum of six units of course 296 applicable on a master's degree.

ME 297. Research (1-3)

Prerequisite: Consent of graduate adviser.

Research in engineering. Maximum credit six units in course 297 applicable on a master's degree in engineering.

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 division chairman and instructor.

E 299. Thesis or Project (3)

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

Guidance in the preparation of a project or thesis for the master's degree.

ENGLISH**GENERAL INFORMATION**

The Department of English, in the Division of the Humanities, offers graduate study leading to the Master of Arts degree with a major in English, and the Master of Arts degree for teaching service with a concentration in English.

ADMISSION TO THE GRADUATE DIVISION

All students must satisfy the general requirements for admission to the Graduate Division with classified graduate standing, as described in Part Three of this bulletin under Admission to the Graduate Division. Graduates from San Diego State College 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 College 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 12 units must be in 200-numbered courses. Required courses are English 290, at least two seminars, and any two of the following courses (if not previously taken): English 192, English 223, English 151, and English 224. Not more than three units from among English 106, English 148, English 149, English 162, and English 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 demonstrate a reading knowledge of French, German, or Latin, and must pass an oral examination on his general knowledge of literature. Details concerning the oral examination are available in the Division of Humanities.

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 from among English 192, English 223, English 151, and English 224; and at least one seminar. In addition, he must take a minimum of six units chosen with his adviser's approval from among the following courses: English 106, English 148, English 149, English 195B, and English 260. Not more than nine units from among the five courses may count as part of the basic 24-unit requirement. The candidate must also submit samples of previous writing and work-in-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.

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 in English from courses listed below as acceptable on master's degree programs in English, of which at least 12 units must be in 200-numbered courses. English 290 and English 299 are required courses. The

student must demonstrate a reading knowledge of a foreign language. The Department of English strongly recommends French or German.

In addition to the above requirements, the student must pass an oral examination on his general knowledge of literature. Details concerning this examination are available in the Division of the Humanities.

TEACHING ASSISTANTSHIPS AND SCHOLARSHIPS

Graduate teaching assistantships in English are available to a limited number of qualified students. Application blanks and additional information may be secured from the Chairman, Division of Humanities.

The Dorothy Cranston Stott scholarship of \$100 is awarded each June to an English major who is graduating from San Diego State College and who is continuing work towards a higher degree or credential.

FACULTY

Chairman, Division of the Humanities: J. R. Adams, Ph.D.

Chairman, Department of English: C. E. Shouse, Ph.D.

Graduate Advisers: G. W. Sanderlin, L. H. Frey, J. W. Dickinson.

Credentialed Advisers: C. B. Kennedy; C. G. Gross

Professors: J. R. Adams, Ph.D.; Gail A. Burnett, Ph.D.; S. L. Gulick, Ph.D.; Harriet Haskell, Ph.D.; C. B. Kennedy, Ph.D.; E. L. Marchand, Ph.D.; W. A. Perkins, Ph.D.; G. L. Phillips, Ph.D.; G. W. Sanderlin, Ph.D.; C. E. Shouse, Ph.D.; J. R. Theobald, Ph.D.; J. N. Tidwell, Ph.D.; Lowell Tozer, Ph.D.

Associate Professors: J. R. Baker, Ph.D.; L. H. Frey, Ph.D.; J. H. Gellens, Ph.D.; G. C. Gross, Ph.D.; J. P. Monteverde, Ph.D.; G. A. Sandstrom, Ph.D.; Dorothy C. Wanlass, Ph.D.; Kermit Vanderbilt, Ph.D.; Kingsley Widmer, Ph.D.

Assistant Professors: J. W. Dickinson, Ph.D.; Eugene Green, Ph.D.; R. H. Hendrickson, M.S.; J. C. Hinkle, M.A.; C. R. McCoy, M.A.; R. E. Rogers, M.A.; George Zelenovich, M.A.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN ENGLISH

UPPER DIVISION COURSES

- | | |
|--|---|
| 101A-101B. Modern Continental Fiction (3-3) | 132. The Frontier and American Literature (3) |
| 106. Creative Writing (3) | 133. The Rise of Realism in American Prose (3) |
| 113. American English (3) | 134. Twentieth Century American Prose (3) |
| 115. The Bible as Literature (3) | 135. American Poetry and Drama Since 1865 (3) |
| 116A-116B. The Age of Elizabeth (3-3) | 141. Ideas and Forms in Modern Prose (3) |
| 117A-117B. Shakespeare (3-3) | 143A-143B. The English Novel (3-3) |
| 118A-118B. Restoration and Eighteenth Century English Literature (3-3) | 148. The Study of Fiction (3) |
| 119A. English Romantic Poetry (3) | 149. The Study of Poetry (3) |
| 119B. Victorian Poetry (3) | 151. Chaucer (3) |
| 120A. The Seventeenth Century: Milton (3) | 152A-152B. World Drama (3-3) |
| 120B. The Seventeenth Century: Metaphysical and Cavalier Poets (3) | 189. Studies in American Folklore (3) |
| 126A. Romantic and Victorian Prose (3) | 191. Advanced Composition (3) |
| 126B. Late Nineteenth Century British Prose (3) | 192. The English Language (3) |
| 129A. Early Modern British Literature (3) | 195A. History of Literary Criticism (3) |
| 129B. Contemporary British Literature (3) | 195B. Theory and Practice of Modern Criticism (3) |
| 130. American Literature to the Jacksonian Period (3) | 196. General Linguistics (3) |
| 131. The American Romantic Period (3) | 197. English Linguistics (3) |
| | 198. Comprehensive Reading and Survey (3) |
| | 199. Special Study (1-6) |

GRADUATE COURSES

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.

260. Problems of Literary Creation (3)

Prerequisites: Consent of instructor and departmental adviser.

Criticism and coaching in the larger forms. May be repeated with new content for additional credit, to a maximum of six units.

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: Twelve units of upper division work in English and English 290.

The critical study of a major author, such as Shakespeare, Dickens, Mark Twain. May be repeated with new content for additional credit.

292. Seminar: A Cultural Period (3)

Prerequisite: Twelve units of upper division work in English and English 290.

The study, through its literature, of a cultural period such as the Renaissance, the Enlightenment, the Romantic Revolution, or the like. May be repeated with new content for additional credit.

293. Seminar: A Literary Problem (3)

Prerequisite: Twelve units of upper division work in English and English 290.

The study of a literary problem, such as Regionalism in America, or European influences on American Literature, or the like. May be repeated with new content for additional credit.

294. Seminar: A Literary Type (3)

Prerequisite: Twelve units of upper division work in English and English 290.

The study of a literary type, such as the Personal Essay, Epic, Tragedy, and the like. May be repeated with new content for additional credit.

298. Special Study (1-6)

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.

Guidance in the preparation of a project or thesis for the master's degree.

FRENCH

GENERAL INFORMATION

The Department of French and Italian, in the Division of the Humanities, offers graduate study leading to the Master of Arts degree with a major in French.

The staff in charge of the graduate program in French is composed of professors whose native tongue is French, or who have studied and traveled extensively in France and in other French-speaking areas, enabling them to represent authoritatively the French language and culture. Library facilities include rich resources in French literature and linguistics, including books, periodicals and newspapers. A foreign language laboratory with modern equipment is available to both graduate and undergraduate students.

ADMISSION TO THE GRADUATE DIVISION

The student must satisfy the general requirements for admission to the Graduate Division with classified graduate standing, as described in Part Three of this bulletin. An undergraduate major in French including 24 upper division units must have been completed, at least six units of which must have been in a survey course in French literature.

ADVANCEMENT TO CANDIDACY

In addition to meeting the requirements for advancement to candidacy as described in Part Three of this bulletin, students may be required to pass a qualifying examination in French given by the Department of French and Italian.

SPECIFIC REQUIREMENTS FOR THE MASTER OF ARTS DEGREE

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Three of this bulletin, the student must complete a graduate program which includes a major consisting of at least 24 units in French, of which at least 17 units must be in 200-numbered courses in French. French 201, 220, 290, and either French 294 or French 299 are required courses.

REQUIREMENTS FOR TEACHING CREDENTIALS

Students who plan to earn a standard teaching credential as well as the master's degree in French will normally follow Plan B, which includes French 294 and the passing of a comprehensive examination in lieu of the thesis.

TEACHING ASSISTANTSHIPS

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

FACULTY

Chairman, Division of the Humanities: J. R. Adams, Ph.D.

Chairman, Department of French and Italian: E. M. Brown, Ph.D.

Credential Adviser: C. H. Baker

Graduate Adviser: E. M. Brown

Professors: Elizabeth M. Brown, Ph.D.; L. N. Messier, Ph.D.

Associate Professor: Guerard Piffard, Ph.D.

Assistant Professors: Marjorie S. Cox, M.A.; Jeanne S. Ghilbert, M.A.; Janis M. Glasgow, Ph.D.; S. L. Max, Ph.D.; N. C. Turner, Ph.D.; Richard Vernier, Ph.D.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN FRENCH

UPPER DIVISION COURSES

- | | |
|--|--|
| 105A-105B. Nineteenth Century French Theater (3-3) | 111A-111B. Seventeenth Century French Literature (3-3) |
| 107A-107B. Eighteenth Century Literature (3-3) | 112A-112B. French Lyric Poetry (3-3) |
| 110A-110B. Nineteenth Century French Novel (3-3) | 148. Applied French Linguistics (3) |
| | 150. Advanced Phonetics and Diction (3) |

Related Fields: Related courses in the fields of anthropology, geography, history, political science, comparative literature, and others, may be selected with the approval of the graduate adviser.

GRADUATE COURSES

201. **History of the French Language** (3)
Prerequisite: 18 units of upper division French.
The history of the French language from the beginnings through the sixteenth century.
202. **Medieval French Literature** (3)
(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 François 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 of French a greater mastery of French language and literature.
230. **Methods of Literary Criticism** (3)
Prerequisite: 18 units of upper division French.
Theory and practice of various traditional and modern critical approaches to specific literary texts.
250. **Seminar in Seventeenth-Century Literature** (3)
Prerequisite: 18 units of upper division French.
Directed research in the works of a representative author (such as Corneille, Molière, 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, Stendahl, or Zola), or in a genre or movement.

Maximum credit six units applicable on a master's degree.

290. Research and Bibliography (2)

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 (1-6)

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.

Guidance in the preparation of a project or thesis for the master's degree.

GEOGRAPHY

GENERAL INFORMATION

The Department of Geography, in the Division of the Social Sciences, offers graduate study leading to the Master of Arts degree with a major in geography. For graduate study in connection with the Master of Arts degree for teaching service with a concentration 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 graduate standing as described in this bulletin under Admission to the Graduate Division. All students must have completed Geography 1 and 3, Geography 2 or 60, and at least 15 units of upper division courses in geography including Geography 100, Geography 101, Geography 180, and Geography 181A.

At the discretion of the department a diagnostic written and oral examination is to be scheduled for the student at the earliest possible date following his arrival on campus. For information concerning the examination and schedule, the entering applicant must meet with the department chairman on the first day of the registration week.

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 include in his graduate program a minimum of 24 units in geography from courses listed below as acceptable on master's degree programs of which 18 or more units must be in 200-numbered courses including Geography 210, 280, 295, 299, and six or more units from 220 and/or 250. The remaining unit requirements may be selected from geography courses listed below, or with approval of the departmental graduate advisory committee, from 100- or 200-numbered courses listed by related departments. All students must demonstrate a reading knowledge of one foreign language, preferably German, French, Spanish, or Russian.

TEACHING ASSISTANTSHIPS

Graduate 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, Division of the Social Sciences: D. S. Milne, Ph.D.

Chairman, Department of Geography: D. I. Eidemiller, Ph.D.

Graduate Advisers: R. W. Richardson, R. A. Lewis

Professors: D. I. Eidemiller, Ph.D.; L. C. Post, Ph.D.; R. W. Richardson, Ph.D.; J. W. Taylor, Ph.D.; C. C. Yahr, Ph.D.

Assistant Professors: W. A. Finch, Jr., Ph.D.; N. H. Greenwood, Ph.D.; E. J. C. Kieweit de Jonge, Ph.D.; C. P. Knuth, M.A.; R. D. Wright, M.A.

COURSES ACCEPTABLE ON MASTER OF ARTS DEGREE PROGRAMS IN GEOGRAPHY

UPPER DIVISION COURSES

- | | |
|---|---|
| 105. Soils and Natural Vegetation (3) | 132. Southern and Southeastern Asia (3) |
| 110. Historical Geography (3) | 150. Political Geography (3) |
| 120. California (3) | 151. Economic Geography: Primary Production (3) |
| 121. United States (3) | 152. Industrial Geography (3) |
| 122. Canada and Alaska (3) | 155. Urban Geography (3) |
| 123. Middle America (3) | 181B. Maps and Graphic Methods (3) |
| 124. South America (3) | 182. Use and Interpretation of Aerial Photographs (3) |
| 125. North Africa and the Near East (3) | 184. Geography of San Diego County (3) |
| 126. Europe (3) | 199. Special Study (1-6) |
| 127. Soviet Union (3) | |
| 129. Oceania (3) | |
| 130. Central and Southern Africa (3) | |
| 131. Eastern Asia (3) | |

GRADUATE COURSES

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. May be repeated once with new content.
250. Seminar in Systematic Geography (3)
Prerequisite: Approval of departmental graduate advisory committee.
Intensive study of an aspect of systematic geography, such as climatology, economic geography, and graphic presentation. May be repeated once with new content.
280. Techniques of Field Research (3)
Prerequisites: Geography 180 and approval of departmental graduate advisory committee.
Detailed and reconnaissance field work including classification of natural and cultural features and preparation of geographical reports and maps based on field data. May be repeated once with new content.
295. Geographic Research and Techniques of Presentation (3)
Prerequisite: Approval of departmental graduate advisory committee.
Seminar in the use of research materials in the different aspects of geography and the effective presentation of research findings in written and oral form.
298. Special Study (1-6)
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.
Guidance in the preparation of a project or thesis for the master's degree.

GEOLOGY

GENERAL INFORMATION

The Department of Geology, in the Division of the Physical 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 student may select one or more of these branches for more specialized work by means of the thesis, seminar, and other advanced study.

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 College in a highly favorable location for graduate work in the geological sciences.

ADMISSION TO THE GRADUATE DIVISION

All students must satisfy the general requirements for admission to classified graduate standing as described in Part Three of this bulletin under Admission to the Graduate Division. In addition, the student must have an over-all grade point average of at least 2.75 in the last 60 units of his undergraduate work and must have a preparation in geology and related sciences substantially equivalent to that required for the bachelor's degree in geology at San Diego State College.

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) not later than the first semester in residence.

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 14 units of 200-numbered courses in geology including Geology 200, 210, 220, 230, and 240; 7 units of other graduate or upper division courses in geology or related fields approved by his departmental committee; 3 units of thesis (Geology 299); and 6 units of upper division or graduate electives approved by his departmental committee or, if Plan B is substituted, 9 units of approved upper division or graduate electives.

TEACHING ASSISTANTSHIPS

A small number of graduate teaching assistantships in geology may occasionally be available to qualified students. Application blanks and additional information may be secured from the Chairman of the Department.

