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## GRADUATE DIVISION

# San Diego State College

BULLETIN

1961

1962



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## Graduate Division Bulletin

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### PART ONE

## THE COLLEGE AND THE GRADUATE DIVISION

#### STATE DEPARTMENT OF EDUCATION

Roy E. Simpson	Superintendent of Public Instruction
	State Director of Education
Don R. Younggreen	Acting Chief, Division of State Colleges and Teacher Education

#### STATE BOARD OF EDUCATION

Louis H. Heilbron, President	San Francisco
Thomas W. Braden, Vice President	Oceanside
Byron H. Atkinson	Los Angeles
Mrs. Talcott Bates	Carmel
Nathaniel S. Colley	Sacramento
Raymond J. Daba	Atherton
Donald M. Hart	Bakersfield
Bishop Gerald Kennedy	Los Angeles
Dr. Mabel E. Kinney	Los Angeles
Mrs. Seymour Mathiesen	Fresno

Roy E. Simpson, Secretary and Executive Officer

On July 1, 1961, the administration and control of the California State Colleges will be transferred from the State Board of Education to the Trustees of the State College System as provided by Chapter 49, Statutes of 1960, First Extraordinary Session.

#### TRUSTEES OF THE CALIFORNIA STATE COLLEGES

##### ADMINISTRATIVE OFFICE

Buell G. Gallagher	Chancellor
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##### TRUSTEES

Governor Edmund G. Brown	Sacramento
Lieutenant Governor Glenn M. Anderson	Sacramento
Roy E. Simpson, Superintendent of Public Instruction	Sacramento
Byron J. Atkinson	Los Angeles
Mrs. Talcott Bates	Carmel
Thomas W. Braden	Oceanside
William K. Coblentz	San Francisco
Raymond J. Daba	Atherton
Donald M. Hart	Bakersfield
Louis H. Heilbron	San Francisco
Dr. Mabel E. Kinney	Los Angeles
Charles Luckman	Los Angeles
Mrs. Seymour Mathiesen	Fresno
Theodore Meriam	Chico
J. Philip Murphy	Piedmont
Thomas L. Pitts	San Francisco
Herman H. Ridder	Long Beach
Paul Spencer	San Dimas
Allen J. Sutherland	San Diego

##### LEGISLATIVE INTERIM COMMITTEE

Ralph M. Brown	Sacramento
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## SAN DIEGO STATE COLLEGE ADVISORY BOARD

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Chairman  
Burnet C. Wohlford,  
Vice Chairman

E. Robert Anderson  
Harry E. Callaway  
Armistead B. Carter  
William D. Duflock  
Mrs. E. T. Hale

Mrs. Harley E. Knox  
John W. Quimby  
Robert J. Sullivan  
Orien W. Todd, Jr.

### Associate Members

Mrs. Waldo K. Lyon, President San Diego Branch, American Association of University Women  
Mrs. Ernest J. Savoy, President Ninth District, California Congress of Parents and Teachers  
Lynn C. McLean, President San Diego State Alumni Association

## OFFICERS OF THE COLLEGE

President Emeritus Walter R. Hepner, Ed.D.  
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 the Evening Program Glenn L. Hodge, Ph.D.  
Coordinator of Audiovisual Services James S. Kinder, Ph.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 Robert T. Gray, Ed.D.  
Test Officer Herman Roemmich, Ph.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  
Equipment and Materials Coordinator Lois A. Boyd



## SAN DIEGO STATE COLLEGE ADVISORY BOARD

### COUNCIL OF THE GRADUATE DIVISION

Upon recommendation of division chairmen of representatives from departments offering the master of science degree or advanced credentials, and from the established divisions of the college offering the master of arts degree, the President of the College appoints the membership of the Council of the Graduate Division. Appointments for the current year are as follows:

Dean of the College (ex officio)	Donald R. Watson, Ed.D.
Dean of Graduate Studies (chairman)	Maurice M. Lemme, Ph.D.
Coordinator of Graduate Studies	Clayton M. Gjerde, Ph.D.
Division of Arts and Sciences	James N. Tidwell, Ph.D.
Division of Business Administration	D. W. Belcher, Ph.D.
Division of Education	Peter C. Gega, Ed.D.
Division of Engineering	William H. Shutts, Ph.D.
Division of the Fine Arts	Paul L. Pfaff, Ph.D.
Division of the Humanities	Abraham P. Nasatir, Ph.D.
Division of the Life Sciences	Frank L. Ratty, Ph.D.
Division of Physical Education, Health Education, and Recreation	Frank L. Scott, Ph.D.
Division of the Physical Sciences	Chesney R. Moe, Ph.D.
Division of the Social Sciences	Robert W. Richardson, Ph.D.
Business Administration (M.S.)	Simon Reznikoff, LL.B.
Physical Sciences (M.S.)	John A. Spangler, Ph.D.
Psychology (M.S.)	Robert C. Harrison, Ph.D.
Public Administration (M.S.)	William R. Bigger, Ph.D.

