

GRADUATE DIVISION

**SAN  
DIEGO  
STATE  
COLLEGE**



**BULLETIN**

**1963  
1964**



BULLETIN OF THE GRADUATE DIVISION

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GRADUATE CURRICULA AT  
SAN DIEGO STATE COLLEGE

1963-1964

SAN DIEGO STATE COLLEGE  
SAN DIEGO 15, CALIFORNIA



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SAN DIEGO, CALIFORNIA

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## ACADEMIC CALENDAR

1963-1964

### FALL SEMESTER

July 15	Last day for graduate students to file application for admission to the College for the fall semester.
August 20	Graduate Record Examination Aptitude Test for master's degree applicants, 6:30-10:00 p.m., by appointment made prior to August 1, Test Office.
September 13	General Culture Test, 8:30 a.m.-12 m., by appointment, Test Office.
September 16	Opening date of the academic year.
September 16-20	Testing, advising, residency clearance, and registration week.
September 18-20	Registration, payment of fees, advising, and enrollment in classes.
September 21	Registration for classes meeting after 4:00 p.m.
September 23	First day of classes.
September 25	Graduate Record Examination Aptitude Test for master's degree applicants, 6:30-10:00 p.m., by appointment made prior to September 5, Test Office.
October 5	General Culture Test, 8:00-11:00 a.m., by appointment, Test Office.
October 7	Last day to apply for refunds.
October 11	Last day for withdrawal from classes without penalty for unsatisfactory work.
October 12	Graduate Record Examination Aptitude Test for master's degree applicants, 8:30 a.m.-12 m., by appointment made prior to September 22, Test Office.
November 9	End of seventh week of classes. Deficiency notices due.
November 11	Holiday—Veterans Day.
November 22	Last day of withdrawal from classes or changes in registration.
November 28-30	Thanksgiving recess.
December 14	Last day of classes before Christmas recess.
December 15	Last day for graduate students to file application for admission to the College for the spring semester.
December 16- January 1	Christmas recess.
January 2	Classes resume.
January 3	Last day to apply for mid-year graduation with the master's degree, Graduate Office.
January 8	Last day for a complete withdrawal from the College.
January 22	First day of final examinations.
January 31	Last day of the fall semester.



## ACADEMIC CALENDAR

### SPRING SEMESTER

January 30	Graduate Record Examination Aptitude Test for master's degree applicants, 6:30-10:00 p.m., by appointment made prior to December 18, Test Office.
February 3-7	Testing, advising, residency clearance, and registration week.
February 3	First day, second semester, academic year.
February 4	General Culture Test, 8:00-11:00 a.m., by appointment, Test Office.
February 5-7	Registration, payment of fees, advising, and enrollment in classes.
February 8	Registration for classes meeting after 4:00 p.m.
February 10	First day of classes.
February 12	Holiday—Lincoln's Birthday.
February 22	Holiday—Washington's Birthday.
February 24	Last day to apply for refunds.
February 27	Last day of withdrawal from class without penalty for unsatisfactory work.
February 29	Graduate Record Examination Aptitude Test for master's degree applicants, 8:30 a.m.-12 m., by appointment made prior to February 7, Test Office.
March 14	General Culture Test, 8:00 a.m.-12 m., by appointment, Test Office.
March 17	Graduate Record Examination Aptitude Test for master's degree applicants, 8:30 p.m.-10:00 p.m., by appointment made prior to February 25, Test Office.
March 21	Last day of classes before spring recess.
March 23-28	Spring recess.
March 30	Classes resume.
April 4	End of seventh week of classes. Deficiency notices due.
April 10	Last day of withdrawal from classes or changes in registration.
April 27	Last day to apply for June or summer graduation with the master's degree, Graduate Office.
May 19	Last day for a complete withdrawal from the College.
May 29	Last day for depositing completed bound theses at Graduate Office for June graduation.
May 30	Holiday—Memorial Day.
June 2	Last day of classes before final examinations.
June 3	First day of final examinations.
June 12	Commencement. Last day of the spring semester.

### 1963 SUMMER SESSIONS

June 10-21	Intersession (2 weeks).
June 24- August 2	Term I Summer Session (6 weeks).
August 2	Final date for depositing completed bound theses at Graduate Office for summer graduation.
August 5-23	Term II Summer Session (3 weeks).

### 1964 SUMMER SESSIONS

June 15-26	Intersession (2 weeks).
June 29- August 7	Term I Summer Session (6 weeks).
August 7	Final date for depositing completed bound theses at Graduate Office for summer graduation.
August 10-28	Term II Summer Session (3 weeks).

## FEES

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

### FEES PAYABLE AT TIME OF REGISTRATION

<b>Fees for more than six units:</b>	
Materials and service	\$38.00
Student activity fee	8.00
Auditors pay same fees as students carrying courses for credit.	
<b>Total required fees</b>	<b>\$46.00</b>

<b>Fees for six units or less:</b>	
Materials and service	19.50
Auditors pay same fees as students carrying courses for credit.	

<b>Tuition for nonresident student:</b>	
(In addition to materials and service and activity fees)	
Nonresident student enrolled for 15 units or more	250.00
Nonresident student enrolled for less than 15 units, or fraction thereof (per unit)	17.00
(For fee-paying purposes, zero unit courses are counted as one unit.)	

<b>Tuition for foreign student (citizen and resident of a foreign country):</b>	
(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
(For fee-paying purposes, zero unit courses are counted as one unit.)	

<b>Parking Fees:</b>	
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	3.50
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) \$11.50
Activity fee (required):	
Term I	2.00
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 law without advance notice.

# **PART ONE** **BOARD OF TRUSTEES OF THE CALIFORNIA STATE COLLEGES**

2930 West Imperial Highway  
INGLEWOOD, CALIFORNIA

## **EX OFFICIO MEMBERS**

Edmund G. Brown, LL.B., Governor of California and President of the Trustees	Sacramento
Glenn M. Anderson, A.B., Lieutenant Governor of California	Sacramento
Jesse M. Unruh, B.A., Speaker of the Assembly	Sacramento
Max Rafferty, Jr., B.A., M.A., Ed.D., State Superintendent of Public Instruction	Sacramento
Glenn S. Dumke, A.B., M.A., Ph.D., LL.D., L.H.D., Chancellor, California State Colleges	Inglewood

## **APPOINTED MEMBERS**

Gregson Bautzer, B.A., LL.B.	Beverly Hills
John E. Carr, B.A.	Newport Beach
William K. Coblentz, A.B., LL.B.	San Francisco
Mrs. Philip Conley, B.A.	Fresno
Donald M. Hart, B.A.	Bakersfield
George D. Hart, A.B.	San Francisco
Louis H. Heilbron, A.B., LL.B., LL.D.	San Francisco
Charles Luckman, LL.D., A.F.D.	Los Angeles
Theodore Meriam, A.B.	Chico
Thomas L. Pitts	San Francisco
Daniel H. Ridder, B.A.	Long Beach
Albert J. Ruffo, LL.B., B.S. in E.E.	San Jose
Paul Spencer, B.A.	San Dimas
Allen J. Sutherland, A.B.	San Diego
George A. Thatcher	Inglewood
E. Guy Warren, B.A.	Hayward

## **OFFICERS OF THE TRUSTEES**

Edmund G. Brown, Governor, President	Sacramento
Louis H. Heilbron, Chairman	San Francisco
Allen J. Sutherland, Vice Chairman	San Diego
Glenn S. Dumke, Chancellor, Secretary-Treasurer	Inglewood



## OFFICE OF THE CHANCELLOR OF THE CALIFORNIA STATE COLLEGES

2930 West Imperial Highway  
INGLEWOOD, CALIFORNIA

Chancellor	Glenn S. Dumke
Vice Chancellor	Don M. Muchmore
Vice Chancellor, Academic Affairs	Raymond A. Rydell
Vice Chancellor, Business Affairs	John F. Richardson
Assistant Chancellor, Faculty and Staff Affairs	C. Mansel Keene

## THE CALIFORNIA STATE COLLEGES

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

Spanning the state from Humboldt County in the north to San Diego in the south, the 16 campuses of the California State Colleges (with two additional campuses in the planning stage) represent the largest system of public higher education in the Western Hemisphere and one of the largest in the world. Current enrollment is some 118,000 full and part-time students. The faculty and administrative staff numbers some 7,000.

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.

The California State Colleges are dedicated to rigorous academic standards. Constant striving for academic excellence is at the heart of the system. Each faculty within the system is a 'teaching faculty' whose primary responsibility 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.

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, nine new campuses have been developed and two more are scheduled to begin operation within the next three years. Enrollment in the system is expected to reach 180,000 by 1970.

## PART TWO

## SAN DIEGO STATE COLLEGE

### GENERAL INFORMATION

#### OFFICERS OF THE COLLEGE

President	Malcolm A. Love, Ph.D., LL.D.
Assistant to the President	Arvid T. Johnson, M.A.
Vice President	Ernest B. O'Bryne, Ph.D.
Publications and Public Relations Manager	Gordon F. Lee, M.S.
Executive Dean	Darrell C. Holmes, Ph.D.
Building Assistant	Clarence B. Cover, M.A.
Administrative Analyst	Marion L. Parker, M.A.
Dean of the College	Donald R. Watson, Ed.D.
Assistant to Dean of the College	Alfred E. White, Ed.D.
Curriculum Evaluator	John L. Schmidt, Ph.D.
Dean of Arts and Sciences	Sidney L. Gulick, Ph.D.
Dean of Graduate and Professional Studies	Maurice M. Lemme, Ph.D.
Coordinator of Graduate Studies	Clayton M. Gjerde, Ph.D.
Dean of Education and Extended Services	Manfred H. Schrupp, Ph.D.
Coordinator of Extended Services	Manville R. Petteys, Ed.D.
Coordinator of Audiovisual Services	James S. Kinder, Ph.D.
Coordinator of Summer Sessions	Marvin H. Platz, Ed.D.
College Librarian	Louis A. Kenney, Ph.D.
Secretary to the Faculty	Maurice L. Crawford, M.S.
Dean of Students	Herbert C. Peiffer, Jr., Ph.D.
Administrative Assistant	Alan S. Mishne, A.B.
Dean of Admissions and Records	Melvin A. Anderson, Ed.D.
Admissions Counselor	June Warren, M.A.
Registrar	Margaret L. Gilbert, A.B.
Dean of Counseling and Testing	Donald F. Harder, Ed.D.
Test Officer	Herman Roemmich, Ph.D.
Coordinator of Counseling	Earl F. Peisner, Ed.D.
Dean of Activities	Margery Ann Warmer, M.S.
Activities Adviser	Jack V. Daugherty, B.S.
Activities Adviser	Marjorie Wallace, M.A.
Director of Health Services	Frank O. Robertson, M.D.
Housing Coordinator	John M. Yarborough, Ed.D.
Placement Officer	William M. Kidwell, Ed.D.
Graduate Manager, Associated Students	Samuel D. Ritchey, Jr., B.S.
Business Manager	Selwyn C. Hartigan, A.B.
Accounting Officer	Donald G. Parker
Personnel Officer	Carey D. Folger
Chief of Maintenance	Timothy V. Hallahan, A.B.
Administrative Assistant	Carolyn E. Kessler
Business Services Officer	Lois W. Sisson
Housing Manager	Willard W. Trask



# SAN DIEGO STATE COLLEGE ADVISORY BOARD

Armistead B. Carter, Chairman	Harry E. Callaway	Mrs. Harley E. Knox
Burnet C. Wohlford, Vice Chairman	William D. Dufflock	John W. Quimby
E. Robert Anderson	Carl M. Esenoff	Robert J. Sullivan
	Frank A. Frye, Jr.	Orien W. Todd, Jr.
	Mrs. E. T. Hale	Dr. Harvey J. Urban

## Associate Members

Mrs. Gordon H. Sears	President, San Diego Branch, American Association of University Women
Mrs. Mark Owens	President, Ninth District, California Congress of Parents and Teachers
Judge Frank H. Nottbusch, Jr.	President, San Diego State Alumni Association

## THE COLLEGE

San Diego State College, founded in 1897, is one of the sixteen 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 campus of San Diego State lies 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, with an enrollment of more than 14,000 students, offers a four-year liberal arts course in over 50 major fields of study and graduate curricula leading to the master of arts and master of science degrees in 33 fields, with additional areas of concentration in many of these fields. Programs leading to teaching credentials authorizing teaching in the public schools of California from kindergarten through junior college are available.

## ACCREDITATION

San Diego State 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 an associate member of the National Association of Schools of Music.

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 750 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

The library contains 255,000 volumes (including government publications, reels of microfilm, bound periodicals and books) plus a curriculum collection of 11,000 textbooks, 7,000 standard tests, 28,000 pamphlets and curriculum guides, 12,000 college catalogs and 16,000 flat microfilms. It subscribes to more than 2,500 journals and newspapers, federal and United Nations documents, and is a depository for U. S. Government and California State publications.

Facilities for 2,200 readers are provided in the 125,000 square feet of floor space in the library. Typing rooms, microfilm and microcard reading rooms, a listening room, and individual study carrels are provided.

The Campus Laboratory School Library with a collection of 20,600 volumes provides ideal school library materials and services.

San Diego State College also has inter-library loan agreements with many specialized libraries in and near San Diego such as those at the U. S. Navy Elec-



tronics Laboratory, General Dynamics Corporation, General Atomics and Astronautics Divisions, Museum of Natural History, as well as with libraries at other colleges and universities.

### LIVING ACCOMMODATIONS

Two men's and three women's campus residence halls, each accommodating 200 students, will be available in September, 1963. 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 1963-1964, 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.

Physical examinations are required of and provided for all teacher education students at time of admission to and graduation from the various education credential programs. These examinations are furnished by the Health Services office only to those credential candidates who are applying for a state credential through the college, screened by the college.

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. Since the placement services rendered by the center are of importance to the graduate student, the following information is presented for this assistance.

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 national in scope. On the average, each candidate is interviewed by three to five concerns in the process of finding the position best suited to him. The 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.

The Graduate Division of San Diego State College began its operation in 1949 to offer a graduate program leading to the degree of Master of Arts. The Master of Arts degree was first awarded in 1951. The Graduate Division has since then been providing instruction for graduate students in a variety of fields. The following objectives are: (1) to provide for the student a high quality and comprehensive educational service; (2) to provide for the student a high quality and comprehensive directed study in the field of specialization; and (3) to afford an opportunity for the student to broaden his cultural background, to develop personal and social responsibility, and to prepare for community leadership. In providing these objectives, the graduate student is expected to develop a spirit of independent 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.

From 1949 to 1962, 1,216 graduate students were awarded a Master of Arts degree and 154 Master of Science degrees.

All graduate study leading to advanced degrees is incorporated in the Graduate Division which also underlines 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, which is composed of 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 consists of the Dean of the College, the Dean of Graduate and Professional Studies, the Graduate Council Officers, and fourteen other faculty members. For the academic year 1962-1963, the membership of the Graduate Council is as follows:

Donald R. Warren, Ed.D., President	Dean of the College
Maureen M. Leno, Ph.D., Vice President	Dean of Graduate and Professional Studies
Clayton M. Glend, Ph.D., Secretary	Chairman of the Graduate Council
James N. Tidwell, Ph.D., Treasurer	Dean of the College
David W. Bender, Ph.D., Faculty Member	Dean of Graduate and Professional Studies
Don C. Armstrong, Ph.D., Faculty Member	Chairman of the Graduate Council
Edna B. Kozin, Ph.D., Faculty Member	Dean of the College
Charles Morgan, M.S., Faculty Member	Dean of Graduate and Professional Studies
John W. Ancker, Ph.D., Faculty Member	Chairman of the Graduate Council
Angela M. Kozminski, Ph.D., Faculty Member	Dean of the College
March Ridge, Ph.D., Faculty Member	Dean of Graduate and Professional Studies
Robert G. Lenz, Ph.D., Faculty Member	Chairman of the Graduate Council
David A. Farrow, Ph.D., Faculty Member	Dean of the College
John G. Testa, Ph.D., Faculty Member	Dean of Graduate and Professional Studies
John A. Spangler, Ph.D., Faculty Member	Chairman of the Graduate Council
Edna Nicks, Ph.D., Faculty Member	Dean of the College
Spencer L. Ruff, Ph.D., Faculty Member	Dean of Graduate and Professional Studies



## 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. In providing instruction for graduate students through the master's degree, graduate curricula leading to this degree are designed to accomplish one or more of the following objectives: (1) To improve the student's professional competence in educational service; (2) to develop the student's ability for research and continued self-directed study in his field of specialization; and (3) to afford an opportunity for the student to broaden his cultural background, to develop personal and social responsibility, and to prepare for community leadership.

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, 1962, 2,876 graduate students were enrolled at the College. From 1949 to 1962, 1,082 Master of Arts degrees and 154 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 consists of the Dean of the College, the Dean of Graduate and Professional Studies, the Coordinator of Graduate Studies and fourteen other faculty members. For the academic year 1963-1964, the membership of the Graduate Council is as follows:

Donald R. Watson, Ed.D. (ex officio)	Dean of the College
Maurice M. Lemme, Ph.D.	Dean of Graduate and Professional Studies
Clayton M. Gjerde, Ph.D.	Coordinator of Graduate Studies
James N. Tidwell, Ph.D.	College of Arts and Sciences
David W. Belcher, Ph.D.	Division of Business Administration
Don C. Bridenstine, Ph.D.	Division of Business Administration
Edna B. Koehn, Ph.D.	Division of Education
Charles Morgan, M.S.	Division of Engineering
John W. Ackley, Ph.D.	Division of Fine Arts
Angelina M. Kitzinger, Ph.D.	Division of Health Education, Physical Education, and Recreation
	Division of Humanities
Martin Ridge, Ph.D.	Division of the Life Sciences
Robert G. Eason, Ph.D.	Division of the Life Sciences
David A. Farris, Ph.D.	Division of the Physical Sciences
John G. Teasdale, Ph.D.	Division of the Physical Sciences
John A. Spangler, Ph.D.	Division of the Social Sciences
Felix Nigro, Ph.D.	Division of the Social Sciences
Spencer L. Rogers	



## DUTIES AND RESPONSIBILITIES

The duties and responsibilities of the Graduate Council include, but are not necessarily limited to, the following activities which are consistent with the provisions of 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. Determining the number and nature of examinations required in the Graduate Division, exclusive of departmental examinations.
4. Establishing requirements for advancement to candidacy and acting on requests for such advancement.
5. Considering and acting on all graduate degree programs and petitions of students in the Graduate Division.
6. Adopting rules concerning the form of presentation, acceptability, and disposition of master's degree theses.
7. Making final recommendation to the faculty for the awarding of the master's degree.
8. Making recommendations concerning departmental requests for new graduate level (200-numbered) courses and new master's degree curricula.
9. Coordinating and systematizing procedures followed by divisions or departments offering advanced degrees or credentials.
10. Making recommendations to the President, the Dean of the College, committees of the college, and the faculty on matters pertaining to the Graduate Division.

## AUTHORIZED GRADUATE DEGREES

### MASTER OF ARTS

Art  
Biology  
Business Education  
Chemistry  
Economics  
Education  
English  
French  
Geography  
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

Biology  
Business Administration  
Chemistry  
Geology  
Mathematics

Mechanical Engineering  
Physics  
Psychology  
Public Administration

## TEACHING CREDENTIALS

Effective July 1, 1963, San Diego State College will offer credential programs requiring thirty semester hours 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 will be available for the following credentials:  
The Standard Designated Services Credential with Specializations in Pupil Personnel Services and in Health  
The Standard Supervision Credential

Students, who by July 1, 1963, have completed two years of college and are enrolled in a teacher education program in any institution approved by the California State Board of Education, may complete the credential program in which they are then enrolled. Requirements for such credentials may be found in the General Catalog and Announcement of Courses for 1963-1964.

Students entering credential programs subsequent to July 1, 1963, must meet the requirements for new credentials. Since official requirements for these credentials have not been approved by the State Board of Education, the programs for the new credentials are not described in this bulletin. For further information, the student should obtain a supplement to the General Catalog entitled *San Diego State College Teacher Education Curricula, 1963-1964*, from the Office of the Registrar.