FACULTY

Chairman, Division of the Physical Sciences: D. H. Robinson, Ph.D.
Chairman, Department of Geology: B. E. Thomas, Ph.D.
Graduate Adviser: A. D. Pracek
Professors: R. G. Gastil, Ph.D.; E. E. Roberts, Ph.D.; B. E. Thomas, Ph.D.
Associate Professors: E. C. Allison, Ph.D.; A. M. Bassett, Ph.D.; R. W. Berry, Ph.D.; R. L. Threft, Ph.D.
Assistant Professors: G. L. Petersen, Ph.D.; A. D. Pracek, Ph.D.; G. D. Webster, M.S.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN GEOLOGY

UPPER DIVISION COURSES

- | | |
|-------------------------------------|----------------------------|
| 102. Geology of North America (3) | 116. Micropaleontology (3) |
| 105. Photogeology (3) | 120. Ore Deposits (3) |
| 107. Principles of Stratigraphy (3) | 121. Petroleum Geology (3) |
| 110. Introduction to Geophysics (3) | 125. Petrography (4) |
| 112. Advanced Geophysics (3) | 130. Geochemistry (3) |

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.

210. Advanced Petrology and Mineralogy (3)

Two lectures and three hours of laboratory.

Prerequisite: Geology 125.

Modern theoretical petrology with emphasis on applications to igneous and metamorphic rocks. X-ray, universal stage, mineralography, and other laboratory techniques and their application to geologic problems.

220. Biostratigraphy (3)

Two lectures and three hours of laboratory.

Prerequisite: Geology 107.

Stratigraphic and geochronologic synthesis of geological events and their relationship to the temporal and spatial distribution of life forms. Laboratory analysis of biological data applied to stratigraphic problems.

230. Sedimentology (3)

Two lectures and three hours of laboratory.

Prerequisite: Geology 124.

Classification, distribution, and origin of sedimentary deposits and the theory of their interpretation. Mechanical, chemical, and optical analysis of detrital and chemical sediments and sedimentary rocks and their depositional structures.

240. Regional Tectonics (3)

Prerequisite: Geology 100.

A consideration of topics on continental origin, ultimate orogenic force, mechanics of earth deformation and geosynclinal theory, with a survey of classic geologic provinces, and individual projects utilizing techniques of regional synthesis.

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.

Guidance in the preparation of a thesis for the master's degree.

GERMAN

GENERAL INFORMATION

The Department of German and Russian, in the Division of Humanities, offers graduate study leading to the Master of Arts degree with a major 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 which includes a major consisting of at least 24 units in German including German 201, 203 or 204, 205 or 206, 290, and 299. With special permission of the adviser, students may substitute German 294 for German 299, Thesis, in which case the student must pass a comprehensive examination in lieu of the thesis as in Plan B.

REQUIREMENTS FOR TEACHING CREDENTIALS

Students who plan to earn a standard teaching credential as well as the master's degree in German will normally follow Plan B, which includes German 294 and the passing of a comprehensive examination in lieu of the thesis.

TEACHING 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, Division of the Humanities: J. R. Adams, Ph.D.

Chairman, Department of German and Russian: R. H. Lawson, Ph.D.

Graduate Adviser: R. H. Lawson

Credential Adviser: C. H. Baker

Professor: E. M. Wolf, Ph.D.

Associate Professor: R. H. Lawson, Ph.D.

Assistant Professors: Elaine E. Boney, Ph.D.; Vytas Dukas, Ph.D.; H. I. Dunkle, Ph.D.; Ernst Gallati, M.A. Equivalent; L. A. Koslik, Ph.D.; H. W. Paulin, Ph.D.; Yoshio Tanaka, Ph.D.; W. O. Westervelt, M.A.

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)
 108. Renaissance and Baroque Literature (3)
 110A-110B. Contemporary German Literature (3-3)
 115. Goethe's "Faust" (3)
 130. German Syntax and Stylistics (2)
 150. German Phonology (2)

GRADUATE COURSES IN GERMAN

201. History of the German Language (3)
 Prerequisite: 18 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 (3)
 Prerequisite: 18 units of upper division German.
 The grammatical structure of Middle High German, with readings from the "Nibelungenlied," "Parzival," "Tristan und Isolde," and from the lyric poets of the period.
203. The German "Novelle" (3)
 Prerequisite: 18 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: 18 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 Hoelderlin to Rilke (3)
 Prerequisite: 18 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: 18 units of upper division German.
 Representative works of German dramatic literature from Kleist to Hauptmann.
251. Seminar in Eighteenth-Century Literature (3)
 Prerequisite: 18 units of upper division German.
 Directed research in the works of an important author or in a problem, type, or movement of German literature of the eighteenth century. Maximum credit six units applicable on a master's degree.
255. Seminar in Nineteenth-Century Literature (3)
 Prerequisite: 18 units of upper division German.
 Directed research in the works of an important author or in a problem, type, or movement of German literature of the nineteenth century. Maximum credit six units applicable on a master's degree.
260. Seminar in Twentieth-Century Literature (3)
 Prerequisite: 18 units of upper division German.
 Directed research in the works of an important author or in a problem, type, or movement of German literature of the twentieth century. Maximum six units applicable on a master's degree.
290. Research and Bibliography (2)
 Prerequisite: 18 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.

294. Comprehensive Reading and Survey Course (3)

Prerequisites: 18 units of upper division German and consent of graduate adviser and department chairman.

A study of important movements, authors, and works in German literature. Designed to supplement the reading done in previous courses, in preparation for the comprehensive examination in literature for candidates for the M.A. degree in German.

298. Special Study (1-6)

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.

Guidance in the preparation of a project or thesis for the master's degree.

GRADUATE COURSES IN RUSSIAN

201. History of the Russian Language (3)

Prerequisite: 18 units of upper division Russian.

The historical development of the Russian language with source readings from Old Church Slavic.

205. Russian Poetry from Pushkin to the Present (3)

Prerequisite: 18 units of upper division Russian.

The major Russian poets of the nineteenth and twentieth centuries.

HEALTH EDUCATION

GENERAL INFORMATION

The Division of Health Education, Physical Education and Recreation 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 and related courses, selected from those listed as applicable on master's degree programs, 15 of which must be in 200-numbered courses. All programs must include Health Education 201, 202, 299, and Education 211.

TEACHING ASSISTANTSHIPS

Graduate teaching assistantships in health 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, Division of Health Education, Physical Education, and Recreation:
W. L. Terry, Ed.D.

Chairman, Department of Health Education: L. A. Harper, Ed.D.

Credential Adviser: Angela M. Kitzinger

Graduate Adviser: Angela M. Kitzinger

Professors: R. M. Grawunder, Ed.D.; Angela M. Kitzinger, Ph.D.

Associate Professors: W. C. Burgess, Ed.D.; L. A. Harper, Ed.D.

Assistant Professors: W. D. Boskin, M.S.; A. C. McTaggart, Ph.D.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN HEALTH EDUCATION

UPPER DIVISION COURSES

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|--|---|
| 145. Safety Education and Accident Prevention (3) | 160. Introduction to Public Health (3) |
| 151. Health Education for Secondary Teachers (2) | 169. World Health (3) |
| 153. Administration of the School Health Program (3) | 175. Health in Later Maturity (3) |
| 154. Workshop in Health Education (2) | 176. Health and Medical Care (3) |
| | 192. Critical Analysis of Professional Literature (3) |
| | 197. Supervised Field Experience (1-3) |
| | 199. Special Study (1-6) |

GRADUATE COURSES

200. Seminar (3)

Prerequisite: Fifteen units completed in Health Education.
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 Education.
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 Education 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.

245. School Safety Programs and Procedures (3)

Prerequisite: Health Education 145.
Advanced consideration of school safety programs including legal bases and requirements, personnel responsibilities, liability, instruction, maintenance, and school transportation.

270. Communicable and Non-Communicable Disease (3)

Prerequisite: Undergraduate major or minor in Health Education.
Study of selected diseases. Individual investigation and discussion.

271. Habit-forming and Addicting Drugs (3)

Prerequisite: Undergraduate major or minor in Health Education.
Non-medical use of stimulants and depressants, habituation, addiction, and control. Individual investigation and discussion.

298. Special Study (1-6)

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.
Guidance in the preparation of a project or thesis for the master's degree.

HISTORY

GENERAL INFORMATION

The Department of History, in the Division of the Humanities, offers graduate study leading to the Master of Arts degree with a major 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 under Admission to the Graduate Division. As an additional requirement, the student must have completed a bachelor's degree with an undergraduate major in history. Applicants who have an undergraduate major in social studies with a concentration of 18 or more upper division units in history will, with the advice of the departmental representative and the recommendation of the department, be acceptable, but will be held responsible for completing the minimum requirements for an undergraduate major in history.

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 history from courses listed below as acceptable on master's degree programs, at least 12 of which must be in 200-numbered courses. History 201, History 299, and at least six units of seminar work are required. Students are required to demonstrate a reading knowledge of French, German, or Spanish.

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 in history from courses listed below as acceptable on master's degree programs in history, of which at least 12 units must be in 200-numbered courses. History 201 and 299 are required.

SCHOLARSHIPS

The K. W. Stott Scholarship, in the amount of \$100, is awarded each June to a student who has attended San Diego State College for at least two years and who is being graduated or who has been graduated by San Diego State College with a major in history. The recipient must continue work in San Diego State College, or in any other accredited college or university, toward a higher degree or credential. The selection is made by the Department of History with approval of the Committee on Scholarships.

FACULTY

Chairman, Division of the Humanities: J. R. Adams, Ph.D.
Chairman, Department of History: D. L. Rader, Ph.D.
Graduate Adviser: W. F. Hanchett, (Coordinator); A. O. Coox; S. J. Pincetl
Credentialed Adviser: D. S. Milne
Professors: W. F. Hanchett, Ph.D.; J. E. Merrill, Ph.D.; A. P. Nasatir, Ph.D.; S. J. Pincetl, Jr., Ph.D.; D. L. Rader, Ph.D.; Katherine M. Ragen, Ph.D.; L. U. Ridout, Ph.D.; K. J. Rohlfisch, Ph.D.; C. R. Webb, Jr., Ph.D.
Associate Professors: N. F. Norman, Ph.D.; R. T. Ruetten, Ph.D.

Assistant Professors: D. E. Berge, Ph.D.; A. D. Coox, Ph.D.; P. F. Flemion, M.A.; T. A. Krueger, Ph.D.; R. L. Munter, Ph.D.; A. C. O'Brien, A.M.T.; J. B. Reid, Jr., M.B.A.; A. W. Schatz, Ph.D.; R. T. Smith, Jr., Ph.D.; B. G. Starr, Ph.D.; D. D. Sullivan, M.A.; K. F. Woods, Ph.D.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN HISTORY

UPPER DIVISION COURSES

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| 111A-111B. Ancient History (3-3) | 167A-167B. Diplomatic History of Latin America (3-3) |
| 121A-121B. Europe in the Middle Ages (3-3) | 171A-171B. Rise of the American Nation (3-3) |
| 131A-131B. Renaissance and Reformation (3-3) | 172A-172B. Development of the Federal Union (3-3) |
| 141A-141B. Europe in the 17th and 18th Centuries (3-3) | 173A-173B. Civil War and Reconstruction: The United States from Jackson to Grant (3-3) |
| 142A. The French Revolution and Napoleonic Era (3) | 174. Emergence of the United States as a World Power (3) |
| 142B. Modern France (3) | 175A-175B. The United States, 1901-1945 (3-3) |
| 143A-143B. Intellectual History of Europe in the 19th Century (3-3) | 175C. The United States in the Nuclear Age (3) |
| 144A-144B. Europe in the 20th Century (3-3) | 176A-176B. American Foreign Policy (3-3) |
| 145A-145B. Diplomatic History of Modern Europe (3) | 177A-177B. Constitutional History of the United States (3-3) |
| 146A-146B. Germany and Central Europe (3-3) | 178A-178B. The Development of American Capitalism (3-3) |
| 147A-147B. Russia and the Soviet Union (3-3) | 179A-179B. Intellectual History of the American People (3-3) |
| 149A-149B. Modern Spain and Italy (3-3) | 181A-181B. The Westward Movement (3-3) |
| 151A-151B. England (3-3) | 182. The Spanish Borderlands and the Southwest to 1821 (3) |
| 152A-152B. Constitutional History of England (3-3) | 183. The Modern Southwest (3) |
| 153A-153B. Tudor and Stuart England (3-3) | 189A-189B. California (3-3) |
| 154A-154B. Modern Britain (3) | 190A-190B. Southeast Asia (3-3) |
| 156. The Byzantine Empire and Its Successors (3) | 191A-191B. The Far East (3-3) |
| 157. The Arab States, Israel, and Iran (3) | 192. Chinese Civilization (3) |
| 158A-158B. Africa (3-3) | 193. China in Modern Times (3) |
| 160A-160B. Latin America (3-3) | 194. Japanese Civilization (3) |
| 161. Mexico (3) | 195. Rise of Japan as a Modern State (3) |
| 162. Argentina, Brazil, and Chile (3) | 196A-196B. The Indian Sub-Continent (3-3) |
| 163. The Caribbean Area (3) | |
| 165A-165B. Economic, Social, and Intellectual Development of Latin America (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. **Historical Method** (3)
Required of all applicants for advanced degrees in history. Open to others with consent of instructor.
General historical bibliography. The use of libraries and archives. Methods of critical historical investigation. The interpretations of history.
202. **Seminar in Historiography** (3)
Prerequisite: History 197 or consent of instructor.
A critical study of the works of major historians, their philosophies and the schools of scholarship associated with their work.

248. Directed Reading in Medieval and Early Modern European History (3)

Prerequisite: Six units in Ancient, Medieval, Renaissance, or Reformation History.
Selected readings in source materials and historical literature, with detailed analyses in oral or written form.

249. Directed Reading in Modern European History (3)

Prerequisite: Six units in Modern European History.
Selected readings in source materials and historical literature, with detailed analyses in oral or written form.

251A-251B. Seminar in English History (3-3)

Prerequisite: Consent of instructor. History 251A is prerequisite to 251B.
Directed research in selected aspects of English history.

262. Directed Reading in Latin American History: Colonial Period (3)

Prerequisite: Six units in Latin American History.
Selected readings in source materials and historical literature, with detailed analyses in oral or written form.

263. Directed Reading in Latin American History: National Period (3)

Prerequisite: Six units in Latin American History.
Selected readings in source materials and historical literature, with detailed analyses in oral or written form.

270A-270B. Seminar in American History (3-3)

Prerequisite: Consent of instructor. History 270A is prerequisite to 270B.
An introduction to intensive investigation of various phases of American history.

274. Seminar in Recent United States History (3)

Prerequisite: History 174 or 175A or 175B or 175C, or any six units in U. S. History.
Research. Selected topics in recent United States history.

276. Seminar in Diplomatic History of the United States (3)

Prerequisite: Consent of instructor.
Research. Selected topics in American diplomatic history. (Formerly offered as History 276A-276B, Seminar in Diplomatic History.)

278. Directed Reading in United States History (3)

Prerequisite: Six units in United States history.
Selected readings in source materials and historical literature, with detailed analyses in oral or written form.

281. Seminar in History of the West (3)

Prerequisite: Consent of instructor.
Research. Selected topics in the history of the American West.

289. Seminar in California History (3)

Prerequisite: Consent of instructor.
Research. Selected topics in California history. (Formerly offered as part of History 281A-281B, Seminar in the History of the West and California.)