### DUTIES AND RESPONSIBILITIES

The duties and responsibilities of the Council of the Graduate Division 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 regular graduate standing in the Graduate Division and approval of regular graduate standing for qualified applicants.
2. Determining the number and nature of examinations required in the Graduate Division, exclusive of departmental examinations.
3. Establishing requirements for advancement to candidacy and acting on requests for such advancement.
4. Considering and acting on all graduate degree programs and petitions of students in the Graduate Division.
5. Adopting rules concerning the form of presentation, acceptability, and disposition of master's degree theses.
6. Making final recommendation to the faculty for the awarding of the master's degree.
7. Making recommendations concerning departmental requests for new graduate level (200-numbered) courses and new master's degree curriculums.
8. Coordinating and systematizing procedures followed by divisions or departments offering advanced degrees or credentials.
9. Making recommendations to the President, the Dean of the College, committees of the college, and the faculty on matters pertaining to the Graduate Division.

### ORGANIZATION OF THE COLLEGE FOR GRADUATE STUDY

#### DIVISION OF BUSINESS ADMINISTRATION

Department of Accounting	Charles W. Lamden, Ph.D., Chairman
Department of Business Education	William H. Wright, Ph.D., Chairman
Department of Business Law and Finance	Maurice L. Crawford, M.S., Chairman
Department of Management	D. C. Bridenstine, Ph.D., Chairman
Department of Marketing	David W. Belcher, Ph.D., Chairman
	E. Alan Hale, Ph.D., Chairman

#### DIVISION OF EDUCATION

Department of Education	Manfred H. Schrupp, Ph.D., Dean
Elementary Education	George A. Koester, Ph.D., Chairman
Secondary Education	Francis A. Ballantine, Ph.D., Coordinator
M.A. Degree in Education	E. Glen Fulkerson, Ed.D., Coordinator
Administrative Studies	Edna B. Koehn, Ph.D., Coordinator
Guidance Studies	Richard A. Houseman, Ed.D., Coordinator
Special Education Studies	David D. Malcolm, Ph.D., Coordinator
	Edna B. Koehn, Ph.D., Coordinator

#### DIVISION OF ENGINEERING

Martin P. Capp, M.S., Chairman

#### DIVISION OF FINE ARTS

George N. Sorenson, M.A., Chairman

Department of Art	Everett Gee Jackson, M.A., Chairman
Department of Home Economics	Helen L. Dorris, M.S., Chairman
Department of Music	J. Dayton Smith, M.M., Chairman
Department of Speech Arts	Sue W. Earnest, Ph.D., Chairman

#### DIVISION OF HEALTH EDUCATION, PHYSICAL EDUCATION, AND RECREATION

William L. Terry, Ed.D., Chairman

Department of Health Education	William H. Lauritsen, Ph.D., Chairman
Department of Men's Physical Education	Paul Governali, Ed.D., Chairman
Department of Women's Physical Education	

Department of Recreation	Margaret L. Murphy, Ed.D., Chairman
	Frank L. Scott, Ph.D., Chairman

#### DIVISION OF THE HUMANITIES

John R. Adams, Ph.D., Chairman

Department of English	Ernest L. Marchand, Ph.D., Chairman
Department of Foreign Languages	Elizabeth M. Brown, Ph.D., Chairman
Department of History	Lionel U. Ridout, Ph.D., Chairman
Department of Philosophy	Harry Ruja, Ph.D., Chairman

#### DIVISION OF THE LIFE SCIENCES

Robert D. Harwood, Ph.D., Chairman

Department of Botany	Avery N. Gallup, Ph.D., Chairman
Department of Microbiology	Henry A. Walch, Ph.D., Chairman
Department of Psychology	Merle B. Turner, Ph.D., Chairman
Department of Zoology	Ronald W. Crawford, Ph.D., Chairman

#### DIVISION OF THE PHYSICAL SCIENCES

Dudley H. Robinson, Ph.D., Chairman

Department of Astronomy-Physical Science	Clifford E. Smith, Ph.D., Chairman
Department of Chemistry	Harold Walba, Ph.D., Chairman
Department of Geology	Baylor Brooks, B.A., Chairman
Department of Industrial Arts	Kenneth Phillips, Ph.D., Chairman
Department of Mathematics	Newton B. Smith, Ph.D., Chairman
Department of Physics	John G. Teasdale, Ph.D., Chairman