## 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 a master's degree or for graduate credentials. Before credit earned in the summer sessions is accepted on a master's 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

A foreign student who has completed a four-year college course and holds an acceptable baccalaureate degree from an accredited institution may be admitted to the college with unclassified graduate standing by the Office of Admissions of the college. Certificates of Eligibility required by the Immigration Service for such students will state that the students are being admitted for the purpose of further training and study. This does not constitute admission to the college for the purpose of obtaining an advanced degree.

If a foreign graduate student wishes to attend San Diego State College, he should make application for admission to the Office of Admissions. This application must be accompanied by official certificates and detailed transcripts of record, in duplicate, from each collegiate institution attended several months in advance of the opening of the semester in which he expects to be admitted to the college. If certificates and transcripts are not in English, they should be accompanied by certified English translations. Credentials will be evaluated in accordance with the general regulations governing admission to the college.

Since no graduate scholarships or fellowships for foreign graduate students are available at San Diego State College, arrangements for the necessary financial support should be made before seeking admission to the college.

A graduate student whose education has been in a language other than English must be able to give evidence of a command of both written and spoken English at a level which would permit him to undertake graduate work in the discipline of his choice. A form for this purpose is included with the application form for admission to the college and must be completed by a responsible official of the school or college last attended, or by a U. S. Consular Official. In addition, after the student's arrival on the San Diego State College campus, he will be required to take the English Test for Foreign Students. The results of this test will be used by an adviser to assist the student in planning an appropriate course of study.

Subsequent to admission to the college with unclassified graduate standing as outlined above, all foreign graduate students seeking an advanced degree from this college must apply for admission to the Graduate Division with classified graduate standing. Application forms for this purpose may be obtained from the Graduate Office. Admission of foreign graduate students to the college does not imply admission to graduate degree curricula.



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 student should obtain an appointment as soon as possible 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.

### TEACHING ASSISTANTSHIPS

Teaching assistantships may be obtained by qualified graduate students in the areas of biology, business administration, business education, chemistry, economics, engineering, English, geography, health education, industrial arts, mathematics, physical education, physics, political science, psychology, sociology, and speech arts. Applications for assistantships should be made to the Dean of the 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 TEACHERS ASSOCIATION

Two scholarships of \$100 each presented each year to prospective teachers, with no restrictions as to college year.

#### 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

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

#### K. W. STOTT

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

### 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.

### FINANCIAL ASSISTANCE

Graduate students who meet the qualifications established by the Faculty Committee on Student Loans may obtain financial assistance through one of the loan programs in operation at San Diego State College. Applications for student loans and complete information may be obtained at the Office of the Assistant to the Dean of Students.

### SAN DIEGO STATE COLLEGE FOUNDATION LOAN PROGRAM

Both emergency and regular loans are made to graduate students who have completed at least one semester of study at San Diego State College, and have demonstrated the ability to do satisfactory graduate work. Applications are considered on the basis of college related need. The maximum amount available under this program is \$500 per student, with repayment arranged according to individual circumstances. Most of these loans are granted free of interest and applications will be accepted throughout the college year.

### NATIONAL DEFENSE STUDENT LOAN PROGRAM

Long term loans under Title II of the National Defense Education Act of 1958 are available to qualified graduate students who have been accepted for admission to, or are enrolled in, San Diego State College. Prior attendance at the college is not a requirement and applications are considered on the basis of college related need and academic ability. Special consideration is given to individuals with superior academic background and who desire to teach at the elementary or secondary level, and individuals with superior capacity or preparation in the areas of mathematics, the physical and life sciences, engineering, or modern foreign languages.

The maximum amount available is \$1,000 per academic year with a maximum of \$5,000 over a five-year period. Repayment time extends up to ten years after completion of full-time attendance with interest at 3% per annum beginning twelve months after the borrower leaves the college or ceases full-time attendance. A borrower may earn forgiveness of 10% of his loan plus interest for every year he teaches in a public elementary or secondary school to a maximum of 50% of the total loan(s) granted.

Applications for a National Defense Student Loan are available only between April 1 and June 14, 1963, for the 1963-1964 academic year.

### OTHER LOAN PROGRAMS

Additional opportunities for graduate students to finance their college expenses at San Diego State College are available through the United Student Aid Funds Loan Program. Up to \$1,000 per year may be obtained by qualified graduate students. Repayment begins four months after the student completes his full-time attendance and may extend for 36 months. Interest on these loans is at 6% from the time that the loan is granted.

### 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 1963 and 1964.

During the 1963 summer session, a six-week institute will be offered and during the 1963-1964 academic year a 36-week institute will be offered.

Information concerning these institutes may be obtained from Dr. D. 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 1963-1964. All participants will attend an eight-week preliminary session starting July 22, 1963.

Only graduate students who are teachers of mathematics are accepted in the institute and the curriculum will provide the better trained participants an opportunity to earn the Master of Arts degree for teaching service in mathematics. The purpose of the institute is to give mathematics teachers 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 \$3,450 which includes both the academic year and preliminary summer session. There are additional allowances for dependents, travel, and books. 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 graduate students (including graduates of San Diego State College) desiring to enroll at this college must comply with the following procedures:

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) and (2) Health History Record. 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.

Applications received after the final date for filing cannot be processed for admission to the semester immediately following.

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 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 Status Office will issue instructions to the applicant on the procedure to follow in obtaining residency classification. Specific instructions will be found in the *Class Schedule and Instructions for Registration*, which is issued prior to the beginning of each semester.

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 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

If the application of a graduate student for admission to the college is approved, the Dean of Admissions and Records will notify the student that he has been admitted to the college in one of the following categories:

- (1) As an **unclassified graduate**, if the student holds an acceptable bachelor's degree from an accredited college or university; or
- (2) As a **special graduate**, if the applicant's degree is from a nonaccredited college or university.

Students who have unclassified graduate standing in the college may apply for admission to the Graduate Division with classified graduate standing.

#### 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.

#### Special Graduate Student

A special graduate student is not eligible to enroll in 200-numbered courses. Under supervision of the Dean of Admissions and Records, a special graduate student may be admitted to nongraduate level courses for the purpose of removing the undergraduate deficiencies for which he may be held. Upon the completion of at least 12 units of approved upper division postgraduate work with a grade point average of not less than 2.5 and removal of all deficiencies, the Dean of Admissions and Records may change the student's standing from special graduate to unclassified graduate.

## ADMISSION OF GRADUATE STUDENTS TO THE GRADUATE DIVISION

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

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

At San Diego State 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 graduate 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.
- (4) Have completed an undergraduate major appropriate to the field in which he desires to earn an advanced degree.
- (5) Satisfy the special departmental or divisional requirements as stated in Part Three of this bulletin under Authorized Master's Degree Curricula.
- (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 will be referred to his major department or division where, under guidance, he may continue postgraduate work as an unclassified graduate for the purpose of removing deficiencies and otherwise demonstrating ability to succeed in a master's degree curriculum.

If the student succeeds in removing the deficiencies and receives the recommendation of the department or division, 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 who assists him in planning an official program for the master's degree.

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

### GRADUATE-SENIOR REGISTRATION

A student who is within seven units of completing requirements for the bachelor's degree and whose overall grade point average is 2.75 or above may petition the Graduate Council to take approved 100-numbered courses for concurrent graduate credit with the remaining requirements for the bachelor's degree. The degree must be completed in the same semester for which the petition is approved. The rules of the Graduate Division shall prevail in regard to academic load. (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 should be referred to the Graduate Office.

All graduate students admitted to the college after August, 1963 will be required to follow the procedures and regulations stated in the 1963-1964 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 of his application for admission to the Graduate Division.

### 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 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 a master's degree.

### GRADE POINT AVERAGES

Grade point averages are determined by dividing the total number of grade points earned by the total number of units attempted. For details see the section of this bulletin under Master of Arts and Master of Science Degrees.

### INCOMPLETE GRADE

An incomplete grade is counted as units attempted with no grade points and remains on the student's record unless made up. 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.

This regulation does not apply to the theses courses numbered 299, which are not counted as units attempted until the final grade has been assigned, provided that the course be completed within the time permitted by the Graduate Division.



## WITHDRAWALS

### OFFICIAL WITHDRAWAL

The student is held for every course appearing on his official 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 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.

### 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 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. Students petitioning for readmission are required to have personal interviews with members of the Board of Admissions.

### 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 Gradu-

ate Council will be required to withdraw from all graduate degree curricula in the Graduate Division and revert to unclassified graduate standing in the college.

### 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

A total of not more than six units of work earned in residence at another college, and/or work earned in regularly organized extension courses at San Diego State College, if recommended by the graduate adviser and approved by the Dean of Graduate Studies, may be accepted as part of the requirements for the master's degree. Approval for extension courses must be obtained by the master's degree applicant prior to the date of completion of the course. Work taken by correspondence is not acceptable.

### STUDY LIST LIMITS IN THE GRADUATE DIVISION

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.

### APPLICATION FOR GRADUATION

An application for graduation must be filed in the Graduate Office four weeks in advance of the date of graduation.

## MASTER OF ARTS AND MASTER OF SCIENCE DEGREES

### BASIC REQUIREMENTS

The basic requirements for the master's degree in the State Colleges are determined by the Board of Trustees of the California State Colleges and are stated in Section 40504 of the Administrative Code as follows:

#### THE MASTER'S DEGREE

"To be eligible for the master's degree, the candidate shall have completed the following requirements:

"(a) **Advancement to Candidacy.** For advancement to candidacy for the master's degree, the candidate shall have completed the following minimum requirements:

- (1) The completion of requirements for admission to graduate degree curricula, as specified in Section 41001.
- (2) Such scholastic, professional, and personal standards, the passing of examinations, and other qualifications as the college may prescribe.

"(b) **Requirements for the Degree.**

- (1) Thirty semester units of graduate work 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. Of the 30 semester units:
  - (A) Not less than 24 shall be completed in residence.
  - (B) Not less than 12 shall be in courses organized primarily for graduate students.
  - (C) Not more than six shall be in student teaching, extension course classes, and/or transfer credit.
  - (D) Not more than six shall be allowed for a thesis, but the requirement of a thesis is optional with the college.
- (2) A grade-point average of 3.0 (grade of B on a five-point scale) or better in all courses taken to satisfy the requirements for the degree.
- (3) The completion of a satisfactory pattern of study in an approved field of concentration."

The Master of Arts and the Master of Science degree programs of students in the Graduate Division at San Diego State College are based on the educational background, experience, and objectives of the individual student. Students who intend to teach or hold public school positions may elect the Master of Arts degree for teaching service with a concentration of at least 18 units in a subject matter field or in education provided they hold, or earn concurrently with the master's degree, a valid California day school non-provisional credential. Students wishing to earn the junior college credential concurrently with the master's degree must complete a major of at least 24 units in the subject matter field. Any exceptions to the credential requirements for the Master of Arts degree for teaching service must be approved by the Graduate Council. Students desiring a graduate degree in the liberal arts or sciences, in applied fields, or in the professions, may elect the Master of Arts or Master of Science degree with a major of at least 24 units in the subject matter field.

#### 1. 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 advanced to candidacy for an advanced degree provided he



has filed an official program of study approved by the appropriate graduate adviser and the Dean of Graduate Studies. A student will be considered for advancement to candidacy after (a) he has earned at least 12 units in his graduate program at this college with a minimum grade point average of 3.0 (B) or six units for a graduate of San Diego State College, provided his undergraduate grade point average was at least 2.75; (b) he has removed all undergraduate deficiencies and has completed all departmental or divisional requirements; (c) he has attained satisfactory scores on the Graduate Record Examination Aptitude Test and, if applicable, the achievement examination (General Culture Test); (d) he has been recommended for advancement to candidacy by the department or division concerned; and (e) final approval has been given by the Graduate Council. Written notification of advancement to candidacy will be sent to the student from the Graduate Office.

## 2. 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. Students desiring the Master of Arts degree for teaching service must take the achievement examination in addition to the Graduate Record Examination Aptitude Test. Examinations required in the various subject matter fields of study are listed in the appropriate sections of Part Three, Fields of Study and Courses of Instruction under Specific Requirements for the Master of Arts and Master of Science degree. (See below for the comprehensive examination required in lieu of thesis under Plan B.)

## 3. COURSE AND UNIT REQUIREMENTS:

Specific courses and languages required and the distribution of units within the basic thirty units are listed in the appropriate sections of Part Three, Fields of Study and Courses of Instruction under Specific Requirements for the Master of Arts or Master of Science Degree. Certain general requirements applying to all graduate degree curricula are as follows:

A. Only 100- or 200-numbered courses are accepted in satisfaction of the 30 unit requirement for the master's degree. Courses required to remove undergraduate deficiencies are in addition to the basic 30 units and must be listed on the student's official program of study.

B. Any course completed more than seven years prior to the date on which all requirements listed on the official program of study are completed cannot be counted as a part of the basic 30 units unless the student validates the course in question by passing satisfactorily a comprehensive examination on the subject matter of the course. A more recently completed course may be substituted for an outdated course with approval of the appropriate graduate adviser and the Dean of Graduate Studies.

C. A minimum of nine units of courses listed on the official program of study must be completed *after* advancement to candidacy.

D. Not more than a total of six units will be accepted in special study courses numbered 199 and 298.

E. Not more than six units of course work taken at another institution will be accepted and all courses taken by correspondence are unacceptable. At least 24 units of programmed courses must be completed in residence at San Diego State College.

## 4. THESIS:

Plan A, requiring a thesis or project, may be selected by a student seeking the master's degree provided the department or division concerned approves the listing of course 299, Thesis, on the official program of study. Three units of credit are granted for the satisfactory completion of the thesis or project upon its acceptance by the student's thesis committee, the department or division concerned, and the Graduate Council. Registration in course 299, Thesis, is required; however, students will not be permitted to register for course 299 until they have received official notice of advancement to candidacy from the Graduate Office and have an officially appointed thesis or project committee. Theses or projects must be completed four weeks in advance of the date of the convocation at which the degree is to be conferred.

*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 furnished by the Graduate Office.*

Plan B, requiring a comprehensive examination in lieu of a thesis, may, with the approval of the department or division concerned, be followed in certain graduate degree curricula as indicated in Part Three of this bulletin. Dates at which comprehensive examinations in lieu of theses are given are determined by the department or division concerned. Results on comprehensive examinations must be reported to the Graduate Office by the department or division.

## 5. GRADE POINT AVERAGES:

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

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

## 6. 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 four weeks in advance of the expected date of graduation to provide adequate time for official faculty vote of approval for graduation.

## 7. 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.

## 8. DIPLOMA:

The appropriate diploma is ordered by the student from the College Book Store.



## FIELDS OF STUDY AND COURSES OF INSTRUCTION

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.

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.



## 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.

### SPECIFIC REQUIREMENTS FOR THE MASTER OF ARTS DEGREE

In addition to meeting the requirements for classified graduate standing and the general 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 200-numbered courses. Art 290, Art 292A or 292B, Art 294A or 294B, and Art 299 are required courses. Education 290A is required of all students electing to write a thesis instead of completing a creative project in art. Prior to the completion of all course requirements, students will be required to pass a comprehensive examination covering the fields of History of Art of Western Civilization and Principles of Art Appreciation and Design.

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

In addition to meeting the requirements for classified graduate standing and the general 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 290, Art 299, and Education 290A are required courses. (Students must also satisfy the requirements for a California school service credential.)

### 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 remain in the custody of the college library; projects remain in the custody of the Department of Art at the college.

### ADVANCEMENT TO CANDIDACY

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

### 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, Robert Wallace  
Credential Adviser: J. D. Swiggett  
Professors: E. G. Jackson, M.A.; Ilse H. Ruocco, M.A.; G. N. Sorenson, M.A.; J. D. Swiggett, M.F.A.  
Associate Professors: Marybelle S. Bigelow, M.A.; J. H. Dirks, M.F.A.; Martha W. Longenecker, M.F.A.; R. D. Wallace, D.Litt.  
Assistant Professors: R. J. Baxter, M.F.A.; W. F. Bowne, M.A.; Arline M. Fisch, M.A.; J. R. Hopkins, M.F.A.; P. A. Lingren, M.A.; C. C. Olds, M.A.; H. T. Rowan, M.F.A.; Jo Ann L. Tanzer, M.A.  
Instructor: T. L. Jamieson, M.F.A.

### COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN ART

#### UPPER DIVISION COURSES

- |  |   |
|--|---|
| 100A-100B. Advanced Drawing (2-2)                        | 118A-118B. Advanced Watercolor Painting (2-2) |
| 106A-106B-106C. Printmaking (2-2-2)                      | 119A-119B-119C. Ceramics (2-2-2)              |
| 107. Color and Design in Merchandise (2)                 | 120A-120B. Advanced Design (2-2)              |
| 111A-111B. Industrial Design (2-2)                       | 153. Ancient Art (3)                          |
| 112A-112B. Design and Composition (2-2)                  | 154. Medieval Art (3)                         |
| 113A-113B. Advanced Furniture Design (2-2)               | 155. Renaissance Baroque and Rococo Art (3)   |
| 115A-115B-115C-115D. Life Drawing and Painting (2-2-2-2) | 156. History of Modern Art (3)                |
| 116A-116B-116C-116D. Advanced Painting (2-2-2-2)         | 170A-170B. Jewelry (2-2)                      |
| 117A-117B-117C-117D. Advanced Sculpture (2-2-2-2)        | 180A-180B. Advanced Weaving (2-2)             |
|  | 195A-195B. Advanced Interior Design (2-2)     |
|  | 199. Special Study (1-6)                      |

#### Anthropology

- 151A. The North American Indian (3)
- 151B. Indian Civilization of Middle America (3)
- 172. Indian Cultures of the Southwest (3)

#### Philosophy

- 136. Philosophy of Art (3)

#### Psychology

- 175. Theories of Learning (3)

### GRADUATE COURSES

- 206. Seminar in Creative Printmaking (3)

Prerequisites: Art 106A and 106B.

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 once with new content.

- 216. Seminar in Creative Painting (3)

Prerequisites: Art 112A, 112B, and 2 units of Art 116 A,B,C, or D.

Aesthetic organization of selected visual subject matter in the medium of colors in oils. May be repeated to a maximum of 6 units.



**217. Seminar in Creative Sculpture (3)**

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

Aesthetic organization of selected subject matter in the media of sculpture. May be repeated to a maximum of 6 units.

**219. Seminar in Creative Crafts (3)**

Prerequisites: 6 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 6 units.

**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.

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

Prerequisites: Art 50A and 50B, or equivalents.

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)**

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

Individual study. 6 units maximum credit.

**299. Thesis or Project (3)**

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

Guidance in the preparation of a thesis or project 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 with a major in biology, the Master of Arts degree for teaching service with a concentration in biology, and the Master of Science degree in biology. The major for the Master of Arts degree in biology may contain an emphasis in the areas of ecology, genetics, microbiology, and physiology. The concentration for the Master of Arts degree for teaching service may contain an emphasis in biology, botany, microbiology, or zoology. In the Master of Science degree, the emphasis may be placed on economic entomology, fishery biology, medical technology, and radiation biology. Other emphases or concentrations may be submitted for acceptance by the Biology Graduate Committee.

The completion of a new Life Science building in 1962 has increased the present 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.

### 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 an undergraduate major in the department or curriculum of the biological sciences 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 should be consulted regarding the program of study.

### SPECIFIC REQUIREMENTS FOR THE MASTER OF ARTS DEGREE

In addition to meeting the requirements for classified graduate standing and the general 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 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 are also required.

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

In addition to meeting the requirements for classified graduate standing and the general 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 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. (Students must also satisfy the requirements for a California school service credential.) Plan A (Thesis) will be required unless the Biology Graduate Committee and the graduate adviser approve the substitution of Plan B. In the latter case, the student must satisfactorily pass a comprehensive examination after he has been advanced to candidacy. The exami-



nation will consist of two parts: one part will be a written survey test on general biology; the second part will be an oral test covering his special area of concentration.

### 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 one of the following fields: biology, botany, microbiology, or zoology.
- A minimum of 12 additional units of upper division or graduate courses selected from biology, botany, microbiology, or zoology. Remaining units may be taken in these, or closely related fields.
- 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.

### ADVANCEMENT TO CANDIDACY

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

### TEACHING ASSISTANTSHIPS

Teaching assistantships in biology are available to a limited number of qualified students. Application blanks and additional information may be secured from the Dean of the College.