290. Directed Readings in Asian History (3)

Prerequisite: Six upper division units of Asian history. Selected readings in source materials and historical literature.

291. Seminar in Far Eastern History (3)

Prerequisite: Consent of instructor.
Research. Selected topics in Far Eastern history.

298. Special Study (1-6)

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

299. Thesis (3)

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

HOME ECONOMICS

GENERAL INFORMATION

The Department of Home Economics, in the Division of the Fine Arts, offers graduate study for the standard teaching credential with a speciality in secondary teaching.

FACULTY

Chairman, Division of the Fine Arts: G. N. Sorenson, M.A.
Chairman, Department of Home Economics: Nona H. Cannon, Ed.D.
Credential and Graduate Advisers: Zoe E. Anderson, Nona H. Cannon
Professor: Nona H. Cannon, Ed.D.
Associate Professors: Helen L. Dorris, M.S.; Alice E. Thomas, M.A.
Assistant Professors: Zoe E. Anderson, Ph.D.; Mary F. Martin, M.S.; Barbara K. Nordquist, M.S.

GRADUATE COURSES

200. Seminar: Foods and Nutrition (3)

Prerequisites: Home Economics 100, 105, and Chemistry 3, or their equivalents.
An intensive study of research in technological advances in the fields of foods and nutrition, with emphasis on professional organizations and ethical procedures.

215. Seminar: Clothing and Textiles (3)

Prerequisites: Home Economics 119 and consent of instructor.
Investigation and report of specific problems in textiles and clothing. Controlled laboratory methods used. Individual research emphasized.

230. Seminar: Home Management and Family Economics (3)

Prerequisites: Home Economics 40, 151, and 152.
A study of recent research and findings in the area of home management and/or family finance. Students develop extensive individual projects.

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.

274. Seminar: Marriage Adjustment (3)

Prerequisite: Home Economics 179.
Individual study, seminar reports, and group discussion of selected topics in marriage adjustment.

281. Seminar: Home Economics Education (3)

Prerequisites: 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.

298. Special Study (1-6)

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

INDUSTRIAL ARTS

GENERAL INFORMATION

The Department of Industrial Arts, in the Division of the Physical Sciences, offers graduate study leading to the Master of Arts degree for teaching service with a concentration in industrial arts. The Department of Industrial Arts makes it possible for students to gain advanced experiences in two of the most modern industrial arts buildings in the West. Well equipped instructional facilities are devoted to work in woods, metals, transportation (auto mechanics), graphic arts, electricity-electronics, photography, industrial drawing, comprehensive industrial arts and industrial handicrafts.

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 FOR TEACHING SERVICE

In addition to meeting the requirements for 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, he must complete a concentration consisting of a minimum of 18 units in industrial arts from courses listed below as acceptable on master's degree programs, of which at least 12 must be in 200-numbered courses. Education 211 and Industrial Arts 299 are required courses.

TEACHING 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, Division of the Physical Sciences: D. H. Robinson, Ph.D.

Chairman, Department of Industrial Arts: W. C. Anderson, Ph.D.

Graduate Adviser: F. J. Irgang

Credential Adviser: W. C. Anderson

Professors: W. C. Anderson, Ph.D.; F. J. Irgang, Ph.D.; L. W. Luce, Ed.D.; D. W. Thiel, Ph.D.

Associate Professors: W. L. McLoney, Ed.D.; J. D. McMullen, Ed.D.; R. D. O'Dell, Ed.D.

Assistant Professors: Edward Aguirre, Ed.D.; G. D. Bailey, Ed.D.; G. K. Hammer, Ed.D.; H. L. Marsters, M.A.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN INDUSTRIAL ARTS

UPPER DIVISION COURSES

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| 101. Industrial Arts Crafts (3) | 163. Industrial Arts Electricity-Electronics (3) |
| 102. Advanced Industrial Arts Crafts (3) | 172. Advanced Transportation (3) |
| 111. Comprehensive Industrial Arts (3) | 173. Industrial Arts Transportation (3) |
| 112. Organization of Comprehensive Industrial Arts (3) | 182. Advanced Graphic Arts (3) |
| 122. Advanced Industrial Drawing (3) | 183. Industrial Arts Graphic Arts (3) |
| 123. Industrial Arts Drawing (3) | 185. Photography for Teachers (3) |
| 132. Advanced Metalworking (3) | 186. Advanced Photography (3) |
| 133. Industrial Arts Metalworking (3) | 190. Experimental Industrial Arts (1 or 2) |
| 152. Advanced Woodworking (3) | 193. Industrial Arts Organization and Management (2) |
| 153. Industrial Arts Woodworking (3) | 194. Recent Trends in Industrial Arts Education (2) |
| 162. Advanced Electricity-Electronics (3) | 199. Special Study (1-6) |

GRADUATE COURSES

200. Seminar (3)

Prerequisite: Consent of instructor.

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

201. Advanced Teaching Problems (3)

Prerequisites: Teaching experience in area selected and consent of instructor.

Materials and advanced techniques of teaching specific activity areas, such as (a) industrial drawing; (b) general metalworking; (c) general woodworking; (d) electricity-radio; (e) transportation; (f) graphic arts; (g) photography; (h) comprehensive industrial arts. Stress on project design and visual materials. May be repeated with new materials for additional credit.

202. Industrial Arts Problems in Graphics and Design (3)

Prerequisite: Industrial Arts 123.

Detailed study of 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.

Advanced study of problems involved in industrial arts metalworking. Individual research project dealing with instructional materials or processes.

205. Problems in Industrial Arts 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. Industrial Arts Problems in Electricity-Electronics (3)

Prerequisite: Industrial Arts 163.

Intensive study of contemporary developments in the electricity and electronics areas. Development of projects, aids, 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.

Intensive study in selected areas of the graphic arts industry related to materials, production methods, and allied pursuits. Techniques of presentation of findings in effective written and oral form.

220. History and Philosophy of Industrial Education (3)

A study of the philosophical foundations and development of industrial education and its continuing role in American culture. Contemporary practices and trends will be given consideration.

221. Curriculum Construction in Industrial Arts Education (3)

Selection of teaching content for school situations in compliance with the best known procedures regarding analysis, objectives, methods and learning, and development of instructional devices related directly to course content.

222. Instructional Resources for Industrial Arts Education (3)

Survey, selection, and compilation of materials used in the development of resource units for instruction in industrial education, involving publications, organized talks, field trips, visual materials, technical literature and related materials. Organization and evaluation of such materials.

223. Evaluation in Industrial Arts Education (3)

Consideration of the purposes, principles, methods, and criteria of evaluation as applied to industrial education, with emphasis on the special problems of measuring growth, achievement, and performance in various phases of educational effort.

267. Field Work in Industrial Arts (3)

Prerequisites: Teaching experience in industrial arts and consent of instructor.

Application of the principles of laboratory organization, management, and planning in reference to the objectives of industrial arts in development of school programs. Maximum of six units applicable to a master's degree.

290. Bibliography (1)

Exercise in the use of basic reference books, professional literature, and specialized bibliographies, preparatory to the writing of a master's thesis.

298. Special Study (1-6)

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.

Guidance in the preparation of a thesis in industrial arts for the master's degree.

MATHEMATICS

GENERAL INFORMATION

The Department of Mathematics, in the Division of the Physical Sciences, offers graduate study leading to the Master of Arts degree with a major in mathematics, to the Master of Arts degree for teaching service with a concentration in mathematics, and to the Master of Science degree in mathematics.

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 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 mathematics from courses listed below as acceptable on master's degree programs. At least 12 units must be in 200-numbered courses in mathematics, exclusive of Mathematics 202, 204A, 204B, 290, and 299. The student is required to demonstrate a reading knowledge of French, German, or Russian and 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 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 in mathematics selected from courses listed below as acceptable on master's degree programs in mathematics, of which at least 12 units must be in 200-numbered courses. The student is required to pass a final oral and written comprehensive examination in mathematics. 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.

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, described in Part Three of this bulletin. The student must also meet the following departmental requirements:

- Complete 12 units of 200-numbered mathematics courses, not including Mathematics 202, 204A, 204B, 290, and 299.
- Complete nine additional units of graduate level or approved upper division mathematics courses, not including Mathematics 290 or 299.
- Complete nine additional units of approved electives.
- Pass a final oral and written comprehensive examination in mathematics. (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.)

TEACHING 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, Division of the Physical Sciences: D. H. Robinson, Ph.D.

Chairman, Department of Mathematics: R. D. Branstetter, Ph.D.

Graduate Advisers: Master of Arts (Major), G. C. Lopez; Master of Arts (Teaching), G. A. Becker; Master of Science, V. C. Harris, C. V. Holmes

Credential Adviser: J. E. Eagle

Professors: G. A. Becker, Ph.D.; R. D. Branstetter, Ph.D.; J. E. Eagle, Ed.D.; V. C. Harris, Ph.D.; A. R. Harvey, Ph.D.; C. V. Holmes, Ph.D.; M. M. Lemme, Ph.D.; L. G. Riggs, Ph.D.; P. W. Shaw, Ph.D.; N. B. Smith, Ph.D.; L. J. Warren, Ph.D.

Associate Professors: C. B. Burton, Ph.D.; E. I. Deaton, Ph.D.; L. D. Fountain, Ph.D.; R. B. Killgrove, Ph.D.; G. C. Lopez, Ph.D.; J. M. Moser, Ph.D.; Daniel Saltz, Ph.D.; R. L. Van de Wetering, Ph.D.; Margaret F. Willerding, Ph.D.

Assistant Professors: H. G. Bray, Ph.D.; S. J. Bryant, Ph.D.; Helen F. Clark, B.A.; S. I. Drobnies, Ph.D.; H. A. Gindler, Ph.D.; Betty B. Kvarda, Ph.D.; M. T. Lang, M.A.; G. C. Lopez, Ph.D.; Leon Nower, M.S.; R. C. Osborne, M.S.; Albert Romano, Ph.D.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN MATHEMATICS

UPPER DIVISION COURSES

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|---|--|
| 105. Introduction to the Foundations of Geometry (3) | 155. Mathematical Logic (3) |
| 106. Projective Geometry (3) | 156. Logical Foundations of Mathematics (3) |
| 108. Differential Geometry (3) | 160. Introduction to Topology (3) |
| 119. Differential Equations (3) | 170. Partial Differential Equations (3) |
| 121A-121B. Advanced Calculus (3-3) | 175. Functions of a Complex Variable (3) |
| 124. Vector Analysis (3) | *181A-181B. Selected Topics of Secondary Mathematics (2-2) |
| 134. Probability (3) | *187A-187B. Probability and Statistics for Secondary School Teachers (3-3) |
| 135A-135B. Numerical Analysis and Computation (3-3) | 196. Advanced Topics in Mathematics (2 or 3) |
| 137. Combinatorial Principles for Digital Computers (3) | 199. Special Study (1-6) |
| 140A-140B. Mathematical Statistics (3-3) | |
| 150A-150B. Modern Algebra (3-3) | |
| 152. Number Theory (3) | |

* For National Science Foundation students only except with consent of instructor.

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

205. Advanced Mathematical Logic (3)

Prerequisite: Mathematics 150A or 155.

First-order theories, completeness theorems, arithmetization, Gödel's incompleteness theorem.

212. Advanced Ordinary Differential Equations (3)

Prerequisites: Mathematics 119 and 121A.

Existence and uniqueness theorems, Wronskians, adjoint systems, Sturm-Liouville boundary value problems, equations of Fuchsian type.

214. Advanced Partial Differential Equations (3)

Prerequisite: Mathematics 170.

Theory and application of the solution of boundary value problems in the partial differential equations of engineering and physics by various methods; orthogonal functions, the Laplace transformation, other transformation methods, Green's functions.

220A-220B. Topology (3-3)

Prerequisite: Mathematics 121B.

Metric spaces, regular spaces, Hausdorff spaces, general topological spaces, arcs and curves, and the Jordan Curve Theorem.

224A-224B. Functions of a Complex Variable (3-3)

Prerequisites: Mathematics 121B and 175. Mathematics 224A is prerequisite to Mathematics 224B.

Analytic continuation, elliptic functions, conformal mapping, Riemann surfaces.

226A-226B. Functions of a Real Variable (3-3)

Prerequisites: Mathematics 119 and 121B. Mathematics 226A is prerequisite to Mathematics 226B.

Point sets, functions and limits, continuity, differentiation, Riemann and Lebesgue integration.

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 150B.

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.

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.

298. Special Study (1-6)

Prerequisite: Permission 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.

Guidance in the preparation of a project or thesis for the master's degree.

MUSIC

GENERAL INFORMATION

The Department of Music, in the Division of the Fine Arts, offers graduate study leading to the Master of Arts degree with a major in music and the Master of Arts degree for teaching service with a concentration in music. The Department is a member of the National Association of Schools of Music.

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, 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. With the approval of the Department of Music, the student may elect Plan A or Plan B. If Plan A is elected, the student must enroll in Music 290, Research Procedures in Music, Music 299, Thesis, and pass a final oral examination on his thesis; or enroll in Music 290, Research Procedures in Music, Music 299, Thesis, give a lecture recital, and present a brief explanation of his project in thesis form. If Plan B is elected, the student will not enroll in Music 299 but will present a public recital in lieu of the comprehensive examination normally required in Plan B.

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 music, of which at least 12 must be in 200-numbered courses. Music 290, and Music 299 are required. The thesis may, with approval of the Music Department faculty, consist in part of a lecture-recital.

SCHOLARSHIPS

Information on music scholarships may be obtained by writing to the Chairman, Music Scholarship Committee, Music Department, San Diego State College.

FACULTY

Chairman, Division of the Fine Arts: G. N. Sorenson, M.A.

Chairman, Department of Music: J. D. Smith, M.M.

Graduate Advisers: Master of Arts (Major), J. D. Smith; Master of Arts (Teaching), J. D. Smith

Credentialed Advisers: P. V. Anderson; Norman Rost; J. D. Smith; M. S. Snider
Professors: P. V. Anderson, M.M.; Norman Rost, M.M.; J. D. Smith, M.M.; M. S. Snider, M.A.

Associate Professors: Gilbert Back; M. R. Biggs, Ph.D.; J. D. Blyth, Ed.D.; C. K. Genzlinger, M.M.; L. C. Hurd, M.M.; A. A. Lambert, Ph.D.; Edith J. Savage, Ed.D.; D. F. Smith, M.M.; David Ward-Steinman, D.M.A.