#### DIVISION OF THE SOCIAL SCIENCES

David S. Milne, Ph.D., Chairman

Department of Economics	Adam Gifford, Ph.D., Chairman
Department of Geography	Charles C. Yahr, Ph.D., Chairman
Department of Political Science	Robert F. Wilcox, Ph.D., Chairman
Department of Sociology-Anthropology	Bernard C. Kirby, Ph.D., Chairman
Public Administration	William R. Bigger, Ph.D., Coordinator



## CALENDAR

1961-1962

### FALL SEMESTER

August 1	Last day for filing application for admission to the college for the fall semester.
September 13-15	Registration, payment of fees, and enrollment in classes for the regular day program. (Students registering in the evening program only, see the schedule in the Evening Program Bulletin.)
September 16	Registration for the evening program. (For complete information, see the Evening Program Bulletin.)
September 18	Classes begin.
September 30	General Culture Test, by appointment, Test Office, 8.30 a.m.-12 m.
October 2	Last day to apply for refunds.
October 6	Last day for withdrawal from classes without penalty of class standing.
November 1	Graduate aptitude test for master's degree applicants by appointment made prior to October 4, Test Office. 6.30-10 p.m.
November 4	Graduate aptitude test for master's degree applicants by appointment made prior to October 4, Test Office. 8.30 a.m.-12 m.
November 4	Education department qualifying examination and comprehensive examination for master's degree, Part I, by appointment made prior to October 13, Test Office. 8.30 a.m.-12 m.
November 11	Holiday—Veterans Day.
November 18	Education department comprehensive examination for master's degree, by appointment—Education Department. 9 a.m.-12 m.
November 23-24	Thanksgiving recess.
December 1	Last day to withdraw from or otherwise change classes for the semester.
December 16	Last day of classes before Christmas recess.
December 18-January 1	Christmas recess.
January 2	Classes resume.
January 4	Last day for a complete withdrawal from college.
January 5	Last day to apply for graduation with the master's degree, Office of the Graduate Division.
January 17	First day of final examinations.
January 26	Last day of the fall semester.

## CALENDAR

1962

### SPRING SEMESTER

January 2	Last day for filing application for admission to the college for the spring semester.
January 31-February 2	Registration, payment of fees, and enrollment in classes in the regular day program. (Students registering in the evening program only, see the schedule in the Evening Program Bulletin.)
February 3	Registration for evening program. (For complete information, see the Evening Program Bulletin.)
February 5	Classes begin.
February 12	Holiday—Lincoln's Birthday.
February 19	Last day to apply for refunds.
February 22	Holiday—Washington's Birthday.
February 23	Last day for withdrawal from classes without penalty of class standing.
March 3	Education department qualifying examination and comprehensive examination for master's degree, Part I, by appointment made prior to February 7, Test Office. 8.30 a.m.-12 m.
March 10	Education department comprehensive examination for master's degree, by appointment—Education Division, 9 a.m.-12 m.
March 10	General Culture Test, by appointment—Test Office. 8.30 a.m.-12 m.
March 13	Graduate aptitude test for master's degree applicants, by appointment made prior to February 17, Test Office. 6.30-10 p.m.
March 17	Graduate aptitude test for master's degree applicants, by appointment made prior to February 17, Test Office. 8.30 a.m.-12 m.
April 14	Last day of classes before spring recess.
April 16-21	Spring recess.
April 23	Classes resume.
April 27	Last day to withdraw from or otherwise change classes.
April 27	Last day to apply for graduation with the master's degree, Office of the Graduate Division.
May 14	Last day for withdrawal from the college for the semester.
May 28	Last day of classes before final examinations.
May 30	Holiday—Memorial Day.
June 1	Final date for depositing completed bound theses at Office of the Graduate Division for June graduation.
June 8	Commencement.

### 1961 SUMMER SESSIONS

June 12-June 23	Interession.
June 26-Aug. 4	Term I summer session (6 weeks).
August 4	Final date for depositing completed bound theses at Office of the Graduate Division for summer graduation.
August 7-25	Term II summer session (3 weeks).

### 1962 SUMMER SESSIONS

June 11-22	Interession.
June 25-Aug. 3	Term I summer session (6 weeks).
August 3	Final date for depositing completed bound theses at Office of the Graduate Division for summer graduation.
August 6-24	Term II summer session (3 weeks).