### 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: A. H. Gallup, Ph.D.  
 Chairman, Department of Microbiology: H. A. Walch, Ph.D.  
 Chairman, Department of Zoology: R. W. Crawford, Ph.D.  
 Coordinator of Graduate Programs: M. A. Myers  
 Graduate Advisers:  
 Master of Arts: Biology, F. J. Ratty; Botany, A. H. Gallup; Microbiology, M. A. Myers; Teaching, A. H. Gallup, E. W. Huffman; Zoology, C. L. Brandt  
 Master of Science: Biology, E. W. Huffman, D. L. Jameson; Botany, A. H. Gallup; Microbiology, M. A. Myers; Zoology, C. L. Brandt  
 Credential Adviser: A. H. Gallup  
 Professors: R. W. Crawford, Ph.D.; J. E. Crouch, Ph.D.; A. H. Gallup, Ph.D.; R. D. Harwood, Ph.D.; Mabel A. Myers, Ph.D.; A. C. Olsen, Ph.D.; F. J. Ratty, Ph.D.; K. M. Taylor, Ph.D.  
 Associate Professors: E. C. Barham, Ph.D.; K. K. Bohnsack, Ph.D.; C. L. Brandt, Ph.D.; E. W. Huffman, Ph.D.; D. L. Jameson, Ph.D.; Wm. McBlair, Ph.D.; C. E. Norland, M.S.; D. A. Preston, Ph.D.; D. C. Shepard, Ph.D.; H. A. Walch, Ph.D.  
 Assistant Professors: Adela S. Baer, Ph.D.; G. Collier, Ph.D.; G. W. Cox, Ph.D.; R. E. Etheridge, Ph.D.; D. A. Farris, Ph.D.; W. E. Hazen, Ph.D.; D. Hunsaker, Ph.D.; J. L. Koevenig, Ph.D.; H. B. Moore, Ph.D.; L. J. Resseguie, Ph.D.; W. C. Sloan, Ph.D.; W. C. Spanis, Ph.D.; M. A. Taylor, M.S.; H.L. Wedburg, Ph.D.

## COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS

### UPPER DIVISION COURSES

Biology	Microbiology
101. General Physiology (4)	101. General Microbiology (4)
103. General Cytology (4)	102. Advanced Bacteriology (4)
105. Developmental Biology (4)	103. Fundamentals of Immunology and Serology (4)
110. Ecology (4)	104. Medical Mycology (4)
111. Aquatic Biology (4)	105. Bacterial Physiology (2)
112. Fisheries Biology (3)	106. Bacterial Physiology Laboratory (2)
113. Biological Oceanography (4)	107. Virology (2)
150A-150B. Radiation Biology (2-2)	108. Virology Laboratory (2)
151. Radioisotope Techniques in Biology (3)	109. Hematology (3)
155. Genetics (4)	199. Special Study (1-6)
157. Cytogenetics (4)	
158. Conservation of Wildlife (3)	
160. Experimental Evolution (3)	
161. History of Biology (3)	
162. Source Material in the History of Biology (3)	
175. Statistical Methods in Biology (3)	
198. Methods of Investigation (2)	
Botany	Zoology
102. Mycology (4)	100. Embryology (4)
104. Plant Anatomy (4)	106. Comparative Anatomy of the Vertebrates (4)
107. Plant Physiology (4)	108. Histology (4)
112. Cultivated Trees and Shrubs (3)	112. Marine Invertebrates (4)
114. Systematic Botany (4)	114. Natural History of the Vertebrates (4)
126. Plant Pathology (4)	115. Ichthyology (4)
162. Agricultural Botany (2)	117. Ornithology (4)
199. Special Study (1-6)	121. General Entomology (4)
	122. Advanced Entomology (4)
	123. Immature Insects (3)
	125. Economic Entomology (4)
	126. Medical Entomology (3)
	128. Parasitology (4)
	142. Comparative Animal Physiology (4)
	164. Human Genetics (4)
	199. Special Study (1-6)

### GRADUATE COURSES

#### Biology

200. Seminar (2 or 3)  
 Prerequisite: Consent of instructor.  
 An intensive study of a selected topic in advanced biology.  
 May be repeated with new content for additional credit.
210. Seminar in Cellular Biology (2)  
 Prerequisite: Biology 101 or 103, or consent of instructor.  
 May be repeated with new content to a maximum of four units.
220. Seminar in Growth and Development (2)  
 Prerequisite: Zoology 100 or consent of instructor.  
 May be repeated with new content to a maximum of four units.
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 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.
- 240. Seminar in Ecology (2)**  
Prerequisite: Biology 110 or 112, or consent of instructor.  
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, or consent of instructor.  
May be repeated with new content to a maximum of four units.
- 270. Seminar in Genetics (2)**  
Prerequisite: Biology 155 or consent of instructor.  
May be repeated with new content to a maximum of four units.
- 276. Physiological Genetics (3)**  
Prerequisites: Biology 155 or Zoology 164; Chemistry 101A.  
Recommended: Chemistry 115A-115B. Biochemical aspects of genetics of microbial and human systems.
- 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.
- 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 of a selected topic in advanced botany. 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 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 of a selected topic in advanced microbiology. May be repeated with new content for additional credit.

- 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)**  
Prerequisite: Consent of instructor.  
An intensive study of a selected topic in advanced zoology. 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 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 Division of Business Administration offers graduate study leading to the Master of Science degree in business administration. This degree program, accredited by the American Association of Collegiate Schools of Business, is offered to equip business leaders for the complicated and diverse responsibilities they must accept in the future. It is designed to provide not only breadth of preparation, but also intensive professional training in several special fields. The following concentrations are available:

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

Close contacts with large and small firms, both local and national, facilitate the type of research projects available to graduate students in business administration. The demand by industry and government for students with graduate training in business administration is a growing one.

Students who have a degree in engineering and who plan to serve in an executive capacity will find it desirable to complete the Master of Science degree in business administration. Business administration course prerequisites are necessary, but in many cases may be satisfied by an evaluation of undergraduate credits, independent study followed by credit examination, or extension courses, as well as formal course work on the campus. Those desiring the combination of an undergraduate major in engineering to be followed by the Master of Science degree with specialization in the fields of industrial or business management should obtain the assistance of an adviser in planning their program at the beginning of their undergraduate college work. Information may be obtained from the Coordinator of Graduate Programs in the Division of Business Administration.

For a description of the program leading to the Master of Arts degree in business education, refer to the section of this bulletin on Business Education, which follows this section.

### BUREAU OF BUSINESS AND ECONOMIC RESEARCH

The Bureau of Business and Economic Research is an organized research activity serving the needs of the Division of Business Administration and the Department of Economics. Operationally, it is a part of the Division 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 co-operative arrangements with outside individuals and organizations for conducting specific research projects; (4) compile local and regional data; (5) publish the results of bureau research investigations and aid the faculty in publication of research. Graduate students are encouraged to make use of bureau facilities.

### ADMISSION TO THE GRADUATE 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 is required to have a grade point average of not less than 3.0 (B) on all college work attempted up to the time he applies for admission to the Graduate Division of the College.

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 examinations which are required of all applicants:

1. Graduate Record Examination Aptitude Test. (Appointments for this test are made at the Test Office.)

2. Admission Test for Graduate Study in Business. (The student should arrange to take this test prior to enrolling in the college. Details concerning this test, 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.)

Students who do not qualify under these standards will not be recommended for classified graduate standing in the Graduate Division.

### Course Prerequisites for Classified Graduate Standing

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

### SPECIFIC REQUIREMENTS FOR THE MASTER OF SCIENCE DEGREE

In addition to meeting the requirements for classified graduate standing and the general requirements for the master's degree as described in Part Three of this bulletin, the student must complete at least 15 units of 200-numbered courses. The 30 required units of postgraduate work must include the following courses:

	Units
Business Administration 299, Thesis	3
200-numbered courses in Business Administration or Economics	12
Total required in the 200-series	15
Additional courses in the 100- or 200-series (maximum of 6 units outside of Business Administration or Economics) to include Economics 100A or 100B, unless student has had other advanced work in economics	15
Total number of units required	30

### ADVANCEMENT TO CANDIDACY

In addition to the general requirements for advancement to candidacy, which are described in Part Three of this bulletin, the Division of Business Administration also requires completion of the admission test for graduate study in business before recommending an applicant for advancement to candidacy.

### TEACHING ASSISTANTSHIPS

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 College.

### FACULTY

Chairman, Division of Business Administration: C. W. Lamden, Ph.D., C.P.A.  
 Chairman, Department of Accounting: D. B. Ferrel, M.B.A., C.P.A.  
 Chairman, Department of Business Law and Finance: W. H. Hippaka, Jur.D.  
 Chairman, Department of Management: L. H. Peters, Ph.D.  
 Chairman, Department of Marketing: E. A. Hale, Ph.D.  
 Coordinator of Graduate Programs: D. C. Bridenstine, Ph.D.

### Graduate Advisers:

Accounting: C. W. Lamden, V. E. Odmark  
 Business Management: D. W. Belcher, A. C. Pierson, L. H. Peters  
 Finance: R. P. Hungate, Sylvia Lane, W. A. Nye  
 Production Management: Oliver Galbraith, G. L. Hodge, A. Srbich  
 Insurance: R. P. Hungate, W. A. Nye  
 Junior College Credential: E. P. Brown  
 Marketing: G. K. Sharkey, E. A. Hale  
 Employee Relations: D. W. Belcher, F. B. Torbert  
 Real Estate: W. H. Hippaka



Professors: D. W. Belcher, Ph.D.; E. P. Brown, M.A., P.A.; G. L. Hodge, Ph.D.; C. W. Lamden, Ph.D., C.P.A.; V. E. Odmark, Ph.D., P.A.; Frances Torbert, M.A.

Associate Professors: W. F. Barber, Ph.D.; D. C. Bridenstine, Ph.D.; Arthur Brodshatzer, M.B.A., C.P.A.; L. J. Dodds, M.B.A., C.P.A.; D. B. Ferrel, M.B.A., C.P.A.; E. A. Hale, Ph.D.; W. H. Hippaka, Jur.D.; D. F. Lawson, Ph.D.; L. H. Peters, Ph.D.; Simon Reznikoff, LL.B.; G. K. Sharkey, Ph.D.; A. L. Srbich, Ph.D.

Assistant Professors: R. E. Ahrens, Ph.D.; R. D. Darley, Ph.D.; Oliver Galbraith, M.B.A.; R. P. Hungate, Ph.D.; Sylvia Lane, Ph.D.; W. A. Nye, Ph.D.; A. C. Pier-son, M.B.S.; W. K. Saigh, Ph.D.; Allen Sinsheimer, Jr., J.D.; L. W. Snudden, M.B.A., C.P.A.; T. R. Wotruba, M.B.A.

## COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN BUSINESS ADMINISTRATION

### UPPER DIVISION COURSES

- |  |  |
|--|--|
| 100. Intermediate Accounting (4)                                   | 138. Systems and Data Analysis (3)                     |
| 101. Advanced Accounting (3)                                       | 140. Employee Relations (3)                            |
| 102. Cost Accounting (4)   | 141. Employee Relations Laboratory (1)                 |
| 106. Income Tax Accounting (4)                                     | 142. Wage and Salary Administration (3)                |
| 107. Advanced Income Tax Accounting (2)                            | 143. Problems in Employee Relations (3)                |
| 108. Governmental Accounting (2)                                   | 145. Human Factors in Management (3)                   |
| 112. Auditing (4)  | 149. Business Policy (3)                               |
| 114. Accounting Systems (2)  | 151. Problems of Marketing Management (3)              |
| 115. Financial Statements (2)                                      | 152. Retailing Principles (3)                          |
| 116. Controllership (2)  | 153. Advertising Principles (3)                        |
| 118. Advanced Business Law (3)                                     | 154. Advertising Problems (3)                          |
| 119. C.P.A. Review (3)   | 155. Public Relations (3)                              |
| 120. General Insurance (3)   | 157. Market Research (3)                               |
| 121. Property and Casualty Insurance (3)                           | 159. Color and Design in Merchandise (2)               |
| X-123A-B. C.P.C.U. Preparation (3-3) (Special permission required) | 160. Merchandise Analysis (3)                          |
| 124. Life Insurance Principles and Practices (3)                   | 161. Traffic Management (3)                            |
| 125. Life Insurance Underwriting (3)                               | 162. Industrial Marketing and Wholesale-<br>saling (3) |
| X-126A-B. C.L.U. Preparation (3-3) (Special permission required)   | 163. Sales Management (3)                              |
| 128. Investments (3)   | 164. Purchasing and Buying (3)                         |
| 129. Credit Management (3)   | 165. Foreign Marketing (3)                             |
| 130. Financial Analysis and Manage-<br>ment (3)                    | 170. Real Estate Principles and Practices (3)          |
| 131. Legal Factors in Business (3)                                 | 171. Law of Real Property (3)                          |
| 134. The Social Environment of Busi-<br>ness (3)                   | 172. Property Management (3)                           |
| 135. Production Management (3)                                     | 173. Real Estate Finance (3)                           |
| 136. Production and Quality Control (3)                            | 174. Real Estate Appraisal Theory (3)                  |
| 137. Motion and Time Study (3)                                     | 199. Special Study (1-6)                               |

### GRADUATE COURSES

200. Seminar in Accounting Theory (3)  
Current trends in accounting in relation to the historical development of account-  
ing principles and theory.
203. Advanced Cost Accounting (3)  
Prerequisite: Business Administration 102.  
Advanced study of the uses of standard costs, budget construction, distribution  
costs, profit analysis, profit-volume analysis, differential costs; emphasis on examina-  
tion of current publications.

### 213. Advanced Auditing (3)

Prerequisite: Business Administration 112.

Critical analysis of the application of auditing principles in verification of finan-  
cial statements; review of AICPA and SEC bulletins and regulations; advanced  
professional examination of audit standards, procedures, sampling techniques, and  
report writing; trends and developments in the auditing profession.

### 220. Seminar in Business Organization and Management (3)

Prerequisites: Business Administration 132 and consent of instructor.

Analysis of selected topics in business organization and management directed to  
the development of theories of organization and to an understanding of the oper-  
ation of enterprises. Emphasis on planning, coordination, leadership and decision-  
making.

### 221. Seminar in Employee Relations (3)

Prerequisites: Business Administration 140 and Economics 150; and permission of  
instructor.

Contemporary problems in personnel and industrial relations. Investigations by  
seminar members of aspects of human factors in management, labor relations, and  
other personnel-related topics. Case problems involving such areas as communica-  
tion, participation, status, control, and effects of technological changes.

### 222. Seminar in Finance (3)

Prerequisites: Business Administration 127 or Economics 135 and consent of  
instructor.

Principles and problems involved in financing business firms from both internal  
and external sources. Stressing of student research and knowledge of literature in  
the field of finance.

### 223. Seminar in Insurance (3)

Prerequisites: Business Administration 120, 124, 125; and permission of instructor.

Advanced study of insurance management including underwriting, investment,  
and other problems related to effective business operation. Programming of per-  
sonal, partnership and corporation estates.

### 224. Seminar in Production Management (3)

Prerequisites: Economics 2 or equivalent; Mathematics 22 or equivalent; and  
consent of instructor.

A study of quantitative analytical techniques for managerial planning and deci-  
sion-making. Aspects of operations research that apply to business situations.

### 250. Seminar in Marketing (3)

Prerequisites: Business Administration 150 and permission of instructor.

Selected phases of marketing, such as pricing policies and practices, channels of  
distribution, sales promotion activities, distribution cost analysis. Written reports on  
special aspects of the semester's subject matter are required.

### 275. Seminar in Real Estate (3)

Prerequisites: Business Administration 170, 173, and consent of instructor.

Current problems in real property and regional economic development.

### 290. Bibliography (1)

Exercises in the use of basic reference books, journals, and specialized bibliog-  
raphies, 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 Division 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.

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

In addition to meeting the requirements for classified graduate standing and the general 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. Education 290A is recommended. (The student must also satisfy the requirements for a California school service credential.) 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 general section designed to test the student on core information in the business teaching field.
- Two special sections designed to test the student on the two business education subfields set forth on his California teaching credential.

### ADVANCEMENT TO CANDIDACY

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

### TEACHING ASSISTANTSHIPS

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 College.

### FACULTY

Chairman, Division of Business Administration: C. W. Lamden, Ph.D.  
 Chairman, Department of Business Education: M. L. Crawford, Ed.D.  
 Graduate Advisers: E. C. Archer, M. L. Crawford, E. D. Gibson  
 Credential Advisers: M. L. Crawford, Evangeline LeBarron  
 Professors: M. L. Crawford, Ed.D.; E. D. Gibson, Ed.D.; Laura Lynn Straub, M.C.S.  
 Associate Professors: E. C. Archer, Ed.D.; R. G. Langenbach, Ed.D.; Evangeline LeBarron, B.A., B.S.  
 Assistant Professor: L. A. Pemberton, M.A.

## COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN BUSINESS EDUCATION

### UPPER DIVISION COURSES IN BUSINESS ADMINISTRATION

- |   |   |
|---|---|
| 180. Workshop in Business Education (2)                           | 184. Office Management (3)                              |
| 181. Administration and Supervision of Distributive Education (3) | 185. Office Systems and Automation (3)                  |
| 183A-183B. Executive Secretarial Procedures (3-3)                 | 189. Objectives and Curricula in Business Education (3) |
|   | 199. Special Study (1-6)                                |

Any upper division course listed in the Division of Business Administration may be selected with approval of the graduate adviser.

### GRADUATE COURSES IN BUSINESS ADMINISTRATION

#### 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.

#### 271. Seminar in Office Management (2)

Prerequisites: Business Administration 1A, 1B, and 184.  
 An intensive study of the problems of office management and their solution. The relation of records, reports, budgets, and manuals to managerial control.

#### 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 offers graduate study 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.

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.

### 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.

### SPECIFIC REQUIREMENTS FOR THE MASTER OF ARTS DEGREE

In addition to meeting the requirements for classified graduate standing and the general 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 220, 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 general 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. (The student must also satisfy the requirements for a California school service credential.)

### 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 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 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.

### ADVANCEMENT TO CANDIDACY

In addition to meeting the requirements for advancement to candidacy as described in Part Three of this bulletin, students must pass a qualifying examination in chemistry. This examination should be taken during the first semester in residence.

### TEACHING ASSISTANTSHIPS

Teaching assistantships in chemistry are available to a limited number of qualified students. Application blanks and additional information may be secured from the Dean of the College.

### FACULTY

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

Chairman, Department of Chemistry: Harold Walba, Ph.D.

Graduate Adviser: R. W. Isensee

Credential Adviser: L. E. Smith

Professors: R. W. Isensee, Ph.D.; Lionel Joseph, Ph.D.; D. H. Robinson, Ph.D.; R. D. Rowe, Ph.D.; J. A. Spangler, Ph.D.; Harold Walba, Ph.D.; Arne Wick, Ph.D.

Associate Professors: N. J. Harrington, Ed.D.; L. H. Hellberg, Ph.D.; Reilly Jensen, Ph.D.; V. J. Landis, Ph.D.; J. G. Malik, Ph.D.; C. J. Stewart, Ph.D.; E. P. Wadsworth, Jr., Ph.D.

Assistant Professors: E. J. Grubbs, Ph.D.; W. D. Jones, Ph.D.; H. E. O'Neal, Ph.D.; M. A. Ring, Ph.D.; C. M. Sharts, Ph.D.; Wm. Ware, Ph.D.; J. H. Woodson, Ph.D.

### COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN CHEMISTRY

#### UPPER DIVISION COURSES

- |   |   |
|---|---|
| 116A-116B. General Biochemistry (3-3)         | 155. Advanced Instrumental Methods (4)              |
| 118. Colloid Chemistry (2)                    | 156. Quantitative Microanalysis (3)                 |
| 127A-127B. Advanced Inorganic Chemistry (3-3) | 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)  
Prerequisite: Consent of instructor.  
An intensive study of a selected topic in advanced chemistry. May be repeated with new subject matter for additional credit.
220. Chemical Thermodynamics (3)  
Prerequisites: Mathematics 52 and Chemistry 110B.  
An introduction to the study of chemical thermodynamics.
221. Quantum Chemistry (3)  
Prerequisite: Chemistry 220.  
Selected topics in thermodynamics and quantum chemistry, including an introduction to the statistical approach to quantum mechanics.
222. Chemical Kinetics (2)  
Prerequisites: Mathematics 52 and Chemistry 110B.  
Theory of rate processes; applications of kinetics to the study of reaction mechanisms.