Assistant Professors: Conrad Bruderer, M.M.; R. G. Estes, M.M.E.; R. B. Forman, Ed.D.; M. E. Hogg, Ph.D.; D. M. Loomis, M.M.; Danlee Mitchell, M.S.; J. J. S. Mracek, Ph.D.; J. M. Sheldon, M.A.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN MUSIC

UPPER DIVISION COURSES

- | | |
|--|---|
| 105. Modern Harmonic Practice and Four-Part Counterpoint (3) | 146A. Choral Conducting (1) |
| 106. Sixteenth Century Counterpoint (3) | 146B. Instrumental Conducting (1) |
| 107. Composition (3) | 152A-152B. History of Music (2-2) |
| 109A-109B. Instrumentation and Arranging (2-2) | 153. Opera Technique (2) |
| 123S. Workshop in Instrumental Techniques and Chamber Music for Strings, Woodwind, and Brass Instruments (2) | 154A. Chamber Music Literature-Strings (2) |
| 141. Methods in Teaching Piano (3) | 154B. Small Wind and Percussion Ensemble Literature (2) |
| | 154C. Symphonic Literature (2) |
| | 154D. Keyboard Literature (2) |
| | 154E. Song Literature (2) |
| | 199. Special Study (1-6) |

GRADUATE COURSES

200. Seminar in Music Education (3)
Prerequisite: Consent of instructor.
Seminars in music education are offered to provide an opportunity for concentrated study in the several areas listed.
- A. Supervision of Music Education
 - B. Junior High School Music
 - C. Marching Band Technic
 - D. Instrumental Methods
 - E. Choral Methods
 - F. Problems in Elementary School Classroom Music
203. Musicology (3)
Prerequisites: Music 152A and 152B.
Problems and methods of research in aesthetics, acoustics, music history and related fields. Source materials, bibliography. Completion of written project.
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. Seminar: Music Theory (3)
Prerequisite: Music 108.
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.
- 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 (1)

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 two units.

Piano	Oboe	Trumpet	Violin
Organ	Clarinet	Trombone	Viola
Voice	Saxophone	Baritone Horn	Cello
Flute	Bassoon	Tuba	Contrabass
	French Horn	Percussion	Composition

252. Seminar in Music History (3)

Prerequisites: Music 152B and consent of instructor.

Seminars in music history are offered for intensive study in each of the historical eras as listed below.

- A. Music of the Middle Ages and Renaissance
- B. Music of the Baroque Era
- C. Music of the 18th and 19th Centuries
- D. Twentieth Century Music
- E. American Music

290. Research Procedures in Music (3) (Three lectures.)

Reference Materials, bibliography, investigation of current research in music, processes of thesis topic selection, and techniques of scholarly writing.

298. Special Study (1-6)

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.

Guidance in the preparation of a project or thesis for the master's degree.

PHILOSOPHY

GENERAL INFORMATION

The Department of Philosophy, in the Division of the Humanities, offers a program of graduate studies leading to the Master of Arts degree with a major in philosophy. This curriculum is designed to provide advanced study in the field of philosophy as a basis for further graduate work and to meet the needs of students who plan to teach in colleges or hold other positions of leadership.

ADMISSION TO THE GRADUATE DIVISION

All students must satisfy the general requirements for admission to the Graduate Division with classified graduate standing, as described in Part Three of this bulletin. In addition, they must have completed an undergraduate major with a minimum of 24 upper division units in philosophy including courses in Ancient, Medieval, and Modern History of Philosophy. A grade point average of 3.0 (B) is required in all upper division work in philosophy.

ADVANCEMENT TO CANDIDACY

All students must meet the general requirements for advancement to candidacy, including the foreign language requirement, as stated in Part Three of this bulletin.

SPECIFIC REQUIREMENTS FOR THE MASTER OF ARTS DEGREE

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Three of this bulletin, the student must 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 15 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, Division of the Humanities: J. R. Adams, Ph.D.

Chairman, Department of Philosophy: W. S. Snyder, Ph.D.

Graduate Adviser: A. E. Shields

Professors: S. M. Nelson, Ph.D.; Harry Ruja, Ph.D.; A. E. Shields, Ph.D.

Associate Professors: A. W. Anderson, Ph.D.; Patricia A. Crawford, Ph.D.; Jack McClurg, Ph.D.; W. S. Snyder, Ph.D.

Assistant Professors: L. M. Capel, B.A.; R. J. Howard, Ph.D.; W. H. Koppelman, B.S., L.L.B.; E. W. Warren, 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) | 127. Values and Social Science (3) |
| 104. History of Philosophy IV (3) | 128. Theory of Ethics (3) |
| 105. Contemporary Philosophy (3) | 131. Philosophy of Language (3) |
| 108. Recent Existentialism (3) | 132. Philosophy of History (3) |
| 109. Ordinary Language Analysis (3) | 135. Philosophy of Religion (3) |
| 121. Deductive Logic (3) | 137. Philosophy of Science (3) |
| 122. Inductive Logic (3) | 150A-150B. Asian Thought (3-3) |
| 123. Theory of Knowledge (3) | 164. American Philosophy (3) |
| 125. Metaphysics (3) | 199. Special Study (1-6) |

GRADUATE COURSES

201. **Seminar in Ancient Philosophy (3)**
Prerequisite: 12 upper division units in philosophy including Philosophy 101.
Directed research in a major author (e.g., Plato or Aristotle), or a school (e.g., the Pythagoreans or the Stoics), or a problem (e.g., causation or the state). Maximum credit six units applicable on a master's degree.
202. **Seminar in Medieval Philosophy (3)**
Prerequisite: 12 upper division units in philosophy including Philosophy 102.
Directed research in a major author (e.g., Augustine or Aquinas), or a school (e.g., neo-Aristotelianism), or a problem (e.g., political philosophy or reason and authority). Maximum credit six units applicable on a master's degree.
203. **Seminar in Modern Philosophy (3)**
Prerequisite: 12 upper division units in philosophy including Philosophy 103.
Directed research in a major author (e.g., Hume or Kant), or a school (e.g., the continental rationalists or the British empiricists), or a problem (e.g., the nature of substance). Maximum credit six units applicable on a master's degree.
205. **Seminar in Contemporary Philosophy (3)**
Prerequisite: 12 upper division units in philosophy including Philosophy 105.
Directed research in a major author (e.g., Dewey or Wittgenstein), or a school (e.g., the pragmatists or the language analysts), or a problem (e.g., perception or personhood). Maximum credit six units applicable on a master's degree.
211. **Seminar in Legal Philosophy (3)**
Prerequisite: 12 upper division units in philosophy.
Directed research in recurrent themes of philosophical significance in jurisprudential literature.
221. **Deductive Logic (3)**
Prerequisites: 12 upper division units in philosophy including Philosophy 121.
A comparison of deductive systems in logic. Problems of definability, consistency, and completeness. The role of logic in the foundations of mathematics.
223. **Seminar in Epistemology (3)**
Prerequisite: 12 units of upper division work in philosophy.
An examination of some of the basic problems concerning meaning, perception, and knowledge. Readings in the works of leading contemporary philosophers, such as C. I. Lewis and Bertrand Russell.
225. **Seminar in Metaphysics (3)**
Prerequisite: 12 units of upper division work in philosophy.
An inquiry into the search for significant qualities of reality.
228. **Seminar in Ethics (3)**
Prerequisite: 12 units of upper division work in philosophy.
Contemporary ethical issues. Critical analysis of the works of some leading theorists, such as Moore, Dewey, Stevenson, and Toulmin.
231. **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.
Studies in 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 (1-6)**
Individual study. Maximum credit six units.
Prerequisites: 12 units of upper division work in philosophy and consent of staff; to be arranged with department chairman and instructor.
299. **Thesis (3)**
Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Guidance in the preparation of a project or thesis for the master's degree.

PHYSICAL EDUCATION

GENERAL INFORMATION

The Division of Health Education, Physical Education, and Recreation offers graduate study leading to the Master of Arts degree for teaching service with a concentration in physical education.

For information regarding graduate programs in Health Education, see the section of this bulletin on Health 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 meet the general requirements for advancement to candidacy, which are described in Part Three of this bulletin and, in addition, must complete the Graduate Record Examination Advanced Test in Physical Education with a satisfactory score.

The student is urged to take this examination at the earliest possible date in his first graduate year. Reservations for the test must be made in the Test Office four weeks prior to the dates given below:

In the Summer Session, 1966 _____ July 25
In the Fall Semester, 1966 _____ November 19
In the Spring Semester, 1967 _____ March 18

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 as applicable, the student must satisfy the basic requirements for the master's degree, described in Part Three of this bulletin. The thirty-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. Education 211, Procedures of Investigation and Report, and Physical Education 299, Thesis, are required courses. Each candidate will be required to complete an area of specialization after consulting the graduate adviser for the division and the chairman of the student's thesis committee.

TEACHING ASSISTANTSHIPS

Graduate teaching assistantships in physical education are available to a limited number of qualified students. Application blanks and additional information may be secured from the Chairman of the Division.

FACULTY

Chairman, Division of Health Education, Physical Education, and Recreation: W. L. Terry, Ed.D.

Chairman, Men's Physical Education Department: W. H. Schutte, M.S.

Chairman, Women's Physical Education Department: Mary F. Cave, M.A.

Chairman, Department of Recreation: W. L. Terry, Ed.D.

Graduate Adviser: Angela M. Kitzinger

Credential Advisers: C. W. Benton; George Ziegenfuss, Dorothy J. Tollefsen

Professors: C. W. Benton, Ed.D.; D. D. Coryell, M.S.; Paul Governali, Ed.D.; F. W. Kasch, Ed.D.; Margaret L. Murphy, Ed.D.; F. L. Scott, Ph.D.; W. L. Terry, Ed.D.; George Ziegenfuss, Ed.D.

Associate Professors: Ruth Andrus, Ph.D.; H. S. Broadbent, M.S.; Mary F. Cave, M.A.; J. L. Carter, Ph.D.; Evelyn Lockman, M.A.; A. W. Olsen, M.A.; L. I. Olsen, Ed.D.; W. H. Schutte, M.S.; C. C. Sportsman, M. S.; Dorothy J. Tollefsen, M.A.

Assistant Professors: Joan F. Barone, M.A.; Florence Cullen, Ph.D.; Kathleen Fox, M.A.; E. P. Franz, M.A.; Elizabeth Griffin, M.S.; S. E. Hall, M.A.; Kathleen Lewis, M.A.; J. E. Madden, M.S.; W. H. Phillips, Jr., Ed.D.; W. D. Ross, Ph.D.; Jean Sprunt, M.S.; R. W. Wells, M.A.; Betty J. Wilhelm, M.A.; Gloria R. Williamson, M.A.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN PHYSICAL EDUCATION

UPPER DIVISION COURSES

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|---|--|
| 153A-153B. Problems in Dance (2-2) | 167. Applied Anatomy and Kinesiology (3) |
| 157A-157B. Choreography in Contemporary Dance (Men and Women) (3-3) | 168. Physiology of Exercise (3) |
| 160. Mechanics of Body Movement (Women) (3) | 169. Adapted Activities (3) |
| 162. Measurement and Evaluation in Physical Education (3) | 181. History and Philosophy of Dance (2) |

GRADUATE COURSES

200. Seminar (Men) (3)
An intensive study in advanced physical education, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.
201. Curriculum in Physical Education (3)
Prerequisite: Major or minor in physical education, or equivalent.
Analysis of current curricula in physical education. Special emphasis on curriculum construction and evaluation.
202. Administration of Physical Education in the Secondary Schools (3)
Prerequisite: Major or minor in physical education, or equivalent.
Topics include personnel problems, selection and maintenance of equipment and facilities, program organization and evaluation, budget, and related items.
203. History and Philosophy of Physical Education (3)
Prerequisite: Major or minor in physical education.
The historical and philosophical forces guiding the development of physical education from ancient to modern times. (Formerly Physical Education 212.)
204. Problems in Recreation (3)
Same course as Recreation 204.
A survey of current problems facing the recreation profession, through a review of literature, discussion of trends, and observation of school and community situations. Analysis and evaluation of actual problems. Written reports required.
205. Current Trends and Issues in Physical Education (3)
A critical appraisal of contemporary trends and issues.
Investigation and analysis of professional literature. (Formerly Physical Education 203, Problems in Physical Education.)
206. Seminar in Competitive Athletics for Men (3)
Prerequisite: Major or minor in physical education or recreation.
Knowledge and appreciation of the skills, techniques, and teaching methods involved with the coaching of athletics; the study of possible solutions to problems associated with the program of competitive school athletics.
207. Advanced Kinesiology and Biomechanics (3)
Prerequisites: Zoology 8, 22, and Physical Education 167.
Principles of mechanics applied to the analysis of human motion. Electromyography and cinematography as aids in analysis. Kinetic analysis of movement.

208. Advanced Physiology of Exercise (3)

Prerequisites: Zoology 8 and 22, Physical Education 167 and 168.
Advanced aspects of the physiology of exercise. Effects of exercise on human beings in relation to health, longevity, morphology, and performance.

209. Advanced Adapted Activities (3)

Prerequisites: Zoology 8 and 22, Physical Education 167 and 169.
Postural divergencies, lack of physical development, physical handicaps, and special programs. Individual exercise programs. Preventive and corrective exercises. Functional examinations and the physician's report. Ethical procedures and limitations.

210. Seminar in Facilities for Physical Education (3)

Prerequisite: Major or minor in physical education or recreation.
Individual study of problems related to the planning, development and maintenance of physical education and athletics facilities.

211. Advanced Evaluation in Physical Education (3)

Prerequisite: Physical Education 162.
Methods, statistical techniques, and apparatus used in testing physical performance. Sources of error, limitations on application and interpretation. Practice in construction and use of tests.

213. Problems in Women's Physical Education (3)

Prerequisite: Major or minor in physical education.
An intensive study of selected areas of the women's physical education program.

214. Seminar in Dance Programs (3)

Prerequisite: Major or minor in physical education.
Procedures and evaluation of all forms of educational dance with implications for curriculum planning. Lectures and research. Completion of written project.

220. Principles of Neuromuscular Tension (3)

Prerequisite: Physical Education 167.
Theories underlying the causes of muscular hypertension and the application of hypokinetic principles in daily living.

298. Special Study (1-6)

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.
Guidance in the preparation of a project or thesis for the master's degree.

PHYSICAL SCIENCES

GENERAL INFORMATION

The Division of the Physical Sciences offers graduate study leading to the Master of Arts degree for teaching service with a concentration in astronomy, chemistry, geology, and physics. This is a five-year curriculum designed specifically for prospective teachers in the fields of the physical sciences. All master's degree programs in the physical sciences are under the supervision of the Division of Physical Sciences Science Education Council.

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 the 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.

Attention is called to the status of an unclassified graduate as described in Part Three of this Bulletin under Admission to the College for Graduate Study. "An unclassified graduate student is not eligible to enroll in 200-numbered courses, except with permission of the instructor and concurrence of the Dean of Graduate Studies. All credit earned by an unclassified graduate student is subject to evaluation as to its acceptance for graduate credit in a master's degree curriculum."

ADVANCEMENT TO CANDIDACY

All students must satisfy the general requirements for advancement to candidacy, 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 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 12 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 Division 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 division will require a comprehensive examination in lieu of the thesis.

FACULTY

Chairman, Division of the Physical Sciences: D. H. Robinson, Ph.D.
Graduate Adviser: N. F. Dessel
Coordinator of Science Education: N. F. Dessel
Division of Physical Sciences Science Education Council: J. R. Bolte, Ph.D.; N. F. Dessel, Ph.D.; J. G. Malik, Ph.D.
Professors: C. F. Merzbacher, Ed.D.; P. E. Stewart, Ph.D.
Associate Professor: Burt Nelson, Ph.D.
Assistant Professors: F. J. Howard, Ph.D.; G. D. Turner, A.B.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN THE PHYSICAL SCIENCES

UPPER DIVISION COURSES

196. Advanced Physical Science (1-3)

GRADUATE COURSES

Physical Science 200. Seminar (2 or 3)

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

Physical Science 299. Thesis or Project (3)

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

Guidance in the preparation of a thesis or project in one of the physical sciences for the master's degree.