## SPRING SEMESTER

## FEES

## FEES PAYABLE AT TIME OF REGISTRATION

Regular students (carrying more than six units):	
Materials and service	\$36.00
Student activity fee	8.00
Auditors pay same fees as students carrying courses for credit.	

Total required fees \$44.00

Limited students (carrying six units or less):	
Materials and service	18.50
Auditors pay same fees as students carrying courses for credit.	
Nonresident tuition (in addition to fees required of resident students):	
Nonresident student enrolled for 15 units or more	127.50
Nonresident 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.

Parking fees:	
Nonreserved spaces:	
Regular students	13.00
Limited students	6.00
Each alternate car in addition to first vehicle	1.00
Two-wheeled, self-propelled vehicle:	
Regular student	3.25
Limited student	1.50

## MISCELLANEOUS FEES

(Fees payable when service is rendered)

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
State teaching credentials (each credential)	4.00
The credential fee is collected through the college by cashier's check or post office money order made payable to the State Department of Education.	

## 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 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:

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) \$11.00
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.



## THE COLLEGE

San Diego State College is one of the 16 California state colleges supported by public funds. These colleges are administered by the Trustees of the State College System of California, a board created by Chapter 49, Statutes of 1960. This new governing board was created as the result of studies conducted over several years concerning the future of higher education in California.

A separate governing board for the colleges was recommended in the Master Plan for Higher Education in California which was presented to the Legislature in February 1960. The year 1961-62 is a year of transition as it is the first year of operations under this new governing board.

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 11,000 students, offers a four-year liberal arts course in over 50 major fields of study and a graduate program leading to the master of arts and master of science degrees in some 30 fields, with additional areas of concentration. 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 Division of 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 FACULTY

The college faculty consists of over 600 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 facilities of this college are noteworthy for an institution of its size. The library consists of over 220,000 volumes and receives more than 1,600 different periodicals selected to meet the requirements of a modern educational institution. A new addition to the library building increases the total floor space to over 100,000 square feet, with reading rooms seating 2,500 readers. Typing rooms, a microfilm and microcard room and carrels are provided. Professionally trained librarians are available to render assistance to students and faculty in their reading and reference work. The Campus Laboratory School Library, representing a collection of 20,000 volumes, possesses equipment and building facilities that are unique.

San Diego State also has inter-library loan agreements with numerous specialized libraries in and near San Diego such as those at the U. S. Navy Electronics Laboratory, Convair, General Atomics Division, Natural History Museum, 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, 1961. 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 1961-1962, the total charge per student per semester for campus board and room will be approximately \$398, 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. 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 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 great importance to the graduate student, the following information is presented for his 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.

## LOANS

Short- and long-term loans are available to full-time students who have attended San Diego State for at least one semester, demonstrated ability to do satisfactory graduate work, and shown evidence of financial need to complete their college education. Interest and repayment schedules vary, depending upon individual circumstances. In addition to some 28 individual loan funds, San Diego State participates in the National Defense Student Loan Program under Title II of the National Defense Education Act of 1958. Funds are available for long-term loans with special consideration to (1) students with a superior academic background who express a desire to teach in elementary or secondary schools, and (2) students whose academic background indicates a superior capacity or preparation in science, mathematics, engineering, or a modern foreign language. One of the advantages of the National Defense Student Loan Program is that it provides a "forgiveness" of 10 percent per year, not to exceed 50 percent of any loan, which may be cancelled for service as a full-time teacher in a public elementary or secondary school. Further information concerning the various loan funds available to graduate students may be obtained from the Administrative Assistant to the Dean of Students.

## 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. These health services include the direction of a medical doctor and a team of a full-time staff assistant and a part-time staff assistant. These health services are available to students for up to a part-time basis for several medical, dental, and emergency and counseling services. Treatment of minor physical difficulties and emergencies during 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 teacher education credential program. These examinations are conducted by the Health Services office. Only to those students who are approved 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 comprehensive 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 in the action phase of both the instructional program and the vocational guidance service at San Diego State. Since the placement service is rendered by the center, it is of great importance to the graduate student. The following information is presented for his guidance. 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 positions from government agencies and school districts are available through the Placement Center each year. Many of these centers are national in scope. On the average, each candidate is interviewed by three to five companies in the process of finding the position best suited to him. The Placement Center maintains a vocational library of current newspapers and company brochures and firms and agencies which graduate students may wish to use. A part-time job placement service is provided for those who need material 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 make it such future job placement as may be necessary.

## THE GRADUATE DIVISION

San Diego State College was authorized by the California State Board of Education to offer graduate work in connection with the general secondary credential in 1946. The master of arts degree was authorized in 1949 and the master of science degree in 1955. These degrees 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.