- 223. Physical Chemistry of Electrolytic Solutions (2)**  
Prerequisite: Chemistry 220.  
Theory of ionic solutions; electrode potentials, determination of activity coefficients, partial molal quantities and their applications.
- 230. Advanced Organic Chemistry (2)**  
Prerequisite: Chemistry 112.  
Applications and limitations of organic reactions from the viewpoint of synthesis.
- 231. Mechanisms in Organic Reactions (2)**  
Prerequisites: Chemistry 110B and 131.  
Reactivity and mechanism in organic reactions.
- 240. Chemistry of the Less Familiar Elements (2)**  
Prerequisite: Chemistry 127A.  
Modern inorganic theory applied to electronic configurations, periodic relationships and uses of selected less familiar elements.
- 250. Advanced Analytical Chemistry (2)**  
Prerequisites: Chemistry 150 and 110B.  
Selected topics and theories in advanced analytical chemistry.
- 260. Advanced Biochemistry (2)**  
Prerequisites: Chemistry 110B and 115B.  
Discussion of selected topics emphasized in current research in carbohydrates, fats, and protein metabolism such as mechanisms of biological reactions, growth factors, and hormonal control.
- 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 170.  
Chemistry of the actinides. Nuclear reactions, induced radioactivity. Interaction of radiation with matter, fission systematics, interpretations arising from nuclear models.
- 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.

### SPECIFIC REQUIREMENTS FOR THE MASTER OF ARTS DEGREE

In addition to meeting the requirements for classified graduate standing and the general requirements for the master's degree as described in Part Three of this bulletin, the student must take the Graduate Record Examination Advanced Test in Economics during his first semester of attendance and 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 15 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.

### 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.

### TEACHING ASSISTANTSHIPS

Teaching assistantships in Economics are available to a limited number of qualified students. Application blanks and further information may be obtained from the Dean of the College.

### FACULTY

Chairman, Division of the Social Sciences: D. S. Milne, Ph.D.  
Chairman, Department of Economics: Adam Gifford, Ph.D.  
Graduate Adviser: George Babilot  
Professors: G. K. Anderson, Ph.D.; R. E. Cameron, Ph.D.; J. O. McClintic, Ph.D.; F. L. Ryan, Ph.D.



Associate Professors: George Babilot, Ph.D.; R. E. Barckley, Ph.D.; D. A. Flagg, Ph.D.; Adam Gifford, Ph.D.; E. J. Neuner, Ph.D.; Marjorie S. Turner, Ph.D.  
 Assistant Professors: G. P. Balabanis, A.B.; L. E. Chadwick, B.S.; J. W. Leasure, Ph.D.; Kozo Yamamura, M.A.  
 Lecturer: C. D. Harbury, Ph.D.

## COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN ECONOMICS

### UPPER DIVISION COURSES

- |  |  |
|--|--|
| 102. Comparative Economic Systems (3)                    | 151. Labor Legislation (3)                         |
| 107. Quantitative Economics (3)                          | 152. Collective Bargaining (3)                     |
| 114. Economic Problems of Latin America (3)              | 172. Public Utilities (3)                          |
| 115. Economic Problems of South and East Asia (3)        | 173. Economic Resources and Growth (3)             |
| 118. Economy of the Soviet Union (3)                     | 174. Economic Concentration and Monopoly Power (3) |
| 119. Economic Problems of Africa and the Middle East (3) | 190. International Economics—Principles (3)        |
| 127. Agricultural Economics (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 the Development of Economic Thought (3-3)**  
 Prerequisite: Twelve units in economics.  
 A critical study of the development of economic thought.
- 203A-203B. Seminar in Advanced Economic Theory (3-3)**  
 Prerequisites: Economics 100A and Economics 100B.  
 Individual research, seminar reports, group discussion of problems in economic theory.
- 210. Seminar in Economic History (3)**  
 Prerequisite: Economics 110 or 111 or consent of both the instructor and the Departmental Academic Requirements Committee.  
 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 107.  
 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 Economics 151 or Economics 152.  
 Individual study and group discussion of selected topics in labor economics.

### 272. Seminar in Utilities and Water Resources (3)

Prerequisite: Economics 172.

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

### 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.

### 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 Division 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, pupil personnel services, 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 has not embarked on a given credential program by July 1, 1963, will need to meet new credential requirements presently being developed in accordance with legislation enacted in 1961. (For information on these credentials, the student should obtain a copy of a supplement to the General Catalog entitled *San Diego State College Teacher Education Curricula, 1963-1964* from the Office of the Registrar.)

### 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 department 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 general 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, pupil personnel services, or special education must, in addition to the above, meet specific requirements for admission to the appropriate advanced credential program. (For further information, refer to the Division 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 9, 1963, with reservations required prior to October 19, 1963. In the spring semester, the test will be given on March 21, 1964, with reservations required prior to February 29, 1964. Make reservations in the Test Office.

### 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 general 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 290A-B 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.

### 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 16, 1963, and on March 14, 1964. Reservations must be made at least a week in advance in the Office of Advanced Credentials, Division 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 Division 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 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 290A, Procedures of Investigation and Report (2 units); Education 290B, Bibliography (1 unit).
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 3 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 290A, Procedures of Investigation and Report (2 units); Education 290B, Bibliography (1 unit).
2. Core program (15 units). The core is composed of advanced courses in education 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 290A, Procedures of Investigation and Report (2 units); Education 290B, Bibliography (1 unit).
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

A student who was enrolled in an administration or supervision credential program by July 1, 1963, either elementary or secondary, will be permitted to continue that program and to earn the master's degree (if he is qualified) as outlined on his official program. A student who is not so enrolled will be required to follow the program for the credential and master's degree which is presently being developed in accordance with legislation enacted in 1961. A student who wishes to work toward the master's degree in administration or in supervision must either hold an administration or supervision credential or be formally admitted to the appropriate administration or supervision credential program. For further information, the student is referred to the Office of Advanced Credentials in the Division of Education (Education Building, Room 179).

### Pupil Personnel Services

A student who was enrolled by July 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. A student not so enrolled will be required to follow a program for the credential and the master's degree which is presently being developed in accordance with legislation enacted in 1961. A student who wishes to work toward the master's degree with a concentration in pupil personnel services must either hold the General Pupil Personnel Services Credential or be admitted to that credential program. For further information, the student is referred to the Office of Advanced Credentials in the Division 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 July 1, 1963, will be permitted to continue that program. If such a student has an official program outlined for the master's degree with a concentration in special education he will be permitted to continue this program as well until he either obtains the degree or is disqualified.

A student who is not enrolled in a program leading to the credential for teaching exceptional children by July 1, 1963, will be required to follow the program for the credential and master's degree with a concentration in special education which is presently being developed in accordance with legislation enacted in 1961. The new credential program will permit a student to complete a specialization in the teaching of exceptional children (either in the area of the mentally retarded or in the area of the speech and hearing handicapped) in lieu of the required minor in the standard teaching credentials. Additional course work will be required for the master's degree.

For further information the student is referred to the Office of Advanced Credentials in the Division of Education (Education Building, Room 179). For additional information on the credential, the student is also referred to a supplement to the General Catalog entitled *San Diego State College Teacher Education Curricula, 1963-1964*, which may be obtained from the Office of the Registrar.

### THE STANDARD TEACHING CREDENTIAL WITH A SPECIALIZATION IN JUNIOR COLLEGE TEACHING

The specific program for this credential is being developed in accordance with legislation enacted in 1961. Students who wish detailed information should secure a copy of *San Diego State College Teacher Education Curricula, 1963-1964*, from the Office of the Registrar, and should consult with the Coordinator of Junior College Programs, Room 124, Education Building.

### Admission Requirements

The admission requirements are essentially the same as those for secondary teaching credentials. For additional information, see the Coordinator of Junior College Programs.

### Course Requirements

Although details of credential requirements are pending action of the California State Board of Education, the following course pattern, based on current projections, is presented to assist students in tentative planning.

The student must complete a subject matter major (24 units) equivalent to that required for the appropriate master's degree. Candidates who earn the master's degree from this institution with a subject matter major will regularly qualify in this respect. Those with a master's or doctor's degree in subjects not taught in a junior college will need to have or subsequently earn credits in appropriate majors equivalent to those required for the master's degree at San Diego State College. Those with a master's or doctor's degree from another institution will have their work evaluated to determine equivalency.

San Diego State College will recommend for the credential only those candidates who have majored in subject matter fields for which the college is authorized to grant the master's degree. A list of these majors can be found in Part Three of this bulletin and in the section of the general catalog on the Graduate Division.

Minors for the credential will be authorized only in those subject matter fields for which minors are available for the bachelor's degree.

### Professional Courses in Teacher Education

Ten semester hours of professional education are required:

- |  |  |
|--|--|
| Education 201. The Junior College (2)                                  | Education 316. Directed Teaching (4)                                       |
| Education 223. Educational Psychology: Junior College (2)              | Directed teaching can be accomplished only in a junior college assignment. |
| Education 251. Instructional Methods and Materials: Junior College (2) |  |

### Relationship to the Master's Degree

To qualify for this credential, a student must meet the course requirements above, and he must either hold or obtain a master's degree. Students who do not hold a master's degree are referred to the Graduate Office and to the graduate adviser in the field of his proposed master's degree.

### 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 Division of Education: M. H. Schrupp, Ph.D.  
 Administrative Chairman: G. A. Koester, Ph.D.  
 Coordinator of Elementary Education: F. A. Ballantine  
 Coordinator of Secondary Education: E. G. Fulkerson  
 Coordinator of Administrative Studies: R. A. Houseman  
 Coordinator of Guidance Studies: D. D. Malcolm  
 Coordinator of Special Education Studies: Edna Koehn  
 Coordinator of Junior College Programs: A. M. Livingston  
 Coordinator of Graduate Programs: Edna Koehn  
 Graduate Advisers:  
 Elementary Curriculum and Instruction: P. J. Groff  
 Secondary Curriculum and Instruction: J. A. Apple, M. D. Alcorn  
 Elementary Administration and Supervision: Charles Lienert  
 Secondary Administration and Supervision: H. B. Holt  
 Elementary Pupil Personnel Services: L. E. Strom  
 Secondary Pupil Personnel Services: Gerald Person  
 Special Education: Edna Koehn  
 Audiovisual Education: J. S. Kinder  
 Professors: M. D. Alcorn, Ed.D.; P. S. Anderson, Ph.D.; J. A. Apple, Ed.D.; F. A. Ballantine, Ph.D.; Marguerite A. Brydegaard, Ph.D.; Kurt Friedrich, Ed.D.; E. G. Fulkerson, Ed.D.; C. M. Gjerde, Ph.D.; R. T. Gray, Ed.D.; D. W. Grisier, Ed.D.; R. A. Houseman, Ed.D.; J. J. Hunter, Ph.D.; J. S. Kinder, Ph.D.; G. A. Koester, Ph.D.; J. M. Linley, Ph.D.; D. D. Malcolm, Ph.D.; R. R. Nardelli, Ph.D.; Helen L. Prouty, Ph.D.; M. H. Schrupp, Ph.D.; J. R. Schunert, Ph.D.; J. P. Stone, Ph.D.; M. F. Stough, Ph.D.; R. Trimmer, Ph.D.; A. E. White, Ed.D.  
 Associate Professors: E. L. Anderson, Ed.D.; Guinivere E. Bacon, M.A.; D. L. Baker, Ed.D.; R. M. Briggs, Ed.D.; Paul Bruce, Ph.D.; Lois B. Campbell, M.A.; C. E. Crum, Ed.D.; C. J. Falk, S.T.D.; C. E. Fishburn, Ed.D.; J. S. Fisher, Ph.D.; G. F. Gates, Ed.D.; P. C. Gega, Ed.D.; P. J. Groff, Ed.D.; W. O. Hill, Ed.D.; Elizabeth J. Klemer, M.A.; Charles Lienert, Ed.D.; Gerald Person, Ph.D.; M. H. Petteys, Ed.D.; M. H. Platz, Ed.D.; J. A. Rodney, Ed.D.; J. L. Schmidt, Ph.D.; H. R. Smith, Ph.D.; Marguerite R. Strand, Ph.D.; W. H. Wetherill, Ph.D.  
 Assistant Professors: Phylliss Adams, Ed.D.; Aileen J. Birch, M.A.; Elizabeth Brendt, M.A.; Carol Charles, Ph.D.; H. M. Clements, Ph.D.; Elizabeth Creech, M.Ed.; E. A. Du Bois, Jr., Ed.D.; M. Epler, M.A.; P. Halfaker, Ed.D.; H. Holt, Ed.D.; H. Huls, Ph.D.; H. Ikeda, Ed.D.; J. E. Inskeep, Ph.D.; Doris Johnson, M.Ed.; Margaret La Pray, Ph.D.; A. M. Livingston, Ed.D.; Bette McVay, M.A.; Jane Plazak, M.A.; Eunice Rixman, M.M.; R. Ross, Ed.D.; M. K. Rowland, Ph.D.; R. Survey, Ph.D.; Arthur Singer, Jr., Ph.D.; L. E. Strom, Ed.D.; L. Tossas, Ed.D.; M. Agnes Walsh, M.A.; J. H. Wilding, Ed.D.

### COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN EDUCATION

#### UPPER DIVISION COURSES IN EDUCATION

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|---|--|
| 114. Interpretation of Early Childhood Behavior (3)         | 130-131. Elementary Education Practicum (Limit of 6 units) |
| 115. Guidance in Elementary Education (3)                   | 133. Children's Literature in Elementary Education (3)     |
| 118. Supervision of Child Welfare and Attendance (3)        | 135. Workshop in Elementary Education (3 or 6)             |
| 122. Reading in Secondary Education (3)                     | 137. Reading Difficulties (3)                              |
| 125. Organization and Administration of Music Education (2) | 141. Creating Audio-Visual Materials for Classroom Use (3) |
| 126. Workshop in Secondary Education (3 or 6)               | 143S. Workshop in Educational Television (6)               |
|   | 150. Psychological Testing (3)                             |

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|--|---|
| 151. Measurement and Evaluation in Elementary Education (3)                                      | 175. Curriculum and Methods for Teaching Mentally Retarded Children in the Secondary School (3) |
| 152. Measurement and Evaluation in Secondary Education (2)                                       | 176. Stuttering and Neurological Disorders (3)  |
| 170. Exceptional Children (3)  | 177. Audiometry (3)   |
| 171. Curriculum and Methods for Teaching Mentally Retarded Children in the Elementary School (3) | 178. The Teaching of Lip Reading (3)  |
| 172. Workshop for Teaching the Mentally Retarded (3-6)   | 190. Conference on the Teaching of Mathematics (1)  |
| 173. Vision Testing and Hygiene (2)  | 191. Guidance Conference (1)  |
| 174. Principles and Methods of Speech Correction (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.
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.

#### Educational Psychology

220. **Advanced Educational Psychology (3)**  
 Prerequisite: Education 110 or 111.  
 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 150, 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: Education 201 or concurrent registration in 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.
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. **Techniques of Pupil Appraisal (3)**  
Prerequisites: Psychology 104A and either Education 151 or 152.  
Techniques of collecting, assembling, and interpreting data about individual pupils for guidance purposes. Fieldwork required.
232. **Problems in Vocational Guidance (3)**  
Prerequisites: Education 230 and 231.  
To prepare counselors for vocational guidance in secondary schools. Emphasizes group and individual procedures for assisting pupils to understand and integrate vocational and self information.
233. **Guidance Counseling Techniques (3)**  
(Same course as Psychology 233)  
Prerequisite: Education 115, or Education 230, or Psychology 151.  
Designed for school counselors. To stress the understandings and procedures necessary for effective interviewing.
234. **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.
237. **Research in Guidance Problems (1-3)**  
Admission by permission of the Coordinator of Secondary Education and instructor.  
Individual study by graduate students who have demonstrated exceptional ability and a need for such work.
238. **Field Work in School Guidance (3)**  
Prerequisites: 12 units in guidance and related areas and consent of instructor.  
Application of the principles and procedures in testing, counseling, and related personnel work in the public school. Weekly seminar sessions with college and co-operating staff.
239. **Workshop in Pupil Personnel Services (3)**  
Prerequisites: Teaching experience and consent of director of workshop.  
Application of principles and procedures to specific situations for improvement of pupil personnel services. Individual problems emphasized.

## Elementary Education

240. **Curriculum Construction and Evaluation in Elementary Education (3)**  
Prerequisites: 12 units of work in elementary education and consent of instructor. Credit or concurrent registration in Education 290A-290B.  
Advanced study of the research in curriculum development, construction, and evaluation.
241. **Seminar in Arithmetic in Elementary Education (3)**  
Prerequisites: Education 130A. Credit or concurrent registration in Education 290A-290B.  
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: Education 130E and 137. Credit or concurrent registration in Education 290A-290B.  
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: Consent of instructor. Credit or concurrent registration in Education 290A-290B.  
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: Consent of instructor. Credit or concurrent registration in Education 290A-290B.  
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: 12 units in elementary education and consent of the instructor. Credit or concurrent registration in Education 290A-290B.  
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. Credit or concurrent registration in Education 290A-290B.  
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. Credit or concurrent registration in Education 290A-290B.  
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: Nine units in natural science and Education 131B, or consent of instructor. Credit or concurrent registration in Education 290A-290B.  
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. General Education in the Secondary School (3)**  
Prerequisites: 12 units in secondary education and consent of the instructor.  
A course designed for teachers in service. A study of the function and implementation of general education in the secondary school.
- 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. Federal, State, County and City School Organization and Administration (3)**  
Prerequisite: Possession of a valid teaching credential.  
A study of federal, state, county, and city school organization and administration including the interrelationships of the four levels.
- 262. The Organization and Administration of Elementary Schools (3)**  
Prerequisites: Valid general elementary credential, teaching experience, Education 115, 240, 260, and 270 and admission to program of Administrative Studies.  
A study of the problems of personnel, local finance, curriculum, school plant and community relations of elementary schools. Field project required.
- 263. The Organization and Administration of Secondary Schools (3)**  
Prerequisites: Possession of a valid general secondary credential, teaching experience, Education 230, 250, 260, and 270 and admission to program of Administrative Studies.  
A study of the problems of personnel, local finance, curriculum, school plant, transportation and community relations of secondary schools. Field project required.
- 264. Elementary School Supervision (3)**  
Prerequisites: General elementary credential, teaching experience, Education 115, 240, 260, and 270 and admission to program of Administrative Studies.  
Principles and practices of supervision and methods of evaluating instruction and the curriculum in elementary education. Field project required.

- 265. Secondary School Supervision (3)**  
Prerequisites: General secondary credential, teaching experience, Education 230, 250, 260, and 270 and admission to program of Administrative Studies.  
Principles and practices of supervision, curriculum, and teaching methods in secondary education. Field project required.
- 266. Field Work in Elementary School Administration and Supervision (3)**  
Prerequisites: Prior to registration in the course, admission to the program of Administrative Studies, completion concurrently of all other requirements for the elementary administration or supervision credential, and permission of local school administrator and instructor.  
Study of the administration and supervision of an elementary school with the co-operation of a local school administrator and under the supervision of a college staff member. Field projects required.
- 267. Field Work in Secondary School Administration and Supervision (3)**  
Prerequisites: Prior to registration in the course, admission to the program of Administrative Studies, completion concurrently of all other requirements for the secondary administration or supervision credential, and permission of local school administrator and the instructor.  
Study of the administration and supervision of a secondary school with the co-operation of a local school administrator and under the supervision of a college staff member. Field projects required.
- 268. Seminar in School Administration (3)**  
Prerequisite: Consent of instructor.  
An intensive study of research on selected problems in the field of school administration. Provision will be made for individual work on special topics of interest to students.
- 269A-269B. Seminar in School Building Construction and Utilization (3-3)**  
Prerequisite: Possession of supervision or administration credential, or consent of instructor. Completion of or concurrent registration in 269A is prerequisite to 269B.  
A study of all aspects of school buildings and grounds including problems of remodeling existing facilities and the development of new facilities from the planning stage to complete utilization.
- 270. School Finance, Business Administration, and Law (3)**  
Prerequisite: Possession of a valid teaching credential or consent of instructor.  
A study of public school finance at federal, state and local levels; an analysis of the business administration of schools and a study of school law as it applies to finance, administration and other aspects of school administration.
- 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 170.  
Principles, trends and research in the education of exceptional children.
- 273. Seminar in Education of the Mentally Retarded (3)**  
Prerequisites: Education 171 or 175 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.