Other Approved Courses

With the approval of the Division of the Physical Sciences Science Education Council, 100- or 200-numbered courses offered by the departments in the Divisions of Education and Engineering may be used to satisfy the requirements for the degree.

PHYSICS

GENERAL INFORMATION

The Department of Physics, in the Division of the Physical Sciences, offers graduate study leading to the Master of Arts degree with a major in physics and the Master of Science degree with a major in physics. The Master of Arts degree with a major in physics is designed primarily for those students who anticipate additional work leading to the doctorate degree in physics. The Master of Science degree is designed to augment the student's undergraduate training by an additional fifth year of more advanced studies and is best suited for those students who plan to terminate their graduate work at the fifth year level. Experimental facilities are available for studies in such fields as acoustics, nuclear physics, optics and spectroscopy, physical electronics, and solid state physics.

Within the San Diego area there are governmental and industrial research laboratories concerned with all the fields of physics and electronic science. Scientists from these agencies help provide stimulation through seminars and scientific meetings in the area. Excellent opportunities exist for summer employment in these agencies for the acquisition of industrial field experience.

ADMISSION TO THE GRADUATE DIVISION

All students must satisfy the general requirements for admission to the Graduate Division with classified graduate standing, as described in Part Three of this bulletin and pass the qualifying examination in physics. In addition, the undergraduate preparation in physics must have substantially satisfied the undergraduate requirements for the bachelor's degree in physics. (Refer to the general catalog for a description of these majors.) If the student's undergraduate preparation is deficient, he will be required to take courses for the removal of the deficiency. These courses, taken by the student as an unclassified graduate, are in addition to the minimum of 30 units for the master's degree.

Attention is called to the status of an unclassified graduate student as described in Part Three of this bulletin under Admission to the College for Graduate Study. "An unclassified graduate student is not eligible to enroll in 200-numbered courses, except with permission of the instructor and concurrence of the Dean of Graduate Studies. All credit earned by an unclassified graduate student is subject to evaluation as to its acceptance for graduate credit in a master's degree curriculum."

ADVANCEMENT TO CANDIDACY

All students must satisfy the general requirements for advancement to candidacy, including the foreign language requirement, as stated in Part Three of this bulletin.

SPECIFIC REQUIREMENTS FOR THE MASTER OF ARTS DEGREE

In 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, 270, 275, 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, 270, 297 (3 units), 299, and three additional units chosen from Physics 205, 219, 260, and 275. 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.

TEACHING ASSISTANTSHIPS AND SCHOLARSHIPS

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, Division of the Physical Sciences: D. H. Robinson, Ph.D.

Chairman, Department of Physics: J. D. Garrison, Ph.D.

Graduate Advisers: Master of Arts and Master of Science, J. G. Teasdale

Credential Adviser: N. F. Dessel

Professors: J. D. Garrison, Ph.D.; C. R. Moe, Ph.D.; L. L. Skolil, Ph.D.; L. E. Smith, Jr., Ph.D.; J. G. Teasdale, Ph.D.

Associate Professors: J. R. Bolte, Ph.D.; O. H. Clark, Ph.D.; N. F. Dessel, Ph.D.; R. H. Morris, Ph.D.; J. D. Templin, Ph.D.; G. H. Wolter, M.S.

Assistant Professors: R. L. Craig, M.S.; A. W. K. Metzner, Ph.D.; P. F. Nichols, Ph.D.; D. E. Rehfuess, Ph.D.; J. D. Templin, Ph.D.; F. A. Wolf, Ph.D.

Lecturers: D. C. Kalbfell, Ph.D.; M. H. Nichols, Ph.D.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN PHYSICS

UPPER DIVISION COURSES

- | | |
|---------------------------------------|---|
| 106. Optics (3) | 156. Digital Computers (3) |
| 114. Acoustics (3) | 167. Semiconductor Devices (3) |
| 122. Senior Physics Laboratory (2) | 173B. Physical Electronics (3) |
| 131. Astronautics (2) | 175. Analytic Mechanics (2) |
| 148. Nuclear Physics Laboratory (3) | 180. Solid State Physics (3) |
| 151. Nuclear Physics (3) | 190. Introductory Quantum Mechanics (3) |
| 152. Transients in Linear Systems (3) | 196. Advanced Physics (2 or 3) |
| 153. Servo-System Design (3) | |
| 155. Analog Computers (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.

An intensive study of 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.

Selected 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.

An intensive study of 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.

Foundations of Statistical Mechanics. Applications to Physical Systems. Includes classical and quantum statistics, kinetic theory, low pressure phenomena, Boltzmann transport equation, irreversible processes.

225. Microwaves (2)

Prerequisite: Physics 173B.

Generation and detection, propagation and attenuation in wave guides and ferromagnetic components. Nuclear resonance, radio and microwave spectroscopy, masers, atomic clock, radio astronomy.

231. Advanced Astronautics (2)

Prerequisite: Physics 131.

Special emphasis on perturbations due to inhomogeneity of the central force field.

- 240A-240B. Reactor Materials Technology (3-3)

Prerequisites: Physics 180, 190, and Chemistry 141.

A study of certain engineering, chemical, and nuclear properties of materials used in reactors, and of the influence of the reactor environment on these properties.

- 245A-245B. Reactor Theory (3-3)

Prerequisite: 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.

246. Problems in Reactor Design Parameters (3)

Concurrent registration in Physics 240B, 245B, and 248B required.

A combined seminar and group project course in which the class will be assigned a specific, detailed reactor problem. Subgroups will work on specific problems within the main reactor design problem.

- 248A-248B. Reactor Laboratory (2-2)

Prerequisites: Chemistry 141, Physics 148, and concurrent registration in Physics 245A-245B.

Measurement of the static and dynamic characteristics of a reactor. Reactor operation, 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.

Applications of quantum theory to nuclear physics. 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.

Selected advanced topics in contemporary electronics.

261. Pulse and Digital Circuits (2)

Prerequisites: Physics 160 and 173B.

Analysis of multivibrators, time base generators, pulse transformers, blocking oscillators, delay lines, counting circuits, digital computer circuits, and transmission gates. Design of practical circuits.

270. Electromagnetic Theory (3)

Prerequisite: Physics 170.

Boundary value problems; time varying electric and magnetic fields; propagation of radiation; antennas, wave guides.

275. Quantum Mechanics (3)

Prerequisites: Physics 151, 175, and 190.

The physical basis of quantum mechanics. Schrodinger's wave equation, and Heisenberg's matrix mechanics. Quantum theory of radiation, molecular, and nuclear systems. Approximation methods.

280. Theory of the Solid State (3)

Prerequisites: Physics 175, 180, and 190.

The energy band theory of solids, with applications to the electrical and optical properties of dielectrics, semi-conductors, 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 (1-6)

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.

Guidance in the preparation of a project or thesis in physics for the master's degree.

POLITICAL SCIENCE

GENERAL INFORMATION

The Department of Political Science, in the Division of the Social Sciences, offers graduate study leading to the Master of Arts degree with a major in political science and the Master of Science degree in public administration. For graduate study in connection with the Master of Arts degree for teaching service with a concentration in social science, refer to the section of this bulletin under social science. Research facilities provided by the Department of Political Science include the Public Affairs Research Institute, the Public Administration Center, the International Relations Center, the Institute of International Relations, 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.

MASTER OF ARTS DEGREE IN POLITICAL SCIENCE

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 with a major 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

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Three of this bulletin, the student must complete a graduate program which includes a minimum of 24 units in political science (excluding Political Science 296, Internship in Public Administration), from courses listed below as acceptable on master's degree programs of which at least 15 units must be in 200-numbered courses including Political Science 200, The Scope and Method of Political Science, and Political Science 299, thesis. A final oral examination on the general field of the thesis is also required.

MASTER OF SCIENCE DEGREE IN PUBLIC ADMINISTRATION

This degree permits the selection under advisement, from a wide variety of courses, of a curriculum which may be oriented toward a generalist approach or toward an emphasis on personnel administration, finance administration, public planning, correctional administration, or social administration. Since management responsibilities are shared by administrators in a number of professional areas in the public service, the student is encouraged to supplement his study of government and administration with graduate courses offered by departments other than political science. Graduate offerings in economics, sociology, psychology, business administration, and other areas may be utilized in the student's graduate program.

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. The student must also 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 in addition to the 30-unit minimum for the degree); and (2) have maintained an undergraduate grade point average of not less than 3.0 (B) in the major field.

ADVANCEMENT TO CANDIDACY

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

SPECIFIC REQUIREMENTS

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: (1) at least fifteen units of 200-numbered courses, including Political Science 200 and six units in one or more of the following seminars: Political Science 240, 241, 242, 249, 250, and 260; (2) a minimum of twelve units of upper division or graduate courses in political science or related fields selected under advisement; (3) Political Science 299, Thesis, unless Plan B with a comprehensive examination, both written and oral, in lieu of the thesis, is selected by the student with the approval of the graduate adviser. The student's program must include a minimum of six units in one of the fields of concentration: general administration; local government administration; correctional administration; recreation administration; or public planning administration. The student must include in his program Political Science 296, Internship in Public Administration, unless this requirement is waived by the graduate adviser on the basis that he has had satisfactory qualifying experience in the field. If the student is required to enroll in Political Science 296, the minimum number of units in 200-numbered courses will be eighteen rather than fifteen, as stated above. The internship normally will be served in a governmental agency under supervision of the agency and the department jointly. He will perform duties of an administrative nature. Placements 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.

TEACHING ASSISTANTSHIPS

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

Chairman, Division of the Social Sciences: D. S. Milne, Ph.D.
Chairman, Department of Political Science: N. V. Joy, Ph.D.
Director, Public Administration Program: R. F. Wilcox, Ph.D.

Graduate Advisers:

Master of Arts in Political Science: N. V. Joy
Master of Science in Public Administration: W. R. Bigger, R. F. Wilcox
Professors: W. R. Bigger, Ph.D.; M. D. Generales, Degree in Law and Political Science, University of Athens; H. L. Janssen, Ph.D.; N. V. Joy, Ph.D.; D. B. Leiffer, Ph.D.; L. V. Padgett, Ph.D.; R. F. Wilcox, Ph.D.
Associate Professors: Melvin Crain, Ph.D.; I. K. Feierabend, Ph.D.; R. C. Gripp, Ph.D.; J. D. Kitchen, Ph.D.; I. J. Kubanis, Ph.D.
Assistant Professors: C. F. Andrain, Ph.D.; E. C. Dreyer, B.A.; H. H. Haak, Ph.D.; J. A. Hobbs, Ph.D.; D. H. Jones, Ph.D.; T. J. Kahng, Ph.D.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN POLITICAL SCIENCE

UPPER DIVISION COURSES

- | | |
|---------------------------------------|--|
| 105. American Political Thought (3) | 122. Propaganda and Public Opinion (3) |
| 111A-111B. Theory of the State (3-3) | 123S. Contemporary American Politics (3) |
| 112. Modern Political Thought (3) | 124. Political Behavior (3) |
| 116. American National Government (3) | 125. The Legislative Process (3) |
| 120. Political Parties (3) | |

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COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN POLITICAL SCIENCE—Continued

UPPER DIVISION COURSES—Continued

- | | |
|--|---|
| 127A-127B. Constitutional Government (3-3) | 170A-170B. International Relations (3-3) |
| 136. Administrative Law (3) | 171. The Conduct of American Foreign Relations (3) |
| 138. Introduction to Jurisprudence (3) | 172. International Organization (3) |
| 139A-139B. American Constitutional Law (3-3) | 173. Principles of International Law (3) |
| 140. Introduction to Public Administration (3) | 174. National Security Policy (3) |
| 142. State Government (3) | 175. International Relations of the Latin-American States (3) |
| 143. Municipal and County Government (3) | 180. Government of England (3) |
| 144. Introduction to Public Personnel Administration (3) | 181. Government of the Soviet Union (3) |
| 145. Human Factors in Management (3) | 182. Political Systems of South America (3) |
| 147. Government and Public Policy (3) | 183. Governments and Politics of South and Southeast Asia (3) |
| 148. Government of Metropolitan Areas (3) | 184. The Mexican Political System (3) |
| 149. Comparative Public Administration (3) | 185. Governments of Continental Europe (3) |
| 151. California Law of Municipal Corporations (2) | 186. Comparative Communist Governments (3) |
| 152. Administrative Management (3) | 187. Governments and Politics of the Far East (3) |
| 153. Case Studies in Public Administration (3) | 188. Governments and Politics of the African States (3) |
| 157. Public Relations of Public Agencies (3) | 189. Government and Politics of the Middle East (3) |
| 160. Principles of Planning (3) | 190. Comparative Political Systems (3) |
| 161. Field Studies in Government (3) | 191. Government and Politics of the Developing Areas (3) |
| 162. Finance Administration (3) | 192. Political Change in Contemporary Africa (3) |
| 165. Dynamics of Modern International Crises (3) | |

GRADUATE COURSES

200. The Scope and Method of Political Science (3)
The discipline of political science and systematic training in its methodology. Required of all applicants for advanced degrees in political science.
210. Seminar in Political Theory (3)
May be repeated with new content to a maximum of six units with consent of the graduate adviser.
215. Seminar in American National Government (3)
May be repeated with new content to a maximum of six units with consent of graduate adviser.
220. Seminar in Politics (3)
May be repeated with new content to a maximum of six units with consent of the graduate adviser.
230. Seminar in Public Law (3)
May be repeated with new content to a maximum of six units with consent of the graduate adviser.
240. Seminar in Public Administration (3)
May be repeated with new content to a maximum of six units with consent of the graduate adviser.

241. Seminar in Public Personnel Administration (3)

Prerequisite: Political Science 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: Political Science 140.

Selected problems in administration of economic and technical assistance programs; problems of administration in developing areas.

249. Seminar in Comparative Administration (3)

Prerequisite: Political Science 140.

Selected problems in administration, organization, and processes of foreign and international governments. May be repeated to a maximum of six units with consent of the graduate adviser.

250. Seminar in Local Government (3)

Selected problems of state and local government and inter-governmental relations. May be repeated with new content to a maximum of six units with consent of graduate adviser.

260. Planning and Public Policy (3)

Prerequisites: Appropriate undergraduate courses in planning, political science, or related fields.

Relationship of the planning process to governmental policies and administration. Examination of social, political, and administrative problems involved in planning governmental programs and community facilities.

270. Seminar in International Relations (3)

May be repeated with new content to a maximum of six units with consent of the graduate adviser.

272. Seminar in International Organization (3)

Prerequisite: Political Science 172.

Analysis of selected problems of international organization with special reference to those of the United Nations. Oral and written reports.

280. Seminar in Comparative Government (3)

May be repeated with new content to a maximum of six units with consent of the graduate adviser.

290. Bibliography (1)

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

291. Problem Analysis (3)

Analytical treatment of selected problems in political science. Review of methods for investigation and reporting of data. Consideration of problems in preparation of project or thesis.

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 the instructor.

298. Special Study (1-6)

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.

Guidance in the preparation of a project or thesis for the master's degree.

PSYCHOLOGY

GENERAL INFORMATION

The Department of Psychology, in the Division of the Life Sciences, offers graduate study leading to the Master of Arts degree in general 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 College. Students who wish to prepare for employment in psychology upon completion of the master's degree program should consider one of the three concentrations offered in the Master of Science degree described below.