All graduate work leading to advanced degrees is under the administration of the Graduate Division which is also charged with 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 graduate programs is delegated by the president and the faculty to the Graduate Council under the chairmanship of the Dean of Graduate Studies who also acts as the administrative officer of the Graduate Division.

As of September 1960, 2,250 graduate students were enrolled at the college. From 1949 to 1960, San Diego State has awarded 840 master of arts degrees and 93 master of science degrees.

## 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

## GRADUATE TEACHING CREDENTIALS

Graduate work leading to the following credentials is offered:

1. General Secondary Credential.
2. Administration Credentials (Elementary and Secondary).
3. Supervision Credential.
4. General Pupil Personnel Services Credential.
5. Credential for Teaching Exceptional Children.
6. Junior College Credential.



### GENERAL SECONDARY CREDENTIAL

The general secondary credential is a basic credential authorizing its holder to teach any subject in grades 7 through 14. It requires a major and a minor in subject fields commonly taught in high school. It also requires a full year of graduate work in education and subject fields. For a more complete description of this credential, refer to Part Two of this bulletin on Graduate Credentials.

### ADMINISTRATION AND SUPERVISION CREDENTIALS

Those who hold credentials in administration are authorized to serve as principals, vice principals, and other administrative personnel as authorized by boards of education at the level designated in the credential.

Those who hold the supervision credential are authorized to supervise the teaching of any subjects at the level designated by the basic credential.

For further information on these credentials, refer to Part Two of this bulletin on Graduate Credentials.

### GENERAL PUPIL PERSONNEL SERVICES CREDENTIAL

The general pupil personnel services credential authorizes its holder to perform pupil personnel services in the areas of child welfare and attendance, psychology, psychometry, and pupil counseling, in elementary and secondary schools. For a more complete description of this credential, refer to Part Two of this bulletin on Graduate Credentials.

### CREDENTIAL FOR TEACHING EXCEPTIONAL CHILDREN

The credential for teaching exceptional children authorizes its holder to teach mentally retarded pupils, or pupils with hearing or speech difficulties. For a more complete description of this credential, refer to Part Two of this bulletin on Graduate Credentials.

### THE JUNIOR COLLEGE CREDENTIAL

The junior college credential authorizes its holder to teach in a junior college. For a more complete description of this credential, refer to Part Two of this bulletin on Graduate Credentials.

### PREREQUISITES FOR GRADUATE CREDENTIALS

All of the above credentials, with the exception of the junior college credential and the general secondary credential, are advanced credentials, and therefore require as prerequisite work the completion of all requirements for basic teaching credentials. Students not holding a California teaching credential, who wish one of the advanced credentials, should refer to the general college catalog for information on requirements for basic credentials.

The advanced credentials in administration, supervision, and pupil personnel services also require public school teaching experience.

Students who have no background in professional education, but who have adequate background in major and minor subject areas can expect to complete requirements for the general secondary credential in approximately three semesters of full-time work.

Students who hold basic teaching credentials, who desire one of the advanced credentials, can expect to meet requirements in one full year of graduate work or its equivalent. Refer to Part Two of this bulletin on Graduate Credentials for details on requirements.

### GRADUATE WORK IN THE CAMPUS EVENING PROGRAM

Graduate students who wish to engage in graduate study leading to the master's degree or graduate credentials, but who are unable to be in attendance during the day, may be able to complete the major portion of the requirements by enrolling in the Campus Evening Program. Classes offered under this program are part of the regular college offerings and are taught by the regular faculty of the college. Evening session graduate students working for the master's degree must meet all requirements of the Graduate Division for graduate students in the day session. Not more than six units of graduate work per semester should be attempted by a graduate student who is employed full-time. A special Evening Program Bulletin is issued each semester and may be obtained upon request from the Extended Services Office.

### GRADUATE WORK 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 all the requirements of the Graduate Division for graduate students in the day session enrolled during the regular academic year.

The summer sessions are organized into three terms: An Intercession 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 Intercession 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 graduate student whose education has been obtained in a foreign country must file an application for admission to the college, 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.

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.

In addition to making application for admission to the college as outlined above, all foreign graduate students seeking an advanced degree from this college must apply for admission to the Graduate Division with regular graduate standing. Application forms for this purpose may be obtained from the Office of the Graduate Division. Admission of foreign graduate students to the college does not imply admission to graduate degree programs.

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. No scholarships or fellowships are available except those listed in the appropriate section of this Bulletin.

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 has been approved by the Veterans Administration and the California State Department of Education to offer graduate work 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, the general secondary credential, school administration credential, etc.