- 278. Educational Leadership (3)**  
Prerequisite: Possession of a valid teaching credential or consent of instructor.  
An analysis of the factors and practice in 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.

### *Procedures of Investigation*

- 290A. Procedures of Investigation and Report (2)**  
Methods of investigation, data analysis, and reporting. Procedures for selecting topics and writing papers, projects, and thesis. Exercises in locating, selecting, analyzing, and summarizing professional literature. For majors in education, concurrent registration in 290B is required.

- 290B. Bibliography (1)**  
Exercises in the use of basic reference books, journals, and specialized bibliographies preparatory to a seminar project or to the writing of a thesis.

- 295A-295B. Seminar (3-3)**  
Prerequisites: Education 290 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.

### *Internship*

- 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.

- 360. Internship in Public School Administration and Supervision (2-6)**  
Application to take the course should be made during the preceding semester.  
An intensive analysis and extensive practical application of problems and procedures in school administration and supervision. Permission of school district administrator and college staff member 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.

### *NDEA Guidance Institute Courses*

- I-231. Theory and Process of Pupil Appraisal (4)**  
Three lectures and three hours of laboratory.  
Prerequisite: Enrollment in NDEA Guidance Institute.  
Adaptation of Education 231, designed for NDEA Guidance Institute.

- I-232. Theory and Process of Vocational Choice (4)**  
Three lectures and three hours of laboratory.  
Prerequisite: Enrollment in NDEA Guidance Institute.  
Adaptation of Education 232, designed for NDEA Guidance Institute.

- I-233. Theory and Process of Counseling (4)**  
Three lectures and three hours of laboratory.  
Prerequisite: Enrollment in NDEA Guidance Institute.  
Adaptation of Education 233, designed for NDEA Guidance Institute.

- I-234. Theory and Process of Group Guidance (2)**  
One lecture and three hours of laboratory.  
Prerequisite: Enrollment in NDEA Guidance Institute.

- I-255A-225B. Determinants of Human Behavior (3-3)**  
Prerequisite: Enrollment in NDEA Guidance Institute.  
I-225A deals with psychological and psycho-physiological determinants; I-225B with social, cultural, and semantic determinants.

- I-239. Professional Seminar in Guidance (2)**  
Prerequisite: Enrollment in NDEA Guidance Institute.



## ENGINEERING

### GENERAL INFORMATION

The Division of Engineering offers graduate study leading to the Master of Science degree in mechanical engineering. This curriculum is 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.

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 engineering or a closely related field from an institution acceptable to the Division 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.

### SPECIFIC REQUIREMENTS FOR THE MASTER OF SCIENCE DEGREE

In addition to meeting the requirements for classified graduate standing as stated above, the student must satisfy the general requirements for the master's degree as described in Part Three of this bulletin. With the approval of the division the student 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 outline:

Twelve units of 200-numbered courses in engineering, excluding Engineering 297, 298, and 299.

Twelve units of approved 100- and 200-numbered courses in the Divisions of Engineering and Physical Sciences.

Six units of electives.

### ADVANCEMENT TO CANDIDACY

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

### TEACHING ASSISTANTSHIPS

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 College.

## FACULTY

Chairman, Division of Engineering: M. P. Capp, M.S.

Professors-in-Charge: W. H. Shutts, Aerospace Engineering and Engineering Mechanics; S. H. Stone, Civil Engineering; C. R. Lodge, Electrical Engineering; C. Morgan, Mechanical Engineering.

Graduate Adviser: Charles Morgan, Mechanical Engineering.

Professors: M. P. Capp, M.S.; C. R. Lodge, Ph.D.; C. Morgan, M.S.; W. H. Shutts, Ph.D.; S. H. Stone, M.S.E.; C. R. Walling, E.E.

Associate Professors: E. G. Bauer, M.S.; R. A. Fitz, Ph.D.; P. E. Johnson, M.S.C.E.; F. T. Quiett, M.S.; M. V. R. Rao, Ph.D.; H. L. Stone, B.S.

Assistant Professors: R. L. Bedore, M.S.M.E.; H. L. Bilterman, M.A.; R. Borst, M.S.; W. L. Brown, E.E.; G. A. Burns, M.S.; J. F. Conly, Ph.D.; H. J. Dahlke, M.S.; S. Dharmajan, Ph.D.; L. A. Hoel, D.Eng.; R. L. Mastin, Ae.E.; D. L. Skaar, B.E.E.

## MECHANICAL ENGINEERING

For the Master of Science degree in Mechanical Engineering, in addition to fulfilling the requirements as stated above, the student must have obtained his bachelor's degree in mechanical engineering or a closely associated field of engineering or physical science. If the graduate adviser deems the student's background insufficient in the field, the student will be required to complete additional undergraduate courses in mechanical engineering while in an unclassified graduate standing. Unit credit for such courses will be in addition to the 30 units required for the master's degree.

The student must select one area of concentration from those groups identified below and, in consultation with the graduate adviser, prepare a program of studies according to the following criteria:

(a) Twelve units of 200-numbered courses in mechanical engineering, including nine units in the area of concentration (see Groups A and B below) excluding Engineering 297, 298, and 299.

(b) Twelve units of 100- and 200-numbered courses in the Division of Engineering and in the Physical Sciences, including the thesis if elected.

(c) Six units of electives.

### AREAS OF CONCENTRATION IN MECHANICAL ENGINEERING

Group A: Thermodynamics and Heat Power

M.E. 212, Gas Dynamics (3)

M.E. 213, Aircraft and Missile Propulsion (3)

M.E. 214A-214B. Thermodynamics (3-3)

M.E. 215A-215B. Heat Transfer (3-3)

Group B: Engineering Design

M.E. 220, Mechanical Vibrations (3)

M.E. 221, Stress Analysis (3)

M.E. 222, Dynamics of Machinery (3)

M.E. 224, Fluid Power and Control Systems (3)



## COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN MECHANICAL ENGINEERING

### UPPER DIVISION COURSES

- |   |   |
|---|---|
| <p>120A. Structural Analysis I (3)<br/>         120B. Structural Analysis II (3)<br/>         125. Sanitary Engineering (3)<br/>         130. Network Analysis (4)<br/>         131. Electromechanical Control Devices (3)<br/>         132. Time-Domain Analysis of Linear Networks (3)<br/>         134A. Analysis and Design of Electronic Circuits (4)<br/>         134B. Analysis and Design of Electronic Circuits (4)<br/>         137. Communication Networks (3)<br/>         139. Advanced Field Theory (4)<br/>         140. Principles of Heat Transfer (3)<br/>         142. Fuels and Combustion (3)<br/>         143. Gas Dynamics (3)</p> | <p>147. Introduction to Mechanical Vibrations (3)<br/>         149. Kinematics (3)<br/>         150A. Subsonic Aerodynamics (3)<br/>         150B. Supersonic Aerodynamics (3)<br/>         151A. Aeronautical Stress Analysis (3)<br/>         151B. Aeronautical Stress Analysis (3)<br/>         152. Aircraft Propulsion Systems (3)<br/>         153. Aerospace Flight Mechanics (3)<br/>         160A-160B. Principles of Chemical Engineering (3-3)<br/>         181. Hydrodynamics (3)<br/>         182. Transistor Circuit Analysis (3)<br/>         186. Advanced Resistance of Materials (3)<br/>         187. Methods of Analysis (3)<br/>         189. Linear Feedback Control Systems (3)</p> |
|---|---|

### GRADUATE COURSES

#### Mechanical Engineering

- ME 200. Seminar in Mechanical Engineering (2 or 3)**  
 Prerequisite: Consent of the graduate adviser and instructor.  
 An intensive study in one of the fields listed below. May be repeated with new subject matter for additional credit.
- A. Thermodynamics and Fluid Flow
  - B. Cryogenics
  - C. Engineering Materials
  - D. Engineering Systems
  - E. Operations Research in Engineering
  - F. Nuclear Engineering
  - G. Mechanical Design
- 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 inter-cooling. 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 214A-214B. Thermodynamics (3-3)**  
 Prerequisites: Engineering 148; Mathematics 118B or consent of instructor. M.E. 214A is prerequisite to M.E. 214B.  
 A review of classical thermodynamics. The utilization of the methods of kinetic theory and statistical mechanics. Thermodynamics of mixtures. Irreversibility. Comparison of classical and irreversible thermodynamics.
- ME 215A-215B. Heat Transfer (3-3)**  
 Prerequisites: Engineering 118 and Mathematics 118B or consent of instructor. M.E. 215A is prerequisite to M.E. 215B.  
 Semester I. Convection heat transfer, high speed flow, mass transfer effects. Boiling heat transfer. Introduction to conduction heat transfer.  
 Semester II. Conduction heat transfer, multidimensional conduction processes, transient analyses. Solid body and gaseous radiation and their measurements.

#### ME 220. Mechanical Vibrations (3)

Prerequisite: Engineering 147 and credit or concurrent registration in Mathematics 118B.

The application of vibration analysis to the problems of mechanical design, including vibration control, vibration instrumentation, and the response of machines, structures, and mechanical systems to various kinds of excitation. Approximate and digital computer solutions of vibration problems. (Formerly entitled: Vibration Analysis.)

#### ME 221. Stress Analysis (3)

Prerequisites: Engineering 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 gauges, and analogs in determining static, dynamic and residual stress distributions.

#### ME 222. Dynamics of Machinery (3)

Prerequisites: Engineering 146, 149, and credit or concurrent registration in Mathematics 118B.

Mathematical analysis of motion, stresses and deflections as applied to the design of machines. Dynamics of constrained systems; stability and system control. Application to systems involving mechanical, electrical and fluid links.

#### 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.

#### Aerospace Engineering

#### 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; aero-elastic instability, vibration modes, divergence, loss of control and alteration of lift distribution; introduction to flutter analysis.

#### Civil Engineering

#### CE 200. Seminar (2 or 3)

Prerequisite: Consent of instructor.

Advanced study of or within one phase of civil engineering such as hydraulics, surveying, hydrology, transportation, structures, soil mechanics and foundations, sanitary engineering. May be repeated with new content for additional credit.

#### CE 201. Advanced Theory of Structures (3)

Prerequisites: Engineering 120B and Mathematics 118A.

Analysis of statically indeterminate structures by virtual work. Advanced treatment by slope deflection, moment distribution; column analogy. Analysis of arches; secondary stresses in trusses; advanced treatment of influence lines.

#### Electrical Engineering

#### EE 201. Non-linear Feedback Control Systems (3)

Prerequisite: Engineering 189 or 190C or Physics 153.

Analysis and synthesis of feedback control systems containing one or more non-linear elements. Use of describing functions: Introduction to sampled-data systems.

#### 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. (Formerly Engineering 223.)

**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 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 E.M. 243. Further work in laminar and turbulent flow and boundary layer theory. Diffusion. Applications to engineering problems.

**Engineering**

**E 297. 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 students study extensively some foreign language.

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

In addition to meeting the requirements for classified graduate standing and the general 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, English 299, English 192 (if not previously taken), English 223 (or a reading knowledge of Latin), and at least one seminar. The student must demonstrate a reading knowledge of French or German.

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

**SPECIFIC REQUIREMENTS FOR THE MASTER OF ARTS DEGREE  
FOR TEACHING SERVICE**

In addition to meeting the requirements for classified graduate standing and the general 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. The student must demonstrate a reading knowledge of a foreign language. The Department of English strongly recommends French or German. (The student must also satisfy the requirements for a California school service credential.)

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.

**ADVANCEMENT TO CANDIDACY**

In addition to meeting the requirements for advancement to candidacy described in Part Three of this bulletin, students must pass a qualifying examination in English and American Literature.



## TEACHING ASSISTANTSHIPS AND SCHOLARSHIPS

Teaching assistantships in English are available to a limited number of qualified students. Application blanks and additional information may be secured from the Dean of the College.

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: E. A. Block, Ph.D.

Graduate Adviser: J. N. Tidwell

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

Professors: J. R. Adams, Ph.D.; E. A. Block, Ph.D.; Gail Burnett, Ph.D.; S. L. Gulick, Ph.D.; Harriet Haskell, Ph.D.; F. L. Johnson, Ph.D.; C. B. Kennedy, Ph.D.; E. L. Marchand, 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.

Associate Professors: J. R. Baker, Ph.D.; L. H. Frey, Ph.D.; J. P. Monteverde, Ph.D.; W. A. Perkins, Ph.D.; G. A. Sandstrom, Ph.D.; Lowell Tozer, Ph.D.; Kingsley Widmer, Ph.D.

Assistant Professors: J. W. Dickinson, Ph.D.; J. H. Gellens, Ph.D.; Eugene Green, Ph.D.; G. C. Gross, Ph.D.; J. C. Hinkle, M.A.; M. K. Singleton, Ph.D.; Kermit Vanderbilt, Ph.D.; Dorothy C. Wanlass, Ph.D.

## COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN ENGLISH

### UPPER DIVISION COURSES

- |  |   |
|--|---|
| 101A-101B. Modern Continental Fiction (3-3)                        | 131. American Literature (1820-1860) (3)          |
| 106. Creative Writing (3)  | 132. The Frontier and American Literature (3)     |
| 110. Individual Reading (1)  | 133. American Literature (1860-1910) (3)          |
| 113. American English (3)  | 134. American Literature: 1910 to the Present (3) |
| 115. The Bible as Literature (3)                                   | 143A-143B. The English Novel (3-3)                |
| 116A-116B. The Age of Elizabeth (3-3)                              | 149. The Study of Poetry (3)                      |
| 117A-117B. Shakespeare (3-3)                                       | 151. Chaucer (3)                                  |
| 118A-118B. Eighteenth Century English Literature (3-3)             | 152A-152B. World Drama (3-3)                      |
| 119A. English Romantic Poetry (3)                                  | 162. The Writing of Fiction (3)                   |
| 119B. Victorian Poetry (3)   | 189. Studies in American Folklore (3)             |
| 120A. The Seventeenth Century: Milton (3)                          | 191. Advanced Composition (3)                     |
| 120B. The Seventeenth Century: Metaphysical and Cavalier Poets (3) | 192. The English Language (3)                     |
| 126A. Romantic and Victorian Prose (3)                             | 195A. History of Literary Criticism (3)           |
| 126B. Late Nineteenth Century British Prose (3)                    | 195B. Theory and Practice of Modern Criticism (3) |
| 129A. Early Modern British Literature (3)                          | 196. General Linguistics (3)                      |
| 129B. Contemporary British Literature (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.

### 227. English Linguistics (3)

Prerequisites: Twelve units of upper division work in English, including either English 192 or 196.

The phonological, grammatical, and lexical structure of English.

### 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 Foreign Languages, in the Division of the Humanities, offers graduate study leading to the Master of Arts degree with a major in French, and to the Master of Arts degree for teaching service with a concentration in French. Teaching credentials with majors and minors in French are also available.

The staff in charge of the graduate program in French is composed of professors whose native tongue is French, or who have traveled extensively in France and in other European countries, 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 serves 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.

### SPECIFIC REQUIREMENTS FOR THE MASTER OF ARTS DEGREE

In addition to meeting the requirements for classified graduate standing and the general 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 including French 201, 214, 215, 220, 290, and 294 or 299.

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

In addition to meeting the requirements for classified graduate standing and the general requirements for the master's degree as described in Part Three of this bulletin, the student must complete a graduate program with a concentration consisting of at least 18 units in French, including French 220, 290, and 294, and six units selected from French 201, 214, or 215. The comprehensive examination, which is required in lieu of a thesis (Plan B) for the master's degree for teaching service with a concentration in French, consists of a three-hour written examination on language and literature, a two-hour oral examination in French civilization, and oral explanation of linguistic constructions and literary passages.

The student must also satisfy the requirements for a California school service credential.

### SPECIFIC REQUIREMENTS FOR CREDENTIALS

Before taking a directed teaching assignment in French, the candidate for a teaching credential must pass proficiency examinations, oral and written, administered by the Department of Foreign Languages, in the language and its area civilization. French 40-41 or French 140-141 prepare for this latter examination in the area civilization. The candidate must consult with the chairman of the Department of Foreign Languages for permission to take these examinations.

In the graduate program for a secondary teaching credential, the candidate must include French 220 and three units from French 201, 214, or 215.

Students who wish to obtain the Master of Arts degree in French in connection with the junior college credential will be required to take French 294 and to pass the comprehensive examination required in Plan B in lieu of a thesis.

### ADVANCEMENT TO CANDIDACY

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

### FACULTY

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

Chairman, Department of Foreign Languages: C. H. Baker, Ph.D.

Credential Adviser: L. N. Messier

Graduate Adviser: L. N. Messier

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

Associate Professor: Guerard Piffard, Ph.D.

Assistant Professors: Marjorie Cox, M.A.; J. M. Glasgow, M.A.; Frederick Jenkins, M.A.

### COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN FRENCH

#### UPPER DIVISION COURSES

- |  |  |
|--|--|
| 105A-105B. Modern French Drama (3-3)           | 110A-110B. Modern French Novel (3-3)                     |
| 107A-107B. Eighteenth Century Literature (3-3) | 111A-111B. Seventeenth Century Dramatic Literature (3-3) |
|  | 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. Old French (3)  
Prerequisite: 18 units of upper division French.  
The elements of the phonology and morphology of Old French; intensive reading and translation of representative texts.
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.
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. Required of all candidates for the Master of Arts degree with the general secondary or junior college credential.

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.

Master's degree candidates in general secondary or junior college credential programs are expected to substitute French 294 and a comprehensive examination in lieu of the thesis.

## 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. A major in geography represents the most desirable undergraduate preparation; however, undergraduate majors in other related fields are acceptable upon approval of the departmental graduate advisory committee.

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 should meet with the department chairman on the first day of the registration week.

### SPECIFIC REQUIREMENTS FOR THE MASTER OF ARTS DEGREE

In addition to meeting the requirements for classified graduate standing and the general 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 15 or more units must be in 200-numbered courses including Geography 210, 280, 295, 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. Students may elect Plan A or Plan B. All students must demonstrate a reading knowledge of one foreign language, preferably German, French, Spanish, or Russian.

### ADVANCEMENT TO CANDIDACY

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

### TEACHING ASSISTANTSHIPS AND SCHOLARSHIPS

Teaching assistantships in geography are available to a limited number of qualified students. Application blanks and additional information may be secured from the Dean of the College.

### FACULTY

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

Chairman, Department of Geography: C. C. Yahr, Ph.D.

Graduate Adviser: R. W. Richardson

Professors: L. C. Post, Ph.D.; R. W. Richardson, Ph.D.; Alvena Storm, M.A.; J. W. Taylor, Ph.D.

Associate Professors: D. I. Eidemiller, Ph.D.; C. C. Yahr, Ph.D.

Assistant Professors: C. H. Cruttenden, Ph.D.; W. A. Finch, Jr., M.A.; R. A. Lewis, Jr., M.A.; Harvey Vogel, M.A.



## COURSES ACCEPTABLE ON MASTER OF ARTS DEGREE PROGRAMS IN GEOGRAPHY

### UPPER DIVISION COURSES

- |   |   |
|---|---|
| 105. Soils and Natural Vegetation (3)   | 129. Oceania (3)                                      |
| 110. Historical Geography (3)           | 130. Central and Southern Africa (3)                  |
| 120. California (3)                     | 150. Political Geography (3)                          |
| 121. United States (3)                  | 151. Economic Geography: Primary Production (3)       |
| 122. Canada and Alaska (3)              | 152. Industrial Geography (3)                         |
| 123. Middle America (3)                 | 155. Urban Geography (3)                              |
| 124. South America (3)                  | 181B. Maps and Graphic Methods (3)                    |
| 125. North Africa and the Near East (3) | 182. Use and Interpretation of Aerial Photographs (3) |
| 126. Europe (3)                         | 199. Special Study (1-6)                              |
| 127. Soviet Union (3)                   |   |
| 128. Southern and 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.