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 General Hospital, the San Diego Day Treatment Center, the Child Guidance Clinic of San Diego, and in the Guidance Department of the San Diego City Schools. Opportunities for experience in industrial-personnel 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 also have:

- 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 work in general psychology, physiological psychology, statistical methods, psychological testing, theories of personality, and at least two courses in laboratory psychology. At San Diego State College, these specific course requirements are met by Psychology 40, 50, 70, 105, 110, 178, and either 111, or 112, or 113.
- A grade point average of not less than 3.0 in the last 60 units of his undergraduate program.
- 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 as described in Part Three of this bulletin, the student must complete a graduate program of at least 30 units approved by the departmental graduate adviser.

Psychology 170, 175, and 177, or their equivalents, are required in the graduate program if they were not a part of the student's undergraduate work. All students who have completed at least 24 upper division semester units in psychology must complete Psychology 202A or 202B their first graduate semester, and the alternate half of the course their second semester. Classified graduate standing is not required for 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 written consent of the instructor of the course and approval by the graduate adviser and the Dean of Graduate Studies.

Psychology 299, Thesis, is required in all master's degree programs. There is no foreign language requirement for any advanced degree in psychology at San Diego State College, but students who aspire to a doctorate in this field would be well advised to develop competence in French, German, or Russian since most doctoral programs require candidates to be able to translate publications in two of these languages.

SPECIFIC REQUIREMENTS FOR THE MASTER OF ARTS DEGREE

Within the 30 unit general requirement set forth above, the Master of Arts program requires completion of at least 21 units of approved upper division or graduate courses in psychology including Psychology 202A, 202B, 222, 223, and 299 and at least nine units of approved upper division or graduate courses in a field or fields related to psychology.

SPECIFIC REQUIREMENTS FOR THE MASTER OF SCIENCE DEGREE

Within the 30 unit general requirement set forth above, the Master of Science degree may be obtained with the following three concentrations:

(1) **Clinical Psychology:** At least 30 units of approved upper division or graduate courses in psychology, including Psychology 202A, 202B, 204, 211, 234, 296, and 299. Registration in Psychology 296, Directed Field Experience, is contingent upon prior cooperative arrangement by the student and the field agency in consultation with the Psychology Department Practicum Committee.

(2) **Industrial-Personnel Psychology:** At least 30 units of approved upper division or graduate courses in psychology, including Psychology 202A, 202B, 220, 223, 225, and either 296, 297, or 298.

(3) **General Psychology with the Junior College Teaching Credential:** At least 28 units of approved upper division or graduate courses in psychology, at least 9 units of which must be selected from Psychology 152, 204, 205, 222, 223, 224, 225, and 233. Psychology 296 is required but registration in the course is contingent upon prior cooperative arrangement as set forth above under Clinical Psychology. Psychology 202A and 202B are required; other requirements include the completion of an approved teaching minor and the completion of Education 201, 251, and 316. Education 201 is included among the 30 units required for the master's degree. Education 233, normally required in the credential program, is routinely waived for Junior College Teaching Credential candidates in the Department of Psychology, but completion of the course has proved to be advantageous to individual students. The combined Master of Science in Psychology-Junior College Teaching Credential program requires a minimum of 36 semester units.

TEACHING ASSISTANTSHIPS

Graduate teaching assistantships in psychology are available to a limited number of qualified students. Application blanks and further information may be obtained from the Chairman of the Department.

FACULTY

Chairman, Division of the Life Sciences: J. E. Crouch, Ph.D.

Chairman, Department of Psychology: W. R. Stevens, Ph.D.

Graduate Adviser: W. A. Hunrichs

Credential Adviser: W. D. Kinnon

Professors: H. B. Carlson, Ph.D.; L. O. Daniel, Ph.D.; R. C. Harrison, Ph.D.; O. J. Kaplan, Ph.D.; F. P. Leukel, Ph.D.; I. N. McCollom, Ed.D.; H. C. Peiffer, Jr., Ph.D.; D. M. Rumbaugh, Ph.D.; J. B. Sidowski, Ph.D.; W. C. Treat, Ph.D.; M. B. Turner, Ph.D.; Virginia W. Voeks, Ph.D.

Associate Professors: E. G. Aiken, Ph.D.; C. F. Dicken, Ph.D.; D. D. Dorfman, Ph.D.; R. G. Eason, Ph.D.; J. M. Grossberg, Ph.D.; W. A. Hunrichs, Ph.D.; W. D. Kinnon, Ph.D.; E. F. O'Day, Ph.D.; Robert Penn, Ph.D.; T. T. Psomas, Ph.D.; Evalyn F. Segal, Ph.D.; J. R. Smith, Ph.D.; W. R. Stevens, Ph.D.

Assistant Professors: E. F. Alf, Ph.D.; Rosalind A. Feierabend, Ph.D.; P. S. Gallo, Jr., Ph.D.; W. A. Hillix, Ph.D.; W. J. Hudspeth, M.A.; Chizuko Izawa, Ph.D.; R. L. Karen, Ph.D.; B. Z. Karmel, M.S.; Norman Kass, Ph.D.; J. W. Koppman, Ph.D.; J. R. Levine, Ph.D.; Elizabeth Lynn, Ph.D.; R. D. McDonald, Ph.D.; C. E. Parker, M.A.; Margaret C. Sand, Ph.D.; J. M. Sattler, Ph.D.; R. H. Schulte, Ph.D.

Lecturers: Margaret L. Belloni, Ph.D.; L. C. Johnson, Ph.D.; W. V. Lockwood, Ph.D.; A. Lubin, Ph.D.; Margaret C. Sand, Ph.D.; M. M. Schorr, Ph.D.; C. T. White, Ph.D.; M. J. Zemlick, Ph.D.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN PSYCHOLOGY

UPPER DIVISION COURSES IN PSYCHOLOGY

- | | |
|---|--|
| 109. Mental Deficiency (3) | 150. Abnormal Psychology (3) |
| 110. Introduction to Experimental Psychology (4) | 151. Introduction to Clinical Appraisal (3) |
| 111. Experimental Psychology: Learning and Perception (4) | 152. Introduction to Methods of Counseling (3) |
| 112. Experimental Psychology: Personality and Social Behavior (4) | 153. Advanced Abnormal Psychology (3) |
| 113. Experimental Psychology: Comparative and Physiological (4) | 170. Advanced Statistics (3) |
| 121. Personnel and Industrial Psychology (3) | 175. Theories of Learning (3) |
| 122. Public Opinion Measurement (3) | 176. Principles and Practice of Personnel Training (3) |
| 123. Organizational Psychology (3) | 177. History of Psychology (3) |
| 124. Engineering Psychology (3) | 178. Theories of Personality (3) |
| 141. Neural Bases of Behavior (3) | 179. Philosophical Issues in Psychology (3) |
| 142. Physiological Psychology (3) | |

GRADUATE COURSES

200. Seminar (3)

Prerequisite: 24 upper division units of psychology or consent of instructor.

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

201. Seminar (3)

Prerequisite: 24 units in psychology, which may include educational psychology courses in the Education Department.

A review, integration, and supplementation of the student's knowledge of psychology.

202A-202B. Contemporary Psychology (3-3)

Prerequisite: Bachelor's degree in psychology or permission of the coordinating instructor.

A comprehensive survey of contemporary literature in psychology, dealing with recent developments in the areas of learning and motivation, perception, psychophysiology, personality and psychodynamics, social behavior, and experimental inference.

204. Individual Psychological Testing (4)

Two lecture and six hours of laboratory.

Prerequisite: Psychology 70 and 105.

Principles of individual testing. Instruction and practice in the administration and scoring of the Stanford-Binet, Wechsler scales, and some similar tests.

205. Advanced Mental Testing (4)

Two hours of lecture and six hours of laboratory.

Prerequisites: Psychology 151 and 204.

The theory of mental testing and a comprehensive survey of various verbal and nonverbal individual mental tests. Supervised administration, scoring and interpretation of some individual psychological tests. Tests other than the Wechsler scales and the Stanford-Binet are stressed.

211. Advanced Clinical Psychology (3)

Prerequisites: Psychology 151, 152, and 204.

Seminar integrating psychological testing, counseling, and clinical research. Includes supervised laboratory experience in counseling and in integrating data involved in clinical cases. Two hours of lecture and three hours of laboratory.

220. Seminar in Human Relations in Industry (3)

Prerequisite: Psychology 121 or Business Administration 145.

Applications of psychological principles and methods of investigation to problems of industrial relations and motivation of employees; factors influencing morale and employee productivity; criteria of job proficiency; psychological aspects of worker-management relationships and leadership.

221. Seminar in Problems in Social Psychology (3)

Prerequisites: Psychology 145, 110, and 175; or consent of the instructor.

Factors influencing the formation of attitudes, opinions, and stereotypes; the establishment of roles during socialization of the individual; social crises, change, and resistance to change; the causes and alleviation of interpersonal conflict.

222. Seminar in Theoretical Psychology (3)

Prerequisites: Psychology 175 and 178.

Basic concepts and principles integrating information in the areas of learning, emotion, motivation, personality, and social interaction. Relationships of scientific methods to the formation and testing of hypotheses and other conceptualizations.

223. Experimental Design (3)

Prerequisites: Psychology 170 and 110.

Principles and methods of planning and carrying out systematic investigations to answer questions concerning human behavior with stress on the interdependence of experimental design and statistical evaluation of results. Practice in formulation of testable hypotheses, techniques of equating groups, solution of sampling problems, and interpretation of results.

224. Advanced Experimental (3)

One lecture and six hours of laboratory.

Prerequisite: Psychology 223.

Methods, techniques, and apparatus applicable to questions of various types. Special attention is given to sources of error, limitations on interpretations, and psychophysical methods. Students will design and carry out experiments in preparation for original independent investigations.

225. Principles of Test Construction (3)

Prerequisites: Psychology 170 and 105.

Detailed consideration of adequate sampling techniques, item construction, item analysis, determination and enhancement of reliability and validity of tests.

231. Seminar in Ethology and Comparative Psychology (2)
(Same course as Biology 231)

Prerequisite: Psychology 113 or Biology 110, or consent of instructor.

A seminar in the types of species, specific behavior patterns, and their function in the living systems of animals. May be repeated with new content to a maximum of four units.

233. Counseling and Psychotherapy Laboratory (4)

Two lectures and six hours of laboratory.

Prerequisites: Psychology 110, 151, 152, 175, and 178, or consent of instructor.

Supervised research and practice in interpersonal encounter, with emphasis on the attainment of personality change.

234. Projective Psychology (3)

Prerequisites: Psychology 151, 178, and 204.

Introduction to the theory and principles underlying use of projective techniques by clinical psychologists; a review of the structure and dynamics of personality as interpreted by projective devices.

235. The Rorschach Method (3)

Prerequisite: Psychology 234.

A seminar and practicum in basic administration and scoring of the Rorschach Test, with critical appraisal of the problems involved in estimations of reliability and validity of this technique.

236. Interpretation of Projective Materials (3)

Prerequisite: Psychology 235.

A seminar in the clinical interpretation of the Rorschach Test, the Thematic Apperception Test, and other projective devices, with critical emphasis on methods of research and validation. Not acceptable for credit toward the M.S. degree in psychology.

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.

296. Directed Field Experience (3)

Prerequisite: Limited to classified graduate students in psychology, with appropriate qualifications in a field of professional skill.

The student must arrange his practicum setting in co-operation with the chairman of the Psychology Department Practicum Committee and with the express approval of that committee during the semester prior to enrolling for credit in this course.

297. Research (1-6)

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

298. Special Study (1-6)

Prerequisite: Consent of instructor.

Individual projects involving library research in physiological, industrial, learning, clinical, and other areas of experimental psychology. Maximum credit six units.

299. Thesis (3)

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

Guidance in the 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.

SOCIAL SCIENCE

GENERAL INFORMATION

The Division of Social Sciences offers graduate work leading to the Master of Arts degree for teaching service in social science with concentrations in the fields of anthropology, economics, geography, political science, and sociology. (The Master of Arts Degree with majors in anthropology, economics, geography, history, political science, and sociology is 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 which they plan to emphasize. For an emphasis 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 an emphasis in geography, the student must have completed Geography 1 and 3, 2 or 60, and 15 units of upper division courses in geography, including 100, 101, 180, and 181A. In addition he may be required to schedule a diagnostic written and oral examination with the chairman of the Department of Geography on the first day of registration week. For an emphasis 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 FOR TEACHING SERVICE

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 18 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 12 units of 200-numbered courses in the social sciences.
2. An emphasis in one of the areas of social science, except history, as determined by the graduate adviser.
3. Course 299, Thesis, is required in all concentrations. In addition the following courses are required in the concentrations specified:
Geography: Geog. 295, Geographic Research and Techniques of Presentation (3)
Political Science: Pol. Sci. 200, The Scope and Method of Political Science

FACULTY

Chairman, Division of the Social Sciences: D. S. Milne, Ph.D.

Graduate Adviser: D. S. Milne

General Secondary Credential Adviser: 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.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN SOCIAL SCIENCE

Refer to course listings in the sections of this bulletin under the Departments of Anthropology, Economics, Geography, History, Political Science, and Sociology. In addition other courses in the social sciences may be accepted on master's degree programs provided that no course required for the undergraduate major in one of the foregoing fields may be included in the degree program in that same field of concentration.

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 its Accreditation Commission and accreditation of the curriculum is expected within the two-year period required.

The objectives of the School of Social Work at San Diego State College are to equip students with the essential knowledge, philosophy and basic skills for their responsible entry into the profession of social work. In order to achieve these objectives, the School will assist students: to develop a philosophy which recognizes individual human welfare as the purpose and goal of social policy; to acquire attitudes which will permit the development and maintenance of professional relationships and professional standards; to develop the discipline and self-awareness essential to the professional social worker; and to attain a level of competence necessary for beginning professional practice and to accept responsibility for the continued development of their competence in the practice of one or more social work methods.

To meet these objectives, the graduate curriculum in the School of Social Work offers a two-year program of classroom and field instruction which includes course content in the following three major areas:

1. **Social Welfare Policy and Services.** Social welfare policy and services; their development, organization and operation; the purpose and status of current programs; the influence of social, economic and political factors; the role of the social worker in evaluation and improvement of existing programs with reference to the philosophy of social work; and the assessment of unmet needs and their resolution.
2. **Human Behavior and the Social Environment.** Normal growth and development of the individual from childhood through old age within the social contexts of the family, group relationships, occupational settings, and community structures; the nature and causes of impaired social and emotional functioning; the nature and changing character of social and cultural structures with attention to the interaction between the individual and his social environment and the reciprocal effects of the interaction.
3. **Methods of Social Work Practice.** Objectives, general theory, basic principles and values and ethics of the profession in the application of social work methods; the first-year sequence is the same for all students and covers the fundamentals of practice; in the second year, there is concentration and intensive study of: intervention with individuals, families, and groups, or intervention with organizations and communities; appropriate attention to the enabling methods of research and administration.

APPLICATION FOR ADMISSION

In seeking tentative admission to the program leading to the Master of Social Work degree, the student should write directly to the Dean of the School of Social Work requesting appropriate application materials. Detailed instructions concerning application procedures will be sent to the applicant along with all necessary forms.

Applications for tentative admission are accepted only for the fall semester and must be received by the Dean of the School of Social Work by April 30.