Graduate veterans are required to carry graduate loads of not less than 12 officially approved units per semester for full subsistence. Half subsistence allowances may be given for six such units per semester.

### GRADUATE TEACHING ASSISTANTSHIPS

Graduate assistantships are available in the areas of biology, business administration (accounting, business management, and marketing), chemistry, engineering, English, geography, health education, industrial arts, mathematics, physical education, physics, and political science. For the academic year, 1961-62, these assistant-



ships pay \$2,430 for half time (six units) service and \$1,215 for quarter time (three units) service. Applicants must satisfy the requirements for regular graduate standing in the Graduate Division; have a 2.75 (A is 4.0) grade point average or better in the undergraduate major; and make a satisfactory score on the graduate aptitude test. Application blanks and further information may be obtained from the chairman of the department concerned.

### 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 specified.

#### AMERICAN ASSOCIATION OF UNIVERSITY WOMEN

Awarded each June to a graduating woman senior who will begin work in an accredited college or university toward a higher degree or credential. \$160 a year (\$80 per semester).

#### CALIFORNIA CONGRESS OF PARENTS AND TEACHERS, INC.

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

#### CONVAIR SCHOLARSHIPS

Awarded to graduate students in engineering and the allied sciences. Maximum amount of \$1,000 (payable in 10 monthly payments of \$100). Awards are made by Convair San Diego, a division of General Dynamics, and applications must be sent directly to the company. Interested students planning graduate work in engineering, chemistry, mathematics, or physics at San Diego State or some other college may obtain application forms from the Education Services Section of either Convair San Diego or Convair Astronautics Divisions of General Dynamics Corporation. Applications must be received by the company on or before March 1 of each year.

#### 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 ENGINEERING 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 Engineering Society.

#### SOROPTIMIST INTERNATIONAL OF SAN DIEGO

A \$200 scholarship to a senior or graduate woman student regularly enrolled in the Division of Physical Sciences with preference being given to a student enrolled in engineering, chemistry, or physics. In selecting the student, particular weight will be given to leadership qualities, scholastic ability and attainment.

#### 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.

### COUNSELING AND GUIDANCE TRAINING INSTITUTES

Arrangements have been made with the U.S. Department of Health, Education, and Welfare for San Diego State College to offer a guidance institute under provisions of Title V(B) of the National Defense Education Act, Public Law 85-864, during the 1961 summer session.

Information concerning this institute can be obtained from Dr. D. D. Malcolm, Institute Director, Guidance Institutes, San Diego State College.



## ADMISSION OF GRADUATE STUDENTS TO THE COLLEGE

### 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 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 calendar in this bulletin gives final dates for filing of applications. 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 program 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 since leaving this college. He must, however, file an application for readmission to the college and, if he plans to enter a master's degree program, an application for admission to the Graduate Division and must comply with all other admission procedures outlined above.

3. **Take Qualifying Examinations.** Graduate students may be required to take one or more of the examinations listed below. Consult the calendar in this bulletin for dates on which examinations are given.

- Fundamentals Test.** This test is required of graduate students only if they are candidates for any of the elementary teaching credentials. This test must be taken prior to admission to teacher education.
- English Proficiency Test.** This test is required of graduate students only if they are candidates for any of the secondary teaching credentials. For further information, consult the Coordinator of Secondary Education.
- General Culture Test.** This test is the achievement test required of applicants for the master of arts degree for teaching service. The test is also required of all graduate students planning to earn a general secondary credential through the teacher education program at this college. Applicants must make reservations for the test at the Test Office.
- Graduate Aptitude Test.** This test is required of all graduate students who intend to enroll in a master's degree program. A reservation for this test must be made at the Test Office. The test may be taken during the last semester of the senior year.

No preparation for this test is necessary and students desiring the master's degree should make arrangements to take the test prior to or during their first semester of graduate work. Consult the calendar in this bulletin for dates on which the test is scheduled or call the Test Office for information.

### RESIDENCY STATUS CLEARANCE

Each student enrolling in the college must be classified 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. Applicants for the Evening Program only will find instructions on procedure to follow in obtaining residency classification in the *Evening Program Bulletin*, which is also 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 GRADUATE 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 classifications:

- (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 regular graduate standing.

#### Unclassified Graduate Student

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.

#### 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 TO THE GRADUATE DIVISION

A student who expects to earn an advanced degree or a graduate credential must first be admitted to the college for graduate study as indicated above. He must then seek admission to the Graduate Division, and, upon being admitted, will attain regular graduate standing. Requirements for regular graduate standing are given below. Application for admission to the Graduate Division must be filed in duplicate on forms available at the Office of the Graduate Division.