### 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 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.

### 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.

### TEACHING ASSISTANTSHIPS AND SCHOLARSHIPS

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

### FACULTY

Chairman, Division of the Physical Sciences: D. H. Robinson, Ph.D.  
Chairman, Department of Geology: Blakemore Thomas, Ph.D.  
Graduate Adviser: Ellis Roberts  
Professors: Ellis Roberts, Ph.D.; Blakemore Thomas, Ph.D.  
Associate Professors: Baylor Brooks, A.B.; R. G. Gastil, Ph.D.  
Assistant Professors: E. C. Allison, M.A.; A. M. Bassett, Ph.D.; R. W. Berry, M.A.; E. D. Milow, B.S.; R. L. Threeth, Ph.D.



## COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN GEOLOGY

### UPPER DIVISION COURSES

- |                                     |                            |
|-------------------------------------|----------------------------|
| 107. Principles of Stratigraphy (3) | 120. Ore Deposits (3)      |
| 110. Introduction to Geophysics (3) | 121. Petroleum Geology (3) |
| 112. Advanced Geophysics (3)        | 125. Petrography (4)       |
| 116. Micropaleontology (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 of a selected topic in advanced geology. May be repeated with new subject matter for additional credit.

#### 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.

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

## GERMAN

### GENERAL INFORMATION

The Department of Foreign Languages, in the Division of Humanities, offers graduate study leading to the teaching major or minor in German.

### SPECIFIC REQUIREMENTS FOR CREDENTIALS

Before taking a directed teaching assignment in German, the candidate for the credential must pass proficiency examinations, oral and written, administered by the Department of Foreign Languages, in the language and its area civilization. German 40-41 or German 140-141 prepare for this examination in the area civilization. The candidate must consult with the chairman of the Department of Foreign Languages for permission to take these examinations.

In the graduate program for a secondary teaching credential, the candidate must include German 201 and three units selected from German 204, 205, or 206.

### FACULTY

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

Chairman, Department of Foreign Languages: C. H. Baker, Ph.D.

Credential Adviser: L. N. Messier, Ph.D.

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

Associate Professors: Richard Lawson, Ph.D.; Geurard Piffard, Ph.D.

Assistant Professors: Svein Øksenholt, Ph.D.; H. W. Paulin, Ph.D.

### GRADUATE COURSES

#### 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.

#### 204. Contemporary German Prose Fiction (3)

Prerequisite: 18 units of upper division German.

Studies in the 20th century German novel or short story.

#### 205. German Lyric Poetry from Goethe to Rilke (3)

Prerequisite: 18 units of upper division German.

The major German lyric poets from the end of the 18th century to the beginning of the 20th century.

#### 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.

#### 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.

#### 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.



## 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.

### 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 general requirements for the Master of Arts degree as described in Part Three of this bulletin. The concentration consists of 18 units in health education and related courses selected from courses listed as applicable on master's degree programs, of which at least 12 units must be in 200-numbered courses. Education 290A-290B and Health Education 299 are required courses.

The student must also satisfy the requirements for a California school service credential.

### ADVANCEMENT TO CANDIDACY

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

### TEACHING ASSISTANTSHIPS

Teaching assistantships in health education are available to a limited number of qualified students. Application blanks and additional information may be secured from the Dean of the College.

### FACULTY

Chairman, Division of Health Education, Physical Education, and Recreation:  
W. L. Terry, Ed.D.  
Chairman, Department of Health Education: R. M. Grawunder, Ed.D.  
Credential Advisers: Angela M. Kitzinger; W. H. Lauritsen  
Graduate Adviser: F. L. Scott  
Professors: Angela M. Kitzinger, Ph.D.; W. H. Lauritsen, Ph.D.  
Associate Professors: R. M. Grawunder, Ed.D.; L. A. Harper, Ed.D.  
Assistant Professors: W. C. Burgess, Ed.D.; A. C. McTaggart, Ph.D.; Edward Mileff, Ed.D.

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

### UPPER DIVISION COURSES

- |  |   |
|--|---|
| 145. Safety Education and Accident Prevention (3)    | 154. Workshop in Health Education (2)                 |
| 151. Health Education for Secondary Teachers (2)     | 175. Health in Later Maturity (3)                     |
| 152. School Health Instruction Programs (3)          | 181. Health and Medical Care (3)                      |
| 153. Administration of the School Health Program (3) | 185. Critical Analysis of Professional Literature (3) |
|  | 190. Introduction to Public Health (3)                |
|  | 191. Supervised Field Experience (1-3)                |
|  | 199. Special Study (1-6)                              |

### GRADUATE COURSES

200. Evaluation Procedures in Physical Education, Health Education and Recreation (3)  
(Same course as Physical Education 200)  
A study of tests and measurements in the profession with practice in their use, construction and interpretation of results.
202. Problems in Health Education (3)  
Current problems in health education, studied through a review of the literature, discussion of trends, observation of school situations, together with the analysis and evaluation of actual problems. Written reports required.
205. Curriculum in Physical Education and Health Education (3)  
(Same course as Physical Education 205)  
Analysis of current curricula in physical education and health education, with special emphasis upon curriculum construction and evaluation.
210. Seminar (3)  
Prerequisites: Major or minor in health education, physical education, or a closely related area, or consent of instructor.  
Seminars are offered in the following areas of health education. None of the fields may be repeated for credit.  
A. Stimulants and depressants  
B. Communicable and noncommunicable disease  
C. Dental health
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.



## 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.

### SPECIFIC REQUIREMENTS FOR THE MASTER OF ARTS DEGREE

In addition to meeting the requirements for classified graduate standing and the general 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 one 6-unit seminar 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 general 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.  
(Students must also satisfy the requirements for a California school service credential.)

### ADVANCEMENT TO CANDIDACY

In addition to meeting the general requirements for advancement to candidacy as described in Part Three of this bulletin, students majoring in history must satisfy the language requirement before they will be recommended for advancement to candidacy.

### 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: J. E. Merrill, Ph.D.

Graduate Adviser: A. P. Nasatir

Credential Adviser: D. S. Milne

Professors: A. T. Johnson, M.A.; A. P. Nasatir, Ph.D.; Katherine Ragen, Ph.D.; L. U. Ridout, Ph.D.; K. J. Rohlfleisch, Ph.D.; C. R. Webb, Jr., Ph.D.

Associate Professors: W. F. Hanchett, Ph.D.; J. E. Merrill, Ph.D.; S. J. Pincetl, Jr., Ph.D.; D. L. Rader, Ph.D.; Martin Ridge, Ph.D.; W. R. Wineman, Ph.D.

Assistant Professors: Brice Harris, Jr., Ph.D.; S. I. Cutler, Ph.D.; N. F. Norman, Ph.D.; R. T. Ruetten, Ph.D.

## COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN HISTORY

### UPPER DIVISION COURSES

- |  |  |
|--|--|
| 111A-111B. Ancient History (3-3)   | 171A-171B. Rise of the American Nation (3-3)   |
| 121A-121B. Europe in the Middle Ages (3-3)                                       | 172A-172B. Development of the Federal Union (3-3)                                      |
| 131A-131B. Renaissance and Reformation (3-3)                                     | 173A-173B. Civil War and Reconstruction: The United States from Jackson to Grant (3-3) |
| 141A-141B. Europe in the 17th and 18th Centuries (3-3)                           | 174. Emergence of the United States as a World Power (3)                               |
| 142A. The French Revolution and Napoleonic Era (3)                               | 175A-175B. The United States in the Twentieth Century (3-3)                            |
| 142B. Modern France (3)  | 176A-176B. American Foreign Policy (3-3)   |
| 143A-143B. Intellectual History of Europe in the 19th Century (3-3)              | 177A-177B. Constitutional History of the United States (3-3)                           |
| 144A-144B. Europe in the 20th Century (3-3)                                      | 179A-179B. Intellectual History of the American People (3-3)                           |
| 146A-146B. Germany and Central Europe (3-3)                                      | 181A-181B. The Westward Movement (3-3)   |
| 147A-147B. Russia and the Soviet Union (3-3)                                     | 182. The Spanish Borderlands and the Southwest to 1821 (3)                             |
| 151A-151B. England (3-3)   | 183. The Modern Southwest (3)  |
| 156. The Byzantine Empire and Its Successors (3)                                 | 189. California (3)  |
| 157. The Arab States, Israel, and Iran (3)                                       | 190. Southeast Asia (3)  |
| 158A-158B. Africa (3-3)  | 191A-191B. The Far East (3-3)  |
| 160A-160B. Latin America (3-3)   | 193. China (3)   |
| 161. Mexico (3)  | 194. Japan (3)   |
| 162. Argentina, Brazil, and Chile (3)  | 196. The Indian Sub-Continent (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.



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

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

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

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

**276A-B. Seminar in Diplomatic History (3-3)**

Prerequisite: Permission of instructor. History 276A is prerequisite to 276B.  
Selected topics in recent diplomatic relations.

**281A-B. Seminar in the History of the West and California (3-3)**

Prerequisite: Permission of instructor. History 281A is prerequisite to 281B.  
Directed research in various topics in the history of the West and California.

**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 (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.

**COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS  
IN INDUSTRIAL ARTS**

**HOME ECONOMICS**

**GENERAL INFORMATION**

The Department of Home Economics, in the Division of the Fine Arts, offers graduate study for secondary teaching credentials.

**FACULTY**

Chairman, Division of the Fine Arts: G. N. Sorenson, M.A.  
Chairman, Department of Home Economics: Helen L. Dorris, M.S.  
General Secondary Credential and Graduate Adviser: Nona H. Cannon  
Associate Professors: Nona H. Cannon, Ed.D.; Norita N. Comin, M.A.; Helen L. Dorris, M.S.; Ruth A. Talboy, M.A.; Alice E. Thomas, M.A.  
Assistant Professor: Mary Martin, 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. (Formerly Home Economics 200A.)

**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. (Formerly Home Economics 200C.)

**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. (Formerly Home Economics 200B.)

**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. (Formerly Home Economics 200E.)

**274. Seminar: Marriage Adjustment (3)**

Prerequisite: Home Economics 179.  
Individual study, seminar reports, and group discussion of selected topics in marriage adjustment. (Formerly Home Economics 200F.)

**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. (Formerly Home Economics 200D.)

**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-radio, photography, industrial drawing, comprehensive general shop 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.

### 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 general 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 290A-290B and Industrial Arts 299 are required courses.

### ADVANCEMENT TO CANDIDACY

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

### TEACHING ASSISTANTSHIPS

Teaching assistantships in industrial arts are available to a limited number of qualified students. Application blanks and additional information may be secured from the Dean of the College.

### FACULTY

Chairman, Division of the Physical Sciences: D. H. Robinson, Ph.D.  
Chairman, Department of Industrial Arts: F. J. Irgang, Ph.D.  
Graduate Adviser: W. C. Anderson  
Credential Adviser: W. C. Anderson  
Professor: L. W. Luce, Ed.D.  
Associate Professors: W. C. Anderson, Ph.D.; F. J. Irgang, Ph.D.; W. L. McLoney, M.A.; D. W. Thiel, Ph.D.  
Assistant Professors: W. B. Ford, B.E.; J. D. McMullen, Ed.D.; H. L. Marsters, M.A.; J. B. Morgan, Ed.D.; R. D. O'Dell, M.A.

## COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN INDUSTRIAL ARTS

### UPPER DIVISION COURSES

- |   |  |
|---|--|
| 101. Handicrafts for Teachers (3)                                   | 153. Materials and Techniques for Teaching General Woodworking (3) |
| 102. Materials and Techniques for Teaching Handicrafts (3)          | 162. Electricity-Radio for Teachers (3)                            |
| 105S. Construction Activities for Teachers (3)                      | 163. Materials and Techniques for Teaching Electricity-Radio (3)   |
| 111. General Shop for Teachers (3)                                  | 172. Transportation for Teachers (3)                               |
| 112. Materials and Techniques for Teaching General Shop (3)         | 173. Materials and Techniques for Teaching Transportation (3)      |
| 122. Industrial Drawing for Teachers (3)                            | 182. Graphic Arts for Teachers (3)                                 |
| 123. Materials and Techniques for Teaching Industrial Drawing (3)   | 183. Materials and Techniques for Teaching Graphic Arts (3)        |
| 132. General Metalworking for Teachers (3)                          | 185. Photography for Teachers (3)                                  |
| 133. Materials and Techniques for Teaching General Metalworking (3) | 186. Advanced Photography (3)                                      |
| 152. General Woodworking for Teachers (3)                           | 190. Experimental Shop (1 or 2)                                    |
|   | 193. Industrial Arts Organization and Management (2)               |
|   | 194. Recent Trends in Industrial Arts Education (2)                |
|   | 199. Special Study (1-6)   |

### GRADUATE COURSES

200. Seminar (3)  
Prerequisite: Consent of instructor.  
An intensive study of a selected topic in advanced industrial arts. May be repeated with new subject matter for additional credit.
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 general shop. Stress on project design and visual materials. May be repeated with new materials for additional credit.
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: Consent of instructor, Industrial Arts 200 and industrial arts teaching experience.

Application of the principles of shop organization, management and planning in reference to the objectives of industrial arts in development of school programs. May be repeated with different material to a total of six units of credit.

### 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.

### SPECIFIC REQUIREMENTS FOR THE MASTER OF ARTS DEGREE

In addition to meeting the requirements for classified graduate standing and the general 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 290 and Mathematics 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 general 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.

The student must also satisfy the requirements for a California school service credential.

### 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:

- Complete 12 units of 200-numbered mathematics courses, not including Mathematics 290 or 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.)



## ADVANCEMENT TO CANDIDACY

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

## TEACHING ASSISTANTSHIPS

Teaching assistantships in mathematics are available to a limited number of qualified students. Application blanks and additional information may be secured from the Dean of the College.

## FACULTY

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

Chairman, Department of Mathematics: N. B. Smith, Ph.D.

Graduate Advisers: Master of Arts (major), L. J. Warren; Master of Arts (Teaching), M. F. Willerding; Master of Science, V. C. Harris

Credential Adviser: J. E. Eagle

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

Associate Professors: G. A. Becker, Ph.D.; C. B. Bell, Jr., Ph.D.; C. V. Holmes, Ph.D.; P. W. Shaw, Ph.D.; L. J. Warren, Ph.D.; Margaret F. Willerding, Ph.D.

Assistant Professors: H. G. Bray, Ph.D.; C. B. Burton, Ph.D.; Helen Clark, B.A.; E. I. Deaton, Ph.D.; W. E. deMalignon, Ph.D.; A. T. Emerson, B.S.; Y. K. Feng, M.A.; L. D. Fountain, Ph.D.; H. A. Gindler, Ph.D.; R. B. Killgrove, M.A.; Betty Kvarda, Ph.D.; G. C. Lopez, Ph.D.; J. M. Moser, Ph.D.; Daniel Saltz, Ph.D.; C. B. Spangler, M.S.; R. L. Van de Wetering, Ph.D.

## COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN MATHEMATICS

### UPPER DIVISION COURSES

- |  |   |
|--|---|
| 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)                       | 170. Partial Differential Equations (3)                               |
| 119. Differential Equations (3)                      | 175. Functions of a Complex Variable (3)                              |
| 121A-121B. Advanced Calculus (3-3)                   | *181A-181B. Selected Topics of Secondary Mathematics (2-2)            |
| 124. Vector Analysis (3)                             | *187A-187B. Probability and Statistics for High School Teachers (2-2) |
| 134. Probability (3)                                 | 196. Advanced Topics in Mathematics (2 or 3)                          |
| 135A-135B. Numerical Analysis and Computation (3-3)  | 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.

### GRADUATE COURSES

200. Seminar (2-3)  
Prerequisite: Consent of instructor.  
An intensive study of a selected topic in advanced mathematics. May be repeated with new subject matter for additional credit.
- 210A-210B. Mathematics of Physics (3-3)  
Prerequisite: Admission into a master's degree program.  
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.

### 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 or consent of instructor.

A development of the theory of groups.

### 232. Theory of Fields (3)

Prerequisite: Mathematics 150B or consent of instructor.

A study of both finite and infinite fields, and field extensions.

### 233. Linear Algebra and Matrix Theory (3)

Prerequisite: Mathematics 150B or consent of instructor.

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.

### 287. Intermediate Analysis (3)

Point-set theory, fundamental theorems of continuous functions, theory of integration, and infinite series. Open to National Science Foundation students only.

### 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.

### 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.

### SPECIFIC REQUIREMENTS FOR THE MASTER OF ARTS DEGREE

In addition to meeting the requirements for classified graduate standing and the general 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 will enroll in Music 299, Thesis, and pass a final oral examination on the thesis or enroll in Music 299, Thesis, recital, and present a brief explanation of the 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 general 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. Education 290A is recommended. The thesis may, with approval of the Music Department faculty, consist in part of a lecture-recital. (The student must also satisfy the requirements for a California school service credential.)

### ADVANCEMENT TO CANDIDACY

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

### 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. Dayton Smith, C. Springston;  
Master of Arts (Teaching), J. Dayton Smith  
Credential Advisers: P. V. Anderson; R. C. Flye; Norman Rost; J. Dayton Smith;  
M. S. Snider  
Professors: J. Dayton Smith, M.M.; Christine Springston, M.A.

Associate Professors: P. V. Anderson, M.M.; J. D. Blyth, M.M.; Cleve K. Genzlinger, M.M.; L. C. Hurd, M.M.; Norman Rost, M.M.; D. F. Smith, M.M.; M. S. Snider, M.A.

Assistant Professors: M. R. Biggs, Ph.D.; R. C. Flye, M.A.; M. E. Hogg, Ph.D.; A. A. Lambert, Ph.D.; D. M. Loomis, M.M.; Edith Savage, Ed.D.; J. M. Sheldon, M.A.; David Ward-Steinman, D.M.A.

### COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN MUSIC

#### UPPER DIVISION COURSES

- |  |  |
|--|--|
| 102A. Chamber Music Literature (2)                           | 123S. Workshop in Instrumental Techniques and Chamber Music for Strings, Woodwind, and Brass Instruments (2) |
| 102B. Keyboard Literature (2)                                |  |
| 103A. Symphonic Literature (2)                               | 141. Methods in Teaching Piano (3)   |
| 103B. Song Literature (2)                                    | 142. Survey of Harmony and Musical Form (2)  |
| 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)   |
|  | 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
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.



**218. Seminar in Choral Art (6) Summer**

Prerequisite: Consent of instructor.

A study of choral and chamber music performed by seminar participants in the College Chorus, the San Diego Symphony Orchestra, and Chamber Music Concerts. Development of analytical technique; study of vocal techniques, of the larger forms, and of styles, including performing practices of the baroque and later periods. Total credit for Music 118-S and Music 218 limited to 18 units, with a limit of six units which may be applied to the master's degree. (Formerly Music 207).

**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

**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 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.

### SPECIFIC REQUIREMENTS FOR THE MASTER OF ARTS DEGREE

In addition to meeting the requirements for classified graduate standing and the general requirements for the masters' 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.

### ADVANCEMENT TO CANDIDACY

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

### FACULTY

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

Chairman, Department of Philosophy: S. M. Nelson, Ph.D.

Graduate Adviser: Harry Ruja

Professors: Mary Mendenhall, Ph.D.; Harry Ruja, Ph.D.; A. E. Shields, Ph.D.

Associate Professor: S. M. Nelson, Ph.D.

Assistant Professors: A. W. Anderson, Ph.D.; Patricia A. Crawford, Ph.D.; Jack McClurg, Ph.D.; W. S. Snyder, Ph.D.; S. N. Weissman, A.B.