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 the College 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 degree must:

1. Be admitted to the College 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 to the College.)
2. Be admitted to the Graduate Division of San Diego State College and to the School of Social Work. Requirements for admission to the Graduate Division (which include the completion of the Graduate Record Examination Aptitude Test) are stated in Part Three of this bulletin under Admission of Graduate Students to the Graduate Division. Requirements for admission to the School of Social Work are listed below.

SPECIFIC REQUIREMENTS FOR ADMISSION TO THE SCHOOL OF SOCIAL WORK

In addition to satisfying the requirements for admission to the Graduate Division of San Diego State College, a student seeking admission to the School of Social Work must:

1. Have earned not less than a 2.5 grade point average on the undergraduate work taken for the baccalaureate degree. Desirable undergraduate preparation should include work in the behavioral and socio-humanistic studies and in statistics.
2. Submit a written personal history in the manner prescribed by the School of Social Work.
3. Be considered by references to be capable of graduate study and of developing professional responsibility. Such references may be secured from the student or otherwise obtained by the faculty.
4. Possess a personality judged suitable for the profession.
5. Arrange for a personal interview when so requested by the School.

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. Admission to the second year of the program constitutes advancement to candidacy. To be eligible for advancement to candidacy, the student must:

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-eight 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 College.
 - b. All transfer credits accepted for the degree must have been earned in a school of social work accredited by, or in the process of being accredited by, the Council on Social Work Education. Normally, a student who wishes to transfer credit earned in such a school of social work must have completed the requirements of that school for the first full academic year of graduate study.
2. Credits earned more than five years prior to the date of admission to the School of Social Work at San Diego State College 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. 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.
4. 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.

WITHDRAWALS

Students in the School of Social Work are governed by the general regulations of the College and the Graduate Division. For regulations governing withdrawals from courses, unofficial withdrawals, and probation and disqualification from the College, see the section entitled "Regulations of the Graduate Division" in Part Three of this bulletin.

Any graduate student who has been admitted to the curriculum offered in the School of Social Work and whose performance therein is judged to be unsatisfactory with respect to scholastic, personal or professional standards by the faculty of the School of Social Work and the Graduate Council, may be required to withdraw from all graduate curricula in the College. The standing of students so withdrawn will change from classified to unclassified.

PROBATIONARY ADMISSION

Students admitted to the College 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 and Professional 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 usually continues on the regular work schedule of the agency unless special circumstances require that other arrangements be made.

FACULTY

Dean, School of Social Work: Ernest F. Witte, Ph.D.

Professors: Jean M. Maxwell, M.S.S.; Robert Ontell, D.S.W.; Jack Stumpf, M.S.W.; Georgia M. Travis, M.A.

Associate Professors: C. J. Guzzetta, Ed.D.; Ann J. Harper, M.S.W.; Maude von P. Kemp, M.A.; W. F. Lee, M.S.W.; I. B. Tebor, Ph.D.

Assistant Professors: Howard Goldstein, M.S.W.; Marjorie M. Lee, M.S.W.; M. L. Murphy, M.A.

Lecturers: Grace E. Andresen, M.S.W.; Lois Barolet, M.S.; E. N. Brown, M.A.; Virginia Clary, M.S.W.; J. C. Coble, M.S.W.; Leonard DePew, M.S.W.; Ralph Dolgoff, M.S.S.; C. C. Heath, M.S.S.; Beverly Hunter, M.S.S.; B. J. Kelley, M.S.W.; David Kelly, M.S.W.; Lenore Kramer, M.S.S.; Miriam Lewis, M.S.W.; Ann Lucius, M.S.S.; Marian Miller, M.A.; J. L. Patton, M.S.W.; Paul Raymer, M.S.W.; Mary Lou Rogers, M.S.W.; Larry Schwartz, M.S.W.; Dorothy W. Sumner, M.S.W.; Madeleine Worcester, M.S.W.; Alejandro Ynigo, M.S.W.; Dorothy Yonemitsu, M.S.

COURSE REQUIREMENTS

The program of study normally required for all beginning first-year graduate students in the School of Social Work is as follows:

FIRST YEAR			
First Semester	Units	Second Semester	Units
Social Work 200	3	Social Work 201	3
Social Work 220	4	Social Work 221	3
Social Work 230	3	Social Work 231	3
Social Work 250	4	Social Work 251	4
Social Work 270	1	Social Work 290	2
	15		15

SECOND YEAR			
First Semester	Units	Second Semester	Units
Social Work 202	3	Social Work 205	2
Social Work 222	2	Social Work 271	1
Units chosen from:		Units chosen from:	
Social Work 232, 234	2	Social Work 233, 235	1
Units chosen from:		Units chosen from:	
Social Work 252, 255	6	Social Work 253, 256	6
Social Work 297A	1	Units chosen from:	
	14	Social Work 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 298	2
		Social Work 297B	2
			14

COURSE GROUPINGS

Social Work Methods: Fundamentals of Practice: 230, 231; Field Instruction: 250, 251

Social Work Methods: Intervention with Individuals and Groups: 232, 233; Field Instruction: 252, 253

Social Work Methods: Intervention with Organizations and Communities: 234, 235; Field Instruction: 255, 256

Elective Seminars: 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283

GRADUATE COURSES

Prerequisite for enrollment in all graduate courses: admission to the School of Social Work.

200. Social Welfare Policy and Services I (3) I

Social welfare as part of the social structure; analysis of major issues, problems, approaches, and possible solutions from historical, philosophical, and comparative points of view, with special examination of deprivation from whatever cause.

201. Social Welfare Policy and Services II (3) II

Prerequisite: Social Work 200.
Public and voluntary programs related to income maintenance, with special emphasis on the philosophy, methods, issues, and problems. Consideration of the

social insurances, public assistance, employment services, labor standards, and protective legislation.

202. Social Welfare Policy and Services III (3) I

Prerequisite: Social Work 201.

Public and voluntary programs related to other social welfare services and policy issues. Relationship between public and voluntary programs. Methods through which communities organize and maintain their social welfare services.

205. Social Work Administration I (2) II

Prerequisite: Social Work 202 or consent of the Dean.

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) I

Human beings as functioning organisms in society. Integration of knowledges of human behavior and social environment covering biological, psychological, and psycho-social process from birth to death for application in social work practice.

221. Human Behavior and Social Environment II (3) II

Prerequisite: Social Work 220.

Dynamic concepts of the interplay of the physiological as related to emotional, social, and cultural factors. Basic knowledge from medicine, sociology, psychology, cultural anthropology, and religion for use by the social worker in assisting people in their social functioning.

222. Human Behavior and Social Environment III (2) I

Prerequisite: Social Work 221.

Extension of Social Work 220 and 221. Understanding of the bio-social reasons people are unable to function up to self and societal expectations, and the role of social work in affecting change.

230. Social Work Practice I (3) I

Prerequisite: Concurrent registration in Social Work 250.

Principles of social work practice with individuals, families, groups, and communities. Attention is given to social work objectives, principles and skills.

231. Social Work Practice II (3) II

Prerequisites: Social Work 230 and concurrent registration in Social Work 251.

Principles of social work practice with individuals, families, groups, and communities with emphasis on refinement of skills of social study and social problem analysis. Attention to interactional and small group processes in determination of goals and change.

232. Social Work Practice III (2) I

Prerequisites: Social Work 231 and concurrent registration in Social Work 252.

Analysis of social work intervention to motivate individuals, families, and groups toward change and problem solving. The implications for practice of the physical, 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 (1) II

Prerequisites: Social Work 232 and concurrent registration in Social Work 253.

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) I

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 (1) II

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.

250. Field Instruction I (4) I

Prerequisite: Concurrent registration in Social Work 230.

Field instruction in a public or voluntary social work setting. Experiences are drawn upon in relation to classroom learning to emphasize application of social work objectives, principles and skills to services to individuals, families, groups, and communities.

251. Field Instruction II (4) II

Prerequisites: Social Work 250 and concurrent registration in Social Work 231.

Continuation of field instruction initiated in Social Work 250. Opportunities are provided for the application of social study and social problem analysis to experience with interactional and small group processes.

252. Field Instruction III: Individuals, Families, and Groups (4-6) I

Prerequisites: Social Work 251 and concurrent registration in Social Work 232.

Field instruction in a public or voluntary social work setting emphasizing a concentration on methods aimed at achieving change in or on behalf of individuals, families and groups representative of the social problem model or models of special interest to the student. Practice under educational direction at an advanced level.

253. Field Instruction IV: Individuals, Families, and Groups (4-6) II

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 the array of problem-solving methods in social work.

255. Field Instruction V: Social Policies, Organizations, and Communities (4-6) I

Prerequisites: Social Work 251 and concurrent registration in Social Work 234.

Field instruction in a public or voluntary social work setting emphasizing a concentration on methods aimed at achieving changes in social policies, organizations and communities usually centered around the social problem model or models of special interest to the student. Practice under educational direction at an advanced level.

256. Field Instruction VI: Social Policies, Organizations and Communities (4-6) II

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 implementation of change in social policies, organization and communities.

269. Supervision for Field Instructors I (2) I, II

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) I

Discussion of student experience in field instruction and its broader implications.

271. Seminar: Current Social Issues (1) I, II

Prerequisite: Advancement to candidacy.

Current developments and issues in contemporary society and their meaning for social work practice.

273. Seminar: Corrections (2) I, II

Prerequisite: Advancement to candidacy or consent of the Dean.

Programs dealing with juvenile and adult offenders with consideration of problems of incidence and prevention. Programs analyzed in regard to historical trends, legal base, and current issues, in a variety of settings.

274. Seminar: Services for the Aging (2) I, II

Prerequisite: Advancement to candidacy or consent of the Dean.

Analysis of longevity and the aging in contemporary society. Includes nature of aging process, retirement, family relationships, housing, income maintenance, protective service, and social welfare resources. Knowledge and skills needed to do social work with older people.

275. Seminar: International Social Services (2) I, II

Prerequisite: Advancement to candidacy or consent of the Dean.

International social work goals, methods, and services. Discussion of common social welfare problems, issues, and significant developments; the role of international agencies; the role of the social worker.

276. Seminar: Social Services for Families and Children (2) I, II

Prerequisite: Advancement to candidacy or consent of the Dean.

Analysis of programs offering social work services for families and children. Problems and issues in relating services to individual needs, community structure, values and resources; governmental and voluntary responsibilities and relationships, problems of administration; and the contribution of research.

277. Seminar: Community Development (2) I, II

Prerequisite: Advancement to candidacy or consent of the Dean.

Community development particularly in rural areas in newly economically developing countries. The nature, basic elements, and principles of community development, organization and program development; personnel and training; operational problems and issues.

278. Seminar: Group-Serving Agencies (2) I, II

Prerequisite: Advancement to candidacy or consent of the Dean.

Development of group-serving agencies and involvement of methods used to achieve purposes. Types of programs and variety of professions and disciplines used to achieve purposes and programs. Comparison of structures, membership philosophies, and types of services.

279. Seminar: Medical Social Work (2) I, II

Prerequisite: Advancement to candidacy or consent of the Dean.

Health and medical care programs concerned with prevention of illness, maintenance of health and/or treatment of illness and disability, governmental and non-governmental programs, institutions, and agencies. Collaboration of the social worker with other members of the medical care team.

280. Seminar: Psychiatric Social Work (2) I, II

Prerequisite: Advancement to candidacy or consent of the Dean.

Examination of services and programs designed to alleviate mental illness and restore mental health. Review of types and range of public and private programs and facilities. Role and function of the psychiatric social worker.

281. Seminar: School Social Work (2) I, II

Prerequisite: Advancement to candidacy or consent of the Dean.

Role of the social worker in collaboration with teachers and principals and other school staff in diagnosis and treatment of problems which interfere with children making maximum use of educational experience.

282. Seminar: Social Work and the Law (2) I, II

Prerequisite: Advancement to candidacy or consent of the Dean.

Basic concepts of jurisprudence and the function of the legal system as part of the community. Discussion of the common-law system and the case precedent;

structure and jurisdiction of courts, domestic relations, and criminal law. Specific aspects of law pertinent to social work orientation.

283. Seminar: Supervision in Social Work (2) I, II

Prerequisite: Advancement to candidacy or consent of the Dean.

The purpose, content, and methods of supervision with emphasis on the administrative and educational components of the supervisory process. Trends and issues in the practice of supervision and consultation.

290. Methods of Social Research (2) I, II

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.

297A-297B. Research (1-2) I, II

Prerequisite: Social Work 290.

Research in the field of social work and preparation of written report. Individual effort or group project.

298. Special Study (1-6)

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 Division of the Social Sciences, offers graduate work leading to the Master of Arts degree with a major in sociology. For graduate work in connection with the Master of Arts degree for teaching service with a concentration 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 with a major 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 13 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.

TEACHING ASSISTANTSHIPS

Graduate 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, Division of the Social Sciences: D. S. Milne, Ph.D.
Chairman, Department of Sociology: J. R. DeLora, Ph.D.
Graduate Adviser: N. N. Mouratides.
Professors: B. C. Kirby, Ph.D.; O. E. Klapp, Ph.D.; D. S. Milne, Ph.D.; Aubrey Wendling, Ph.D.
Associate Professors: M. J. Daniels, Ph.D.; J. R. DeLora, Ph.D.; D. S. Elliott, Ph.D.; N. N. Mouratides, Ph.D.; H. L. Voss, Ph.D.
Assistant Professors: R. C. Bower, M.A.; D. L. Dodge, Ph.D.; D. C. Johnson, Ph.D.; T. O. McJunkins, M.A.; J. T. Weber, M.A.; G. H. Weightman, Ph.D.; R. W. Winslow, Ph.D.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN SOCIOLOGY

UPPER DIVISION COURSES

- | | |
|---|--|
| 110. Social Disorganization (3) | 138. Sociology of Religion (3) |
| 113. Criminology and Penology (3) | 146. Collective Behavior (3) |
| 114. Juvenile Delinquency (3) | 148. Small Groups (3) |
| 116. Contemporary Correctional Administration (3) | 150. Population Problems (3) |
| 120. Industrial Sociology (3) | 151. Research Methods in Demography (3) |
| 121. Medical Sociology (3) | 157. Urban Sociology (3) |
| 123. Sociology of Mental Illness (3) | 160. Quantitative Methods in Social Research (3) |
| 124. Social Stratification (3) | 164. Methods of Social Research (3) |
| 125. Minority Group Relations (3) | 197. Investigation and Report (3) |
| 132. Formal Organization (3) | 199. Special Study (1-6) |
| 136. Sociology of the Family (3) | |

GRADUATE COURSES

200. Seminar in Social Theory (3)

Prerequisites: Sociology 101 and 164.

Advanced study of social theory, its modern formulations and historical development, with emphasis on individual research and report of findings. May be repeated with new content for additional credit. Six units maximum credit applicable toward a master's degree.

210. Seminar in Social Disorganization (3)

Prerequisites: Sociology 110 and 164.

Advance study of the processes which contribute to and maintain social and personal disorganization. The relationship of sociological factors, including urbanization, secularization and social change, to these processes, with emphasis on contemporary theory and research. May be repeated with new content for additional credit. Six units maximum credit applicable toward a master's degree.

220. Seminar in Social Organization (3)

Prerequisite: Sociology 164.

Analysis of the principal organizational forms of society and groups, in terms of their basic patterns, interrelations, organizational change, and the relation of the individual to social structure. Study of bureaucracy, consensus, formal and informal structure and function. May be repeated with new content for additional credit. Six units maximum credit applicable toward a master's degree.