A graduate student desiring to take course work but who does not intend to obtain an advanced degree or a graduate credential at San Diego State is not required to seek admission to the Graduate Division.

#### Regular Graduate Standing

In order to qualify for consideration as a candidate for an advanced degree or graduate credential, the student must be admitted to the Graduate Division with regular graduate standing. Requirements are as follows:



- (1) Completion of requirements for unclassified graduate standing in the college.
- (2) A minimum grade point average of 2.5 in all undergraduate work taken for the bachelor's degree.
- (3) Completion of the Graduate Aptitude Test described above.
- (4) Satisfactory completion of the minimum requirements of the division or department, including an appropriate major or its equivalent and the additional departmental qualifying examinations or requirements as described in Part Three of this bulletin under the major field of concentration.

Admission to the Graduate Division with regular graduate standing does not imply that the student will be advanced to candidacy for a graduate degree.

If a student does not meet the minimum grade point average of 2.5 in his undergraduate work, or if he has not met 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 program.

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

#### Assignment of a Graduate Adviser

At the time a student is given notice of having attained regular 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 college may prescribe, and after receiving the recommendation of his department, a student is eligible for advancement to candidacy.

#### WITHDRAWALS

A graduate student who has begun work on a graduate program but has completed no courses at this college within the last calendar year is considered to have withdrawn from the program. He must file application for readmission to the Graduate Division if he wishes to resume his graduate work. A student who withdraws from a graduate program 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 at the Office of the Graduate Division 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 held individually responsible for complying with regulations and deadlines established by the Graduate Division. Questions concerning graduate study at San Diego State College should be referred to the Office of the Graduate Division.

All graduate students matriculating after August 1961 will be held to the regulations contained in this bulletin. A student whose master's degree work began 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 Degree or Master of Science Degree.

#### INCOMPLETE GRADE

One calendar year beyond the end of the term when an incomplete grade is assigned will be allowed for making up the incomplete through removal of course deficiencies. If the student re-enrolls in the course for credit and completes it, he has repeated the course, for which he will receive the credit and grade points earned. 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

**Official Withdrawal or Change in Schedule of Classes.** A student withdrawing from college or from a class must file an official withdrawal form or change of program form with the Registrar. Forms may be obtained 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, a grade of W (withdrawal) will be recorded upon his permanent record for each class from which he has withdrawn. If he withdraws after the third week and not later than the end of the 11th 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 11th 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 graduate student whose scholarship record falls below a "C" average (2.0) for all postgraduate work attempted, or all postgraduate 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 postgraduate work attempted and on all postgraduate college work attempted at San Diego State College.

#### 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 programs.

**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.

#### 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 FOR THE GRADUATE DIVISION

A full-time 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 is 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 enrolled in either day or evening sessions 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 graduate 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 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 taking 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 Office of the Graduate Division four weeks in advance of the date of graduation.



course for credit. An student is not held for examinations and does not receive credit for a final grade in the course. A student may change his program from "credit" to "no credit" or vice versa within the time limits authorized for change 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 present in a course and who fails a final examination on the date scheduled must make a request for a re-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 is recommended by the Graduate Division 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 FOR THE GRADUATE DIVISION

A full-time graduate student who is not taking any 200-numbered courses may register for 17 1/2 units of credit during any semester. If one or more 200-numbered courses is included in the study list, the maximum number of units permitted is 17. An excess study load requires the approval of the Dean of Graduate Studies at the beginning of the semester in which the excess 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 enrolled in either day or evening sessions 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 graduate teaching assistants and course coordinators are limited to 17 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 program for the excess number of units completed.

#### OFFICIAL PROGRAMS OF STUDY

Official programs of study, as revised or revised by the Graduate Division and approved by the Graduate Council, are binding unless a student withdraws from the Graduate Division. Withdrawal is defined as failure to enroll 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 Division and the Dean of Graduate Studies. No course can be deleted from an official program until the course has been completed.

#### APPLICATION FOR GRADUATION

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

#### ADVANCEMENT TO CANDIDACY

In addition to holding regular graduate standing in the Graduate Division and meeting such professional and personal standards as the college may prescribe, a student desiring advancement to candidacy for the master of arts degree must file a complete graduate program of study, approved by his graduate adviser, in the Office of the Graduate Division. A student will be considered for advancement to candidacy after at least 15 units in his graduate work.