### 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)     |
| 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

200. Seminar in Plato (3)  
Prerequisite: 12 units of upper division work in philosophy.  
An intensive study of the major dialogues.
201. Seminar in Aristotle (3)  
Prerequisite: 12 units of upper division work in philosophy.  
An intensive study of the major Aristotelian writings.
207. Seminar in Kant (3)  
Prerequisite: 12 units of upper division work in philosophy.  
Kant's critique of the foundations of human knowledge, moral obligation, and religious faith, with readings from the three *Critiques* but with special emphasis upon the *Critique of Pure Reason*.
210. Seminar in Contemporary Philosophy (3)  
Prerequisite: 12 units of upper division work in philosophy.  
Significant philosophical movements and figures of the 20th century.
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.
235. Seminar in Philosophy of Religion (3)  
Prerequisite: 12 upper division units in philosophy including Philosophy 135 or its equivalent.  
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.
262. Studies in Continental Rationalism (3)  
Prerequisite: 12 upper division units in philosophy.  
An intensive study of selected texts from Descartes, Spinoza, and Leibniz.
263. Studies in British Empiricism (3)  
Prerequisite: 12 upper division units in philosophy.  
An intensive study of selected texts from Locke, Berkeley, and Hume.
298. Special Study (1-6)  
Prerequisite: 12 units of upper division work in philosophy and consent of staff; to be arranged with department chairman and instructor.  
Individual study. 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.

## 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. Close liaison among the departments of this division and with community agencies offers opportunity for realistic field experiences.

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.

### 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 general requirements for the master's degree, described in Part Three of this bulletin. The concentration consists of a minimum of 18 units in health and physical education selected from courses listed in this bulletin as acceptable on master's degree programs, of which at least 12 units must be in 200-numbered courses. Education 290A-290B and Physical Education 299 are required courses.

### ADVANCEMENT TO CANDIDACY

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

### TEACHING ASSISTANTSHIPS

Teaching assistantships in physical education are available to a limited number of qualified students. Application blanks and additional information may be secured from the Dean of the College.

### FACULTY

Chairman, Division of Health Education, Physical Education, and Recreation:  
W. L. Terry, Ed.D.  
Chairman, Men's Physical Education Department: Paul Governali, Ed.D.  
Chairman, Women's Physical Education Department: Margaret L. Murphy, Ed.D.  
Chairman, Department of Recreation: F. L. Scott, Ph.D.  
Graduate Adviser: F. L. Scott  
Credential Advisers: C. W. Benton; George Ziegenfuss, Dorothy J. Tollefsen  
Professors: C. W. Benton, Ed.D.; Paul Governali, Ed.D.; F. W. Kasch, Ed.D.; F. L. Scott, Ph.D.; W. L. Terry, Ed.D.; George Ziegenfuss, Ed.D.  
Associate Professors: H. H. Broadbent, M.S.; D. D. Coryell, M.S.; Evelyn Lockman, M.A.; Margaret Murphy, Ed.D.; Albert Olsen, M.A.; W. H. Schutte, M.S.; Florence S. Shannon, M.S.; C. R. Smith, M.S.; C. C. Sportsman, M.S.; Dorothy J. Tollefsen, M.A.  
Assistant Professors: Ruth Andrus, Ph.D.; Joan F. Barone, M.S.; J. L. Carter, Ph.D.; Mary F. Cave, M.A.; Kathleen Fox, M.A.; Elizabeth Griffin, M.S.; R. F. Hansen, M.A.; Kathryn Lewis, M.A.; Lyle Olsen, Ed.D.; Betty Wilhelm, M.A.; Gloria Williamson, M.A.



## COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN PHYSICAL EDUCATION

### UPPER DIVISION COURSES

- |  |  |
|--|--|
| <p>153A-153B. Problems in Modern Dance (Men and Women) (2-2)</p> <p>157A-157B. Choreography in Contemporary Dance (Men and Women) (3-3)</p> <p>160. Mechanics of Body Movement (Women) (3)</p> <p>167. Applied Anatomy and Kinesiology (3)</p> | <p>168. Physiology of Exercise (3)</p> <p>169. Adapted Activities (3)</p> <p>170A-170B. Recreational Leadership (3-3)</p> <p>190. Administration of Physical Education in the Secondary School (3)</p> |
|--|--|

### GRADUATE COURSES

- 200. Evaluation Procedures in Physical Education, Health Education and Recreation (3)**  
A study of tests and measurements in the profession, with practice in their construction and use, and interpretation of results. Not open to students with credit for Health Education 200.
- 201. Developmental Physical Education (3)**  
Prerequisite: Physical Education 167.  
Intensive study of postural divergencies, lack of physical development, and methods of correcting such conditions through exercise. Practice in making physical examinations, constructing individual exercise programs, and teaching remedial exercises. Consideration of ethical procedures and limitations.
- 202. Problems in Physical Education (3)**  
A survey of current problems facing the physical education profession, through a review of literature, discussion of trends, and observation of school situations. Analysis and evaluation of actual problems. Written reports required.
- 204. Problems in Recreation (3)**  
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. Not open to students with credit for Recreation 204.
- 205. Curriculum in Physical Education and Health Education (3)**  
Analysis of current curricula in physical education and health education, with special emphasis upon curriculum construction and evaluation. Not open to students with credit for Health Education 205.
- 210. Seminar in Facilities for Physical Education (3)**  
Prerequisite: Major or minor in physical education.  
Individual study of problems related to the planning, development and maintenance of physical education and athletics facilities.
- 211. Seminar in Competitive Athletics for Men (3)**  
Prerequisite: Major or minor in physical education.  
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.
- 212. Seminar in 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.
- 213. Seminar 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.

### 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 the physical sciences. 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 Physical Sciences Teacher Education Committee.

### 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 student's undergraduate preparation should include the following courses or their equivalents:

*Lower Division:* Astronomy 1 and 9; Chemistry 1A, 1B, 5, and 12; Geology 1A or 2 and 3; Mathematics 50 and 51; Physics 4A-4B-4C; Biology 3 and 4, or Biology 5. (Total: 53 units.)

*Upper Division:* Physics 101 plus 21 units in the physical and life sciences selected with the approval of the adviser in physical science. Fifteen of the 21 units must be from the following four groups of courses with a minimum of six units from each of two groups and a minimum of three units from each of the other two groups. (In Group II, Physics 101 is required.)

Group I: Chemistry 110A-110B or 109A-109B, 112, 115A, 115B, 150.

Group II: Physics 101, 103, 105, 110, 112, 120A, 120B, 122, Physical Science 130.

Group III: Mathematics 117, 119, Physical Science 150, Industrial Arts 185.

Group IV: Biology 110, 111, 158, 161, Botany 112, 114, 119-S, Zoology 114, 117, 119-S, 121, 165.

### 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 general requirements for the Master of Arts degree, as described in Part Two of this bulletin, including the requirement of a California teaching credential when appropriate, the student must complete the following requirements:

Chemistry 150, and 109B or 110B  
Mathematics 119

(If a student has completed these courses as an undergraduate, he may, with permission of the graduate adviser, be allowed to use 100-numbered courses in other fields where his preparation is incomplete.)

Six units of 100- or 200-numbered courses in physics.

Four units of 200-numbered courses in the physical sciences excluding Physical Science 299.

Not less than 11 units of approved electives chosen from Physical Science 299, Thesis, and courses taken to complete credential requirements where applicable.

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.

### ADVANCEMENT TO CANDIDACY

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

## FACULTY

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

Graduate Adviser: N. F. Dessel

Physical Sciences Teacher Education Committee: N. F. Dessel, Ph.D., Assistant Professor of Physics; R. D. Rowe, Ph.D., Professor of Chemistry; P. E. Stewart, Ph.D., Professor of Physical Science

Professor: P. E. Stewart, Ph.D.

Associate Professors: C. F. Merzbacher, Ed.D.; Burt Nelson, Ph.D.

Assistant Professor: J. J. Ziegelmaier, M.A.

### COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN THE PHYSICAL SCIENCES

#### UPPER DIVISION COURSES

Physical Science 140-S. Contemporary Problems in Physical Science (1)

#### GRADUATE COURSES

Physical Science 200. Seminar (2 or 3)

Prerequisite: Consent of instructor.

An intensive study of a selected topic in advanced physical science. May be repeated with new subject matter for additional credit.

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 Physical Sciences Teacher Education Committee, 100- or 200-numbered courses offered by the departments in the Divisions of Education, Engineering, and the Physical Sciences 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, the Master of Arts degree for teaching service with a concentration in physics, and the Master of Science degree with a major in physics. The Master of Science degree is designed to augment the student's undergraduate training by an additional fifth year of more advanced study in the traditional fields of physics. 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 in the master's degree program."

### SPECIFIC REQUIREMENTS FOR THE MASTER OF ARTS DEGREE

In addition to meeting the requirements for classified graduate standing and the general 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 physics (excluding Physics 290). At least 18 must be in 200-numbered courses in physics (including Physics 210A-210B, 270, 299, and one course selected from Physics 205, 219, 260 and 275). 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 ARTS DEGREE FOR TEACHING SERVICE

In addition to meeting the requirements for classified graduate standing and the general 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 physics, of which at least 12 units must be in 200-numbered courses. A thesis is required. (The student must also satisfy the requirements for a California school service credential.)

### 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 as described in Part Three of this bulletin. Subject to the approval of the department, the student may elect Plan A, with the thesis, or Plan B, with the comprehensive examination in lieu of the thesis. The student must also complete a program of studies prepared in consultation with his departmental advisory committee as indicated below. For Plan A: (1) Physics 210A-210B, 270, and 299; (2) nine units of graduate level courses or approved upper division courses in physics including one course selected from Physics 205, 219, 260, and 275; (3) nine units of electives approved by his departmental committee. For Plan B: (1) Physics 210A-210B, 270, and 205; (2) nine units of graduate level or approved upper division courses in physics including one course selected from Physics 219, 260, and 275; (3) nine units of electives approved by his departmental committee.

### ADVANCEMENT TO CANDIDACY

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

### TEACHING ASSISTANTSHIPS AND SCHOLARSHIPS

Teaching assistantships in physics are available to a limited number of qualified students. Application blanks and additional information may be secured from the Dean of the College.

### FACULTY

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

Chairman, Department of Physics: C. R. Moe, Ph.D.

Graduate Advisers: Master of Arts and Master of Science, J. G. Teasdale; Master of Arts (teaching), N. F. Dessel

Credentialed Advisers: N. F. Dessel, L. E. Smith, Jr.

Professors: J. D. Garrison, Ph.D.; C. R. Moe, Ph.D.; L. L. Skolil, Ph.D.; L. E. Smith, Jr., Ph.D.

Associate Professors: R. H. Morris, Ph.D.; G. H. Wolter, M.S.

Assistant Professors: I. L. Beauchamp, M.Ph.; J. R. Bolte, Ph.D.; O. H. Clark, Ph.D.; R. L. Craig, M.S.; N. F. Dessel, Ph.D.; D. E. Rehfuess, Ph.D.; J. D. Templin, Ph.D.; J. A. Terhune, M.S.

Lecturers: K. A. Ehrlicke, M.S.; D. C. Kalbfell, Ph.D.; M. A. Nichols, Ph.D.; W. V. Norris, Sc.D.

### COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN PHYSICS

#### UPPER DIVISION COURSES

- |   |   |
|---|---|
| 106. Optics (3)                         | 156. Digital Computers (3)              |
| 114. Acoustics (3)                      | 164. Applied Electronics Laboratory (2) |
| 122. Senior Physics Laboratory (2)      | 165. Microwave Measurements (2)         |
| 126. Solid State Devices Laboratory (2) | 167. Semiconductor Devices (3)          |
| 131. Astronautics (2)                   | 173B. Physical Electronics (3)          |
| 148. Nuclear Physics Laboratory (3)     | 175. Analytic Mechanics (2)             |
| 151. Nuclear Physics (3)                | 180. Solid State Physics (3)            |
| 152. Transients in Linear Systems (3)   | 190. Introductory Quantum Mechanics (3) |
| 153. Servo-System Design (3)            | 196. Advanced Physics (2 or 3)          |
| 155. Analog Computers (3)               |   |



## GRADUATE COURSES

- 200. Seminar (2 or 3)**  
Prerequisite: Consent of instructor.  
An intensive study of a selected topic in advanced physics. May be repeated with new subject matter for additional credit.
- 205. Theoretical Mechanics (3)**  
Prerequisite: Physics 175, or consent of the instructor.  
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)**  
(Same course as Mathematics 210A-210B)  
Prerequisite: Admission into a master's degree program.  
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)**  
Prerequisites: Physics 114, or consent of instructor.  
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; or consent of instructor.  
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 165 or equivalent.  
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 or consent of instructor.  
Special emphasis on perturbations due to inhomogeneity of the central force field.
- 240A-240B. Reactor Materials Technology (3-3)**  
Prerequisites: Physics 180 and 190; and Chemistry 161.  
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)**  
Prerequisites: Physics 151 and 190.  
Theory of chain reactions and their application to the operation of various types of reactors. Kinetics, theoretical design, and control of reactors in relation to the fundamental nuclear process.
- 246. Problems in Reactor Design Parameters (3)**  
Prerequisites: Concurrent registration in Physics 240B, 245B, and 248B.  
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 161, Physics 148; concurrent registration in Physics 245A-245B.  
Measurement of the static and dynamic characteristics of a reactor. Reactor operation, reactor radiations, neutron flux properties and temperature effects. Use of the reactor as an experimental tool.
- 251. Nuclear Physics (3)**  
Prerequisites: Physics 151, 175, and 190; or consent of the instructor.  
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 or consent of the instructor.  
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, or consent of the instructor.  
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; or consent of instructor.  
The physical basis of quantum mechanics. Schroedinger'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; or consent of instructor.  
The energy band theory of solids, with applications to the electrical and optical properties of dielectrics, semiconductors and metals.
- 297. Research in Physics (Credit to be arranged)**  
Prerequisite: Consent of instructor.  
Research in one of the fields of physics. 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 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 Center for Education and Research in Politics. 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.

#### SPECIFIC REQUIREMENTS

In addition to meeting the requirements for classified graduate standing and the general 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 12 units must be in 200-numbered courses including Political Science 200, The Scope and Method of Political Science, and Political Science 299, thesis. A reading knowledge of a foreign language and a final oral examination on the general field of the thesis are also required.

#### ADVANCEMENT TO CANDIDACY

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

### 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 and not less than 2.5 overall during the last two years of college.

### SPECIFIC REQUIREMENTS

In addition to meeting the requirements for classified graduate standing, the student must satisfy the general requirements for the master's degree as described in Part Three of this bulletin. The student must also complete: (1) at least twelve units of 200-numbered courses, excluding Political Science 296, Internship in Public Administration, and including 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) a minimum of six units in one of the fields of concentration: general administration, local government administration, social work administration, correctional administration, and public planning administration; (4) 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; and (5) Political Science 296, Internship in Public Administration, unless waived by the graduate adviser.

The internship requirement can be met either by (a) successful completion of Political Science 296, Internship in Public Administration, or by (b) a demonstration on the part of the student that he has had satisfactory qualifying experiences in the field, on the basis of which the department may recommend that the three units of internship be waived. If the student is required to enroll in Political Science 296, he will work 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.

### ADVANCEMENT TO CANDIDACY

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

### 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 Dean of the College.

### FACULTY

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

Chairman, Department of Political Science: W. R. Bigger, Ph.D.

Graduate Advisers:

Master of Arts in Political Science: W. R. Bigger, I. K. Feierabend, M. D. Generales, Richard Gripp, H. L. Janssen, N. V. Joy, J. D. Kitchen, D. B. Leiffer, F. A. Nigro, L. V. Padgett, R. F. Wilcox

Master of Science in Public Administration: W. R. Bigger, J. D. Kitchen, D. B. Leiffer, F. A. Nigro, 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.; F. A. Nigro, Ph.D.; R. F. Wilcox, Ph.D.

Associate Professors: I. K. Feierabend, Ph.D.; Richard Gripp, Ph.D.; J. D. Kitchen, Ph.D.; L. V. Padgett, Ph.D.

Assistant Professors: Melvin Crain, Ph.D.; H. H. Haak, M.A.; T. J. Kahng, Ph.D.; I. J. Kubanis, B.A.



# COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN POLITICAL SCIENCE

## UPPER DIVISION COURSES

- |  |   |
|--|---|
| 105. American Political Thought (3)                      | 153. Case Studies in Public Administration (3)                |
| 111A-111B. Theory of the State (3-3)                     | 157. Public Relations of Public Agencies (3)                  |
| 112. Modern Political Thought (3)                        | 160. Principles of Planning (2 or 3)                          |
| 116. American National Government (3)                    | 161. Field Studies in Government (3)                          |
| 120. Political Parties (3)                               | 162. Finance Administration (2 or 3)                          |
| 122. Propaganda and Public Opinion (3)                   | 165. Dynamics of Modern International Crises (3)              |
| 123S. Contemporary American Politics (3)                 | 170A-170B. International Relations (3-3)                      |
| 124. Political Behavior (3)                              | 171. The Conduct of American Foreign Relations (3)            |
| 125. The Legislative Process (3)                         | 172. International Organization (3)                           |
| 127A-127B. Constitutional Government (3-3)               | 173. Principles of International Law (3)                      |
| 136. Administrative Law (3)                              | 175. International Relations of the Latin-American States (3) |
| 138. Introduction to Jurisprudence (3)                   | 180. Government of England (3)                                |
| 139A-139B. American Constitutional Law (3-3)             | 181. Government of the Soviet Union (3)                       |
| 140. Introduction to Public Administration (3)           | 182. Political Systems of South America (3)                   |
| 142. State Government (3)                                | 183. Governments and Politics of South and Southeast Asia (3) |
| 143. Municipal and County Government (3)                 | 184. The Mexican Political System (3)                         |
| 144. Introduction to Public Personnel Administration (3) | 185. Governments of Continental Europe (3)                    |
| 147. Government and Public Policy (3)                    | 186. Comparative Communist Governments (3)                    |
| 148. Government of Metropolitan Areas (3)                | 187. Governments and Politics of the Far East (3)             |
| 149. Comparative Public Administration (3)               | 188. Governments and Politics of the African States (3)       |
| 151. California Law of Municipal Corporations (2)        |   |
| 152. Administrative Management (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)

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 or consent of instructor.

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 with a major in psychology for students specializing in theoretical-experimental psychology and the Master of Science degree in psychology for students specializing in the fields of clinical, industrial and personnel psychology.

Laboratory facilities for training in both human and animal psychology are available, and students are required to take courses in experimental psychology and statistical methods. Practicum courses involving supervised training in such places as local military establishments, industrial plants, and hospitals are available.

### ADMISSION TO THE GRADUATE DIVISION

All students must satisfy the general requirements for admission to the Graduate Division with classified graduate standing, as described in Part Three of this bulletin. The student must also (1) have completed 24 semester units of upper division work in psychology, including Psychology 104A, Statistical Methods in Psychology; 105, Psychological Testing; 110, Experimental Psychology; an additional course in experimental psychology selected from 111, 112, 113, 114; and 178, Theories of Personality, or their equivalents, and (2) have an overall grade point average of 3.0 (B) in the major, and an overall grade point average of 3.0 (B) in his last 60 units of work.

### SPECIFIC REQUIREMENTS FOR THE MASTER OF ARTS DEGREE

In addition to meeting the requirements for admission to the Graduate Division with classified graduate standing and the general requirements for the master's degree as described in Part Three of this bulletin, the student must complete the following requirements:

1. Complete a graduate program with a major in psychology defined as follows:
  - (a) A minimum of 12 units in 200-numbered courses in psychology, including Psychology 202A, 202B, 222 and 223. (Psychology 290 and 296 cannot be included in this program.) All students must enroll in Psychology 202A or 202B in their first graduate semester, and in the alternate half of the course in their second semester.
  - (b) A minimum of six additional approved graduate or upper division courses in psychology. The following are required courses: Psychology 104B, 175, and 177, if not completed in the undergraduate program.
  - (c) Nine additional units of approved graduate or upper division courses in a field or fields related to psychology.
  - (d) Three units of Psychology 299, Thesis.
2. Demonstrate a reading knowledge of French, German, or Russian, or complete at least six units of approved mathematics with an average grade of B or better.

### SPECIFIC REQUIREMENTS FOR THE MASTER OF SCIENCE DEGREE

In addition to meeting the requirements for admission to the Graduate Division with classified graduate standing and the general 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 adviser and including:

- (a) A minimum of 12 units of 200-numbered courses in psychology, including 202A and 202B, but exclusive of Psychology 290 and 296. All students must enroll in Psychology 202A or 202B in their first graduate semester, and in the alternate half of the course in their second semester.
- (b) For students specializing in pre-clinical psychology: Psychology 204, 211, and 234.  
For students specializing in industrial and personnel psychology; Psychology 220, 223, and 225.