230. Seminar in Social Institutions (3)

Prerequisite: Sociology 164.

Advanced study of institutional forms and processes, including the institutional bases of social mores. The effect of sociological factors, including cultural lag, on contemporary social institutions. May be repeated with new content for additional credit. Six units maximum credit applicable toward a master's degree.

240. Seminar in Social Interaction (3)

Prerequisites: Sociology 140 and 164.

Advanced study of social-psychological interaction, including sociological factors in personality development and analysis of morale, motivation, leadership and other elements of group behavior. May be repeated with new content for additional credit. Six units maximum credit applicable toward a master's degree.

250. Seminar in Human Ecology and Demography (3)

Prerequisites: Sociology 150 and 164.

Analysis of the sociological variables which influence distribution and composition of populations and social institutions, with special emphasis on urban social organization.

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.

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.

298. Special Study (1-6)

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.

Guidance in the preparation of a project or thesis for the master's degree.

SPANISH

GENERAL INFORMATION

The Department of Spanish and Portuguese, in the Division of the Humanities, offers graduate study leading to the Master of Arts degree with a major in Spanish.

The staff in charge of the graduate program in Spanish is composed of professors whose native tongue is Spanish, or who have studied and traveled extensively in Spain or in Spanish America, enabling them to represent authoritatively the Spanish language and culture. Library facilities include rich resources in Spanish literature and linguistics, including books, periodicals and newspapers. A foreign language laboratory with modern equipment is available to both graduate and undergraduate students.

ADMISSION TO 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 Spanish, including 24 upper division units, must have been completed, at least six units of which must have been in a survey course in Spanish literature.

ADVANCEMENT TO CANDIDACY

In addition to meeting the requirements for advancement to candidacy as described in Part Three of this bulletin, students may be required to pass a qualifying examination in Spanish given by the Department of Spanish and Portuguese.

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 Spanish including Spanish 201, 202, 203, 204 or 205, 290, and 294 or 299.

REQUIREMENTS FOR TEACHING CREDENTIALS

Students who plan to earn a standard teaching credential as well as the master's degree in Spanish will normally follow Plan B, which includes Spanish 294 and the passing of a comprehensive examination in lieu of the thesis.

TEACHING ASSISTANTSHIPS

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

FACULTY

Chairman, Division of the Humanities: J. R. Adams, Ph.D.

Chairman, Department of Spanish and Portuguese: C. H. Baker, Ph.D.

Graduate Adviser: C. H. Baker

Credential Adviser: C. H. Baker

Professor: C. H. Baker, Ph.D.

Associate Professors: T. E. Case, Ph.D.; George Lemus, Ph.D.

Assistant Professors: J. D. Dandliker, M.A.; Zelda I. Hawes, M.A.; G. L. Head, Ph.D.; Florence H. Sender, M.A.; J. D. Smith, Ph.D.; J. L. Walsh, Ph.D.; Florence I. Williams, Ph.D.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN SPANISH

UPPER DIVISION COURSES

103A-103B. The Literature of the Spanish Golden Age (3-3)

104A-104B. Spanish-American Literature (3-3)

105A-105B. Modern Spanish Drama (3-3)

- 106A-106B. Mexican Literature (3-3)
 110A-110B. Novel and Short Story in Spain (3-3)
 150. Phonetics and Phonemics (3)

Related Fields: Related courses in the fields of anthropology, geography, history, political science, comparative literature, and others, may be selected with the approval of the graduate adviser.

GRADUATE COURSES

201. History of the Spanish Language (3)

Prerequisite: 18 units of upper division Spanish, including credit or concurrent enrollment in Spanish 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)

Prerequisite: 18 units of upper division Spanish.

A study of the principal prose works of Cervantes: the *Novelas ejemplares* and *Don Quixote*.

203. Lope de Vega (3)

Prerequisite: 18 units of upper division Spanish.

The development and importance of Lope de Vega and his school, concentrating on the historical plays and dramas of *capa y espada*.

204. The Spanish-American Novel (3)

Prerequisite: 18 units of upper division Spanish.

A study of some aspect of the Spanish-American novel.

205. The Gaucho Epic (3)

Prerequisite: 18 units of upper division Spanish.

The *Poesía gauchesca*, with particular emphasis on *Martín Fierro*, *Fausto*, and *Santos Vega*. (Formerly entitled: Spanish-American Poetry.)

206. Modernism (3)

Prerequisite: 18 units of upper division Spanish.

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*.

290. Research and Bibliography (2)

Prerequisite: 18 units of upper division Spanish.

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 Spanish and 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 (1-6)

Prerequisites: 18 units of upper division Spanish 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.

Guidance in the preparation of a project or thesis for the master's degree.

SPEECH ARTS

GENERAL INFORMATION

The Department of Speech Arts, in the Division of the Fine Arts, offers graduate study leading to the Master of Arts degree with a major in speech arts and to the Master of Arts degree for teaching service with a concentration in speech arts. The department offers advanced study in the areas of rhetoric and public address, interpretation, speech and hearing pathology, theater, radio and television broadcasting. Greatly improved facilities now in use in the speech building and theater include a two-studio plant fully equipped for radio and television production, and modern speech and hearing facilities in the clinical training center in the Education Building. The Department of Speech Arts operates KEBS(FM), and maintains a television production center for the origination and syndication of ETV programs; the entire operation provides broadcast 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 with a major in speech arts are required to complete the required diagnostic examination and Speech Arts 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 a major consisting of at least 24 units from courses listed below as acceptable on master's degree programs in speech arts of which at least 12 units must be in 200-numbered courses. Speech Arts 200, Research and Bibliography, and Speech Arts 299, Thesis, are required courses.

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 speech arts of which at least 12 units must be in 200-numbered courses. Speech Arts 200, Research and Bibliography and Speech Arts 299, Thesis, are required courses.

TEACHING ASSISTANTSHIPS

Graduate teaching assistantships in Speech Arts are available to a limited number of qualified students. Application blanks and further information may be obtained from the Department Chairman.

FACULTY

Chairman, Division of the Fine Arts: G. N. Sorenson, M.A.
 Chairman, Department of Speech Arts: R. L. Benjamin, Ph.D.
 Graduate Adviser: Jack Mills
 Credential Adviser: W. J. Adams

Speech and Hearing Credential Adviser: Sue Earnest

Professors: J. W. Ackley, Ph.D.; W. J. Adams, Ph.D.; R. L. Benjamin, Ph.D.; Sue W. Earnest, Ph.D.; K. K. Jones, Jr., M.A.; Jack Mills, Ph.D.; P. L. Pfaff, Ph.D.; E. K. Povenmire, M.F.A.; D. W. Powell, M.F.A.; H. D. Sellman, M.S.

Associate Professors: R. E. Lee, M.A.; F. W. Norwood, M.A.; T. D. Skinner, Ph.D.

Assistant Professors: Kjell Amble, Ph.D.; R. A. Harris, M.A.; K. C. Jameson, M.A.; P. R. Mattox, M.A.; A. C. Nichols, Ph.D.; R. M. Riedman, Ph.D.; Phyllis N. Rogers, M.A.; L. A. Samovar, Ph.D.; C. E. Stephenson, Ph.D.; Robert Strane, M.F.A.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN SPEECH ARTS

UPPER DIVISION COURSES

- | | |
|--|---|
| 108. Advanced Interpretation (3) | 175. Hearing Amplification (3) |
| 116. Theatre Criticism (3) | 176. Stuttering and Neurological Disorders (3) |
| 118A. Play Analysis (3) | 177. Audiology (3) |
| 118B. Playwriting (3) | 178. The Teaching of Lip Reading (3) |
| 130. Semantics (3) | 179A-179B. Clinical Methods in Speech Correction (2-2) |
| 135. Theories of Human Communication (3) | 180A. Field Work in Clinical Practice in Speech Correction (1 or 2) * |
| 140A-140B. Scene Design for Stage and Television (3-3) | 180B. Field Work in Clinical Practice in Hearing Problems (1 or 2) * |
| 145. Stage and Television Lighting (3) | 181. Broadcast Management (3) |
| 152. History and Design of Costume (Stage) (3) | 182. Advanced Lighting and Staging for Television (4) |
| 154A-154B. History of the Theater (3-3) | 183. Advanced Programming and Development for Broadcasting (4) |
| 155. Advanced Acting (3) | 184. Advanced Broadcast Directing (4) |
| 156. Advanced Dramatic Production (3) | 185. Educational Broadcasting (3) |
| 159. Stage Direction (3) | 186. Writing and Producing for Broadcasting and Film (3) |
| 162. Advanced Argumentation (3) | 190. Rhetorical Theory (3) |
| 164. Verse Choir Directing (2 or 3) | 191. Organized Discussion (3) |
| 167. Motion Picture Techniques (3) | 192A. Advanced Public Speaking (3) |
| 168. Film Production (4) | 192B. Oral Persuasion (3) |
| 171A-171B. Audiometry (3-3) | 193. Mass Persuasion (3) |
| 172. Mechanics of Speech Production (3) | 198. Selected Topics in Speech Arts (1-3) # |
| 173. Functional Problems of Speech and Hearing (3) | 199. Special Study (1-6) |
| 174. Principles and Methods of Speech Correction (3) | |

* Not more than three units from Speech Arts 180A-180B are acceptable on master's degree programs in Speech Arts.

Not more than three units of Speech Arts 198 are acceptable on master's degree programs in Speech Arts.

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.
208. Seminar in Oral Interpretation (3)
Prerequisite: Speech Arts 108 or equivalent.
Aesthetic discipline applied to oral interpretation of various forms of literature. Analysis of thought and emotional content, and aesthetic form. Investigation of advanced problems of delivery. May be repeated once with new content for a maximum of six units.

243. Seminar in Staging Practices for Theater and Television (3)

An investigation of the recent developments of modern staging facilities. The application of technological advances and electro-mechanical devices to the scenic arts for theater and television.

244. Seminar in Stage Direction (3)

Prerequisite: Speech Arts 159.

Projects in the aesthetic principles and the practices of stage direction with an emphasis on styles and historical periods.

245. Seminar in Lighting for Stage and Television (3)

Prerequisite: Speech Arts 145.

Projects concerned with the aesthetic and the technical problems of lighting in stage and television.

246. Seminar in Design for Stage and Television (3)

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

A. Costume Design

Prerequisite: Speech Arts 152.

B. Scenery Design

Prerequisites: Speech Arts 140A, 140B, and 156.

247. Seminar in History of Theater and Drama (3)

Prerequisites: Speech Arts 154A, 154B, and 118A.

Each section may be taken once for credit.

A. British and Continental Theater

B. American Theater

262. Seminar in Argumentation (3)

Prerequisite: Speech Arts 162.

Significant topics in argumentation: the formulation of problems for argument; analysis; the brief with patterns of argument, traditional and recent; presumption; probability; laws of evidence; fallacies.

271. Problems of Aphasia (3)

Prerequisites: Speech Arts 170, 172, 176, or consent of instructor.

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.

272. Problems of Cerebral Palsy (3)

Prerequisites: Speech Arts 170, 172, 174, or consent of instructor.

Principles of evaluation, theories of treatment and therapy for persons with speech disorders in cerebral palsy. Evaluation of current research in cerebral palsy.

273. Problems of Cleft Palate (3)

Prerequisites: Speech Arts 170, 172, 174.

Principles of diagnosis and therapy for persons with cleft palate speech problems. Evaluation of current research in this area.

274. Problems of Stuttering (3)

Prerequisites: Speech Arts 170, 173, 176.

Principles of evaluation of theories, individual and group therapy for child and adult stutterer; evaluation of current research in this area.

275. Problems of Voice Pathology (3)

Prerequisites: Speech Arts 170, 172, 174, 276.

Structural, medical and functional voice problems. Diagnosis, theories and therapy for vocal problems. Evaluation of current research.

276. Voice Science (3)

Prerequisite: Speech Arts 172.

Relationship of basic principles of sound to the speech mechanism. Analysis of speech sound production. Application of mechanical and electronic equipment to speech.

277. Audiology Seminar (3)

Prerequisites: Speech Arts 171A, 171B, 177.

Major experimental research in physiological and psycho-acoustical nature of hearing. Critical analysis of audiometric techniques used in differential diagnosis.

279. Advanced Diagnostic Methods in Speech Therapy (3)

Prerequisites: Speech Arts 180A (3), 179A, 179B.

Diagnosis of individuals with complicated speech problems as brain injury, congenital aphasia, adult aphasia, cerebral palsy, hearing loss, laryngectomy, mental retardation, stuttering and voice problems.

280A. Advanced Field Work in Clinical Practice in Speech Correction (1 or 2)

Prerequisites: Speech Arts 174 and 176.

Supervised work with representative advanced speech cases such as stuttering, aphasia, laryngectomies, etc. May be repeated for a maximum of four units, only two of which may be used for graduate credit on a master's degree.

280B. Advanced Field Work in Clinical Practice in Hearing Problems (1 or 2)

Prerequisites: Speech Arts 171, 177, and 178.

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). May be repeated to a maximum of four units, only two of which may be used for graduate credit on a master's degree.

282. Seminar in History of Broadcasting (3)

Prerequisite: the equivalent of an undergraduate major in broadcasting.

The development of broadcasting in its social, legislative, and economic settings, with emphasis upon broadcasting in the U.S.

283. Seminar in Broadcast Management (3)

Prerequisite: the equivalent of an undergraduate major in broadcasting, and Speech Arts 181.

Study of the legal and regulatory milieu of broadcasting from the perspective of station management.

284. Seminar in Programing and Production (3)

Prerequisite: the equivalent of an undergraduate major in broadcasting.

Theory and analysis of programing and production in broadcasting.

285. Seminar in Educational Broadcasting (3)

Prerequisite: the equivalent of an undergraduate major in broadcasting.

Study of educational, social, and economic role of noncommercial educational broadcasting in the U.S., primarily from the perspective of educational station management.

291. Seminar in Group Discussion Theory (3)

Prerequisite: Speech Arts 191.

A study of descriptive and experimental literature on group discussion covering such topics as interaction, leadership, and means of evaluation.

293. Seminar: Greek and Roman Public Address (3)

Prerequisites: Speech Arts 190 and 192A or 192B.

294. Seminar: 18th Century British Public Address (3)

Prerequisites: Speech Arts 190 and 192A or 192B.

295. Seminar: American Public Address—1700-1900 (3)

Prerequisites: Speech Arts 190 and 192A or 192B.

297. Seminar: Contemporary American Public Address (3)

Prerequisites: Speech Arts 190 and 192A or 192B.

298. Special Study (1-6)

Individual study. Six units maximum credit.

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

299. Thesis or Project (3)

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

Guidance in the 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 representative reference sources in the pure and applied sciences. Study of typical problems encountered in providing and servicing scientific reference materials.

231. Literature for Children (3)

Prerequisite: Library Science 118 or consent of instructor.

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 or consent of instructor.

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 literature, discussion of trends and observation of school situations together with the analysis and evaluation of actual problems. Written reports are required.

205. Park Management (3) (Alternate years)

Prerequisite: Recreation 165.

Fundamentals of general park maintenance. Principles of planning and development. Personnel and budget problems unique to park management. Coordination of activities with other public agencies.

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CATALOG
Educational Material