- (c) A minimum of 9 additional approved graduate or upper division courses in psychology. Psychology 104B, 175, and 177 are required unless they were completed in the undergraduate program.

### ADVANCEMENT TO CANDIDACY

In addition to satisfying the general requirements for advancement to candidacy which are described in Part Three of this bulletin, the student must make a satisfactory score on the Graduate Record Area Examination and on the Graduate Record Examination Advanced Test in Psychology.

### TEACHING ASSISTANTSHIPS

Teaching assistantships in psychology are available to a limited number of qualified students. Application blanks and further information may be obtained from the Dean of the College.

### FACULTY

Chairman, Division of the Life Sciences: J. E. Crouch, Ph.D.

Chairman, Department of Psychology: O. J. Kaplan, Ph.D.

Graduate Adviser: W. R. Stevens

Credential Advisers: W. A. Hunrichs; W. D. Kinnon

Professors: H. B. Carlson, Ph.D.; O. J. Kaplan, Ph.D.; W. M. Kidwell, Ed.D.; I. N. McCollom, Ed.D.; H. C. Peiffer, Jr., Ph.D.; J. B. Sidowski, Ph.D.; W. C. Treat, Ph.D.; M. B. Turner, Ph.D.; Virginia Voeks, Ph.D.

Associate Professors: W. J. Crow, Ph.D.; L. O. Daniel, Ph.D.; R. C. Harrison, Ph.D.; W. A. Hunrichs, Ph.D.; William Kinnon, Ph.D.; F. P. Leukel, Ph.D.; E. F. O'Day, Ph.D.; D. M. Rumbaugh, Ph.D.; J. R. Smith, Ph.D.; W. R. Stevens, Ph.D.

Assistant 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.; Norman Kass, Ph.D.; Robert Penn, Ph.D.; T. T. Psomas, Ph.D.; Evalyn F. Segal, Ph.D.; Margaret Sand, Ph.D.

Lecturers: L. C. Johnson, Ph.D.; W. E. Montague, Ph.D.

### COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN PSYCHOLOGY

#### UPPER DIVISION COURSES IN PSYCHOLOGY

- |   |  |
|---|--|
| 104B. Advanced Statistics (3)   | 122. Public Opinion Measurement (3)            |
| 109. Mental Deficiency (3)  | 124. Engineering Psychology (3)                |
| 110. Introduction to Experimental Psychology: Learning and Motivation (3) | 141. Neural Bases of Behavior (3)              |
| 111. Experimental Psychology: Sensation and Perception (3)                | 142. Physiological Psychology (3)              |
| 112. Experimental Psychology: Social (3)                                  | 150. Abnormal Psychology (3)                   |
| 113. Experimental Psychology: Physiological (3)                           | 151. Introduction to Clinical Appraisal (3)    |
| 114. Experimental Psychology: Comparative (3)                             | 152. Introduction to Methods of Counseling (3) |
| 121. Personnel and Industrial Psychology (3)                              | 153. Advanced Abnormal Psychology (3)          |
|   | 175. Theories of Learning (3)                  |
|   | 177. History of Psychology (3)                 |
|   | 178. Theories of Personality (3)               |

#### GRADUATE COURSES

##### 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 (3)**

Prerequisites: Psychology 104A and 105.

Principles of individual testing. Instruction and practice in the administration and scoring of the Stanford-Binet, Wechsler scales, and some similar tests. One lecture and six hours of laboratory per week.

**205. Advanced Mental Testing (3)**

Prerequisites: Psychology 104A, 105, 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. Two hours of lecture and three hours of laboratory.

**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 104A, 145, 110 or 111, 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. Limited to students who have a qualifying score on the Psychology Department Comprehensive Examination.

**223. Experimental Design (3)**

Prerequisites: Psychology 104B 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. Limited to students who have a qualifying score on the Psychology Department Comprehensive Examination.

**224. Advanced Experimental (3)**

Prerequisite: Psychology 223.

Methods, techniques, and apparatus applicable to questions of various types. Special attention is given to sources of error, limitations on interpretation, and psychophysical methods. Students will design and carry out experiments in preparation for original independent investigations. One lecture and six hours of laboratory.

**225. Principles of Test Construction (3)**

Prerequisites: Psychology 104B 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 114 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. Guidance Counseling Techniques (3)**

(Same course as Education 233)

Prerequisite: Education 115, or Education 230, or Psychology 151.

Designed for school counselors. To stress the understandings and procedures necessary for effective interviewing.

**234. Projective Psychology (3)**

Prerequisites: Psychology 104A, 105, 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)**

Prerequisites: Psychology 104A, 105, 151, 178, 204, and 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 (1-6)**

Prerequisite: Limited to 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.

**298. Special Study (1-6)**

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

Individual study projects involving library or laboratory research in physiological, industrial, learning, clinical, and other areas of experimental psychology. May be repeated to a maximum of 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 with a concentration in social science with emphases in the fields of economics, geography, political science, and sociology. (The Master of Arts degree with majors in economics, 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 at least 15 units of upper division courses in geography. In addition, unless he had an undergraduate major in geography, he must 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.)

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

In addition to meeting the requirements for classified graduate standing and the general requirements for the Master of Arts degree as described in Part Three of this bulletin, including the requirement of a California teaching credential, 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 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. Education 290A, Procedures of Investigation and Report, course 290, Bibliography, and course 299, Thesis, are required courses. Political Science 200, The Scope and Method of Political Science, is required in the political science emphasis, where it may substitute for Education 290A and course 290, Bibliography. Geography 295, Geographic Research and Techniques of Presentation, is required in the geography emphasis, where it may be substituted for the course 290, Bibliography and Education 290A.

### ADVANCEMENT TO CANDIDACY

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

### 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 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 Economics, Geography, History, Political Science, and Sociology. In addition, the following courses may be accepted on master's degree programs in social science if approved by the graduate adviser:

Anthropology 102, 103, 151A, 151B, 152, 153, 156, 161, 162, 163, 167, and 172.  
Geography 112A, 112B.



## SOCIOLOGY

### GENERAL INFORMATION

The Department of Sociology-Anthropology, 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.

### SPECIFIC REQUIREMENTS FOR MASTER OF ARTS PROGRAMS

In addition to meeting the requirements for classified graduate standing and the general 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 260, Seminar in Research Methods, and Sociology 299, Thesis. A reading knowledge of French or German, a final comprehensive examination, and an oral examination on the thesis are further requirements for the degree.

### ADVANCEMENT TO CANDIDACY

All students must satisfy the general requirements for advancement to candidacy as described in Part Three of this bulletin. Students majoring in sociology must also have completed Sociology 164, Methods of Social Research, either at the undergraduate or graduate level.

### TEACHING ASSISTANTSHIPS

Teaching assistantships in Sociology are available to a limited number of qualified students. Application blanks and further information may be obtained from the Dean of the College.

### FACULTY

Chairman, Division of the Social Sciences: D. S. Milne, Ph.D.  
 Chairman, Department of Sociology-Anthropology: Aubrey Wendling, Ph.D.  
 Graduate Adviser: N. N. Mouratides  
 Professors: K. E. Barnhart, Ph.D.; O. E. Klapp, Ph.D.; D. S. Milne, Ph.D.; S. L. Rogers, Ph.D.; Aubrey Wendling, Ph.D.  
 Associate Professors: M. J. Daniels, Ph.D.; P. H. Ezell, Ph.D.; B. C. Kirby, Ph.D.; Irving Tebor, Ph.D.  
 Assistant Professors: A. J. Anderson, Ph.D.; W. M. Bates, Ph.D.; Jack Delora, Ph.D.; David Feldman, Ph.D.; Thomas Gillette, Ph.D.; Victor Goldkind, M.A.; C. E. Mann, M.A.; T. O. McJunkins, M.A.; N. N. Mouratides, M.A.; H. L. Voss, Ph.D.

## COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN SOCIOLOGY

### UPPER DIVISION COURSES

- |   |  |
|---|--|
| 100. History of Social Thought (3)                | 138. Sociology of Religion (3)                   |
| 110. Social Disorganization (3)                   | 146. Collective Behavior (3)                     |
| 113. Criminology and Penology (3)                 | 148. Small Groups (3)                            |
| 114. Juvenile Delinquency (3)                     | 150. Population Problems (3)                     |
| 116. Contemporary Correctional Administration (3) | 151. Research Methods in Demography (3)          |
| 120. Industrial Sociology (3)                     | 157. Urban Sociology (3)                         |
| 121. Medical Sociology (3)                        | 160. Quantitative Methods in Social Research (3) |
| 123. Sociology of Mental Illness (3)              | 164. Methods of Social Research (3)              |
| 124. Social Stratification (3)                    | 197. Investigation and Report (3)                |
| 125. Minority Group Relations (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, or consent of instructor.  
 Advanced study of social theory, its modern formulations and historical development, with emphasis on individual research and report of findings.
210. Seminar in Social Disorganization (3)  
 Prerequisites: Sociology 110 and 164, or consent of instructor.  
 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.
220. Seminar in Social Organization (3)  
 Prerequisite: Sociology 164 or consent of instructor.  
 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.
230. Seminar in Social Institutions (3)  
 Prerequisite: Sociology 164 or consent of instructor.  
 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.
240. Seminar in Social Interaction (3)  
 Prerequisites: Sociology 140 and 164, or consent of instructor.  
 Advanced study of social-psychological interaction, including sociological factors in personality development and analysis of morale, motivation, leadership and other elements of group behavior.
250. Seminar in Human Ecology and Demography (3)  
 Prerequisites: Sociology 150 and 164, or consent of instructor.  
 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, or consent of instructor.  
 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.



**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 of thesis for the master's degree.

## SPANISH

### GENERAL INFORMATION

The Department of Foreign Languages, in the Division of the Humanities, offers graduate study leading to the Master of Arts degree with a major in Spanish, and to the Master of Arts degree for teaching service with a concentration in Spanish. Teaching credentials with majors and minors in Spanish are also available.

The staff in charge of the graduate program in Spanish is composed of professors whose native tongue is Spanish, or who have traveled extensively in Spain and in other European countries, 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 serves 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.

### SPECIFIC REQUIREMENTS FOR THE MASTER OF ARTS DEGREE

In addition to meeting the requirements for classified graduate standing and the general 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, 204 or 205, 290, and 294 or 299.

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

In addition to meeting the requirements for classified graduate standing and the general requirements for the master's degree as described in Part Three of this bulletin, the student must complete a graduate program with a concentration consisting of at least 18 units in Spanish, including Spanish 202, 290, and 294, and six units of at least 18 units in Spanish, including Spanish 201, 204, or 205. The comprehensive examination, which is selected from Spanish 201, 204, or 205. The comprehensive examination, which is required in lieu of a thesis (Plan B) for the master's degree for teaching service with a concentration in Spanish, consists of a three-hour written examination on language and literature, a two-hour oral examination in Spanish civilization and oral explanation of linguistic constructions and literary passages.

The student must also satisfy the requirements for a California school service credential.

### SPECIFIC REQUIREMENTS FOR CREDENTIALS

Before taking a directed teaching assignment in Spanish, the candidate for a teaching credential must pass proficiency examinations, oral and written, administered by the Department of Foreign Languages, in the language and its area civilization. Spanish 40 or 140 prepare for this latter examination in the area civilization. The candidate must consult with the chairman of the Department of Foreign Languages for permission to take these examinations.

In the graduate program for a secondary teaching credential, the candidate must include Spanish 201 or 202, and 204 or 205.

Students who wish to obtain the Master of Arts degree in Spanish in connection with the junior college credential will be required to take Spanish 294 and to pass the comprehensive examination required in Plan B in lieu of a thesis.



## ADVANCEMENT TO CANDIDACY

In addition to meeting the requirements for advancement to candidacy as described in Part Three of this bulletin, students will be required to pass a qualifying examination in Spanish given by the Department of Foreign Languages.

## FACULTY

Chairman, Division of the Humanities: J. R. Adams, Ph.D.  
Chairman, Department of Foreign Languages: C. H. Baker, Ph.D.  
Graduate Adviser: C. H. Baker  
Credential Adviser: L. N. Messier, Ph.D.  
Associate Professor: C. H. Baker, Ph.D.  
Assistant Professors: T. E. Case, Ph.D.; W. J. Freitas, Ph.D.; G. Lemus, M.A.; J. L. Walsh, M.A.; Florence 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)  
110A-110B. Novel and Short Story in Spain (3-3)

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. Old Spanish (3)  
Prerequisite: 18 units of upper division Spanish.  
A study of the language and literature of Spain from the 12th to the 15th centuries.
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*.
204. The Spanish-American Novel (3)  
Prerequisite: 18 units of upper division Spanish.  
A study of some aspect of the Spanish-American novel.
205. Spanish-American Poetry (3)  
Prerequisite: 18 units of upper division Spanish.  
An intensive study of Modernism or of the Gaucho Epic.
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. Required of all candidates for the Master of Arts degree with the general secondary or junior college credential.  
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.

Master's degree candidates in general secondary or junior college credential programs are expected to substitute Spanish 294 and a comprehensive examination in lieu of the thesis.



## 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 new 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. The Department of Speech Arts maintains a program of field training with commercial stations and production centers for students in broadcasting.

### 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.

### SPECIFIC REQUIREMENTS FOR THE MASTER OF ARTS DEGREE

In addition to meeting the requirements for classified graduate standing and the general 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 292, Methods in 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 general 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 292, Methods in Research and Bibliography, or Education 290A, Procedures of Investigation and Report, and Speech Arts 299, Thesis, are required courses. (The student must also satisfy the requirements for a California school service credential.)

### 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.

### TEACHING ASSISTANTSHIPS

Teaching assistantships in Speech Arts are available to a limited number of qualified students. Application blanks and further information may be obtained from the Dean of the College.

## FACULTY

Chairman, Division of the Fine Arts: G. N. Sorenson, M.A.  
Chairman, Department of Speech Arts: D. W. Powell, M.F.A.  
Graduate Adviser: Jack Mills  
Credential Adviser: William J. Adams  
Professors: J. W. Ackley, Ph.D.; R. L. Benjamin, Ph.D.; Sue W. Earnest, Ph.D.; K. K. Jones, Jr., M.A.; Paul Pfaff, Ph.D.; E. K. Povenmire, M.F.A.; H. D. Sellman, M.S.  
Associate Professors: W. J. Adams, Ph.D.; R. E. Lee, M.A.; Jack Mills, Ph.D.; Frank Norwood, M.A.; D. W. Powell, M.F.A.; J. P. Witherspoon, M.A.  
Assistant Professors: Kjell Amble, M.A.; D. G. Day, Ph.D.; R. A. Harris, M.A.; Eugene Ouellette, Ph.D.; R. M. Riedman, Ph.D.; Phyllis N. Rogers, M.A.; T. D. Skinner, M.A.

## COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN SPEECH ARTS

### UPPER DIVISION COURSES

- |  |   |
|--|---|
| 108. Advanced Interpretation (3)                       | 177. Audiology (3)  |
| 118A. Play Analysis (3)                                | 178. The Teaching of Lip Reading (3)  |
| 118B. Playwriting (3)                                  | 179. Clinical Methods in Speech Correction (2)                                |
| 130. Semantics (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. Radio and Television Station Operation and Management (4)                |
| 152. History and Design of Costume (Stage) (3)         | 182. Technical Operations and Staging for Radio and Television (4)            |
| 154A-154B. History of the Theater (3-3)                | 183. Program Planning and Development for Radio, Television and Film (4)      |
| 155. Advanced Acting (3)                               | 184. Production Directing and Presentation for Radio, Television and Film (4) |
| 156. Advanced Dramatic Production (3)                  | 190. Rhetorical Theory (3)  |
| 159. Stage Direction (3)                               | 191. Organized Discussion (3)   |
| 162. Advanced Argumentation (3)                        | 192A-192B. Advanced Public Speaking (3-3)                                     |
| 164. Verse Choir Directing (2 or 3)                    | 199. Special Study (1-6)  |
| 171. Audiometry (3)                                    |   |
| 172. Mechanics of Speech Production (3)                |   |
| 173. Functional Problems of Speech and Hearing (3)     |   |
| 174. Principles and Methods of Speech Correction (3)   |   |
| 176. Stuttering and Neurological Disorders (3)         |   |

### GRADUATE COURSES

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 electromechanical devices to the scenic arts for theater and television.

\* Not more than three units from Speech Arts 180A-180B are acceptable on master's degree programs in Speech Arts.



**244. Seminar in Stage Direction (3)**

Prerequisite: Speech Arts 159.

A discussion of the aesthetic principles and the practices of stage direction with emphasis on styles and historical periods.

**245. Seminar in Lighting for Stage and Television (3)**

Prerequisite: Speech Arts 145.

Discussion of principles concerned with the aesthetic and 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. The A and B section may each 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 the Theater and Drama (3)**

Prerequisites: Speech Arts 154A and 154B.

Detailed examination of the important periods, personalities, and theater structures in connection with this general field.

**271. Seminar: Functional Problems of Speech (3)**

Prerequisites: Speech Arts 173, 174 and 176, or consent of instructor.

Theoretical consideration of etiologies and symptomatologies of speech disorders; principles of nonmedical therapy; survey of theory and experiments relating to functional speech disorders.

**272. Seminar: Organic Speech Disorders (3)**

Prerequisites: Speech Arts 172, 174 and 176, or consent of instructor.

Survey of theories and experiments relating to organic speech disorders and their management.

**280A. Advanced Field Work in Clinical Practice in Speech Correction (2)**

Prerequisites: Speech Arts 174 and 176, or consent of instructor.

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; or consent of instructor.

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.

**281. Seminar in Broadcasting (3)**

Reports and discussion involving research in some aspect or problem in radio and television broadcasting. This seminar analyzes procedure and trends in educational and commercial broadcasting. Two of the following seminar topics may be taken for a total of six units:

**A. Management**

Prerequisites: The equivalent of an undergraduate major in broadcasting, Speech Arts 181, and consent of instructor.

**B. Programming**

Prerequisites: The equivalent of an undergraduate major in broadcasting and Speech Arts 183, 184, and consent of instructor.

**C. Audience Measurement and Research**

Prerequisites: The equivalent of an undergraduate major in broadcasting, Political Science 122, Psychology 122, and consent of instructor.

**D. Writing**

Prerequisites: The equivalent of an undergraduate major in broadcasting, Speech Arts 118A, 118B, 183, 184, English 195A, and consent of instructor.

**292. Methods in Research and Bibliography (3)**

The use of basic reference books, journals, pertinent bibliographies, and other methods of research in the various areas of speech and theater.

**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)**

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.



## DEPARTMENTS OFFERING SPECIAL GRADUATE COURSES

### ANTHROPOLOGY

#### 200. Seminar (3)

An intensive study of one phase of anthropology, such as: archeology, ethnography, ethnohistory, primate behavior, social anthropology, or research methods in these areas. May be repeated with new subject matter for additional credit.

#### 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.

### ASTRONOMY

#### 200. Seminar (2 or 3)

Prerequisite: Consent of instructor.

An intensive study of a selected topic in advanced astronomy. May be repeated with new subject matter for additional credit.

#### 210. Binary Stars (3)

Prerequisite: Astronomy 112-B.

An intensive study of visual, spectrographic, and eclipsing binaries, including the determination of orbits.

#### 220. Galactic and Extragalactic Structure (3)

Prerequisite: Astronomy 112-B.

A study of types, movements, and characteristics of stars in the galaxy, and similar study of extragalactic structure.

#### 230. Stellar Interiors (3)

Prerequisite: Astronomy 112-B.

A study of the structure of the interior of a star, including the details of the reactions from which energy is obtained, and the evolution of stars.

#### 280. Orbit Theory and Computation (3)

Prerequisite: Astronomy 104-B.

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

#### 298. Special Study (1-6)

Prerequisite: Consent of staff; to be arranged with Department Chairman and instructor.

Individual study. Six units maximum credit.



**SAN DIEGO STATE COLLEGE**

5402 College Avenue

San Diego 15, California

**CATALOG**

**Educational Material**