### PART TWO

## GRADUATE STUDY PROGRAMS—GENERAL REQUIREMENTS

### MASTER OF ARTS DEGREE

#### GENERAL REQUIREMENTS

The master of arts degree program of a student who has regular graduate standing in the Graduate Division is determined on the basis of his educational background, experience, and objectives. Students who plan to teach or hold other public school positions may elect a master of arts degree for teaching service with a concentration in an academic field or in education. Students for whom the foregoing objective is inappropriate may elect a master of arts degree with a major in an academic field. The specific requirements for the concentration and the major are stated in Part Three, Fields of Study and Courses of Instruction.

#### 1. COURSE AND UNIT REQUIREMENTS:

- A minimum of 30 units in approved courses numbered 100 or above. Thirty units must be earned within the seven-year period immediately preceding the date when all of the requirements for the degree are completed. A student will be required to validate courses outside the seven-year period for recency by comprehensive examinations over their content or by substituting other approved courses (already completed or to be completed) for outdated courses.
- A minimum of 12 units must be in 200-numbered courses.
- A minimum grade point average of 3.0 (B) as follows:
  - On all 100-numbered course work required to make up deficiencies.
  - On all course work listed on the official master's degree program, including transfer courses and courses carried concurrently with or subsequently to transfer courses.
  - On all 100- and 200-numbered courses taken at San Diego State College concurrently with or subsequently to the earliest course listed as a part of the official master's degree program.
- A minimum of nine units earned after advancement to candidacy.
- Not more than a total of six units may be in special study courses, 199 and 298.

#### 2. TEACHING CREDENTIAL:

Credentials are required only for the master of arts degree for teaching service. A student who desires to obtain this degree must hold a valid California day school credential (other than a provisional credential) or be a licensed teacher from another state with a minimum of one year of teaching experience, or complete all requirements for a California credential concurrently with the master's degree requirements. For an approved applicant preparing to teach or supervise in institutions not requiring teaching credentials, the credential requirement may be waived provided a minimum of 12 semester units of professional education is included in his graduate work.

#### 3. RESIDENCE:

Applicants must complete at least 24 units of their programs in residence at San Diego State College.



#### 4. ADVANCEMENT TO CANDIDACY:

In addition to holding regular graduate standing in the Graduate Division and meeting such professional and personal standards as the college may prescribe, a student desiring advancement to candidacy for the master of arts degree must file a complete graduate program of study, approved by his graduate adviser, in the Office of the Graduate Division. 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 Aptitude Examination 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 Office of the Graduate Division.

#### 5. EXAMINATIONS:

Prior to or during their first semester in residence, all students desiring the master of arts degree must take the Graduate Aptitude Examination. Students desiring the master of arts degree for teaching service must take the achievement examination in addition to the Graduate Aptitude Examination. Examinations required by departments are listed under departmental headings in Part Three, Fields of Study and Courses of Instruction. (See below for comprehensive examinations in Plan B.)

#### 6. THESIS:

Plan A, requiring a thesis or project, may be chosen by a student majoring in any field in which the master of arts degree is offered. Three units of credit are granted for the thesis or project, course 299, upon its acceptance by the student's thesis committee 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 Office of the Graduate Division 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. Information as to specific requirements for typing, binding, number of copies, etc., may be obtained at the Office of the Graduate Division.

Plan B, involving a comprehensive examination in lieu of a thesis, may, with approval of the department, be chosen by students majoring in biology (teaching), education, business education, French, geography, mathematics, physical sciences, and Spanish. 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 Office of the Graduate Division by the department or division.

#### 7. FINAL APPROVAL:

The student's graduate program of study as approved by the graduate adviser and the Graduate Council must be completed before the degree can be granted. An application for graduation must be filed in the Office of the Graduate Division four weeks in advance of the expected date of graduation to provide adequate time for official faculty vote of approval for graduation.

## MASTER OF SCIENCE DEGREE

### GENERAL REQUIREMENTS

Graduate programs leading to the master of science degree are designed to increase the professional competence of a student in his chosen field. They provide an opportunity for advanced and concentrated work in a specialized field and for training in the methods and techniques of research, thus developing the student's ability for independent self-directed study. The specific requirements for specialization within the major are stated in Part Three, Fields of Study and Courses of Instruction.

#### 1. COURSE AND UNIT REQUIREMENTS:

- A. A minimum of 30 units in approved courses numbered 100 or above and the satisfactory completion of six units of directed field experience, course 296, as described below. All 30 or 36 units must have been earned within the seven-year period immediately preceding the date when all of the requirements for the degree are completed. A student will be required to validate courses outside the seven-year period for recency by comprehensive examinations over their content or by substituting other approved courses (already completed or to be completed) for outdated courses.
- B. A minimum of 12 units must be in 200-numbered courses, exclusive of course 296.
- C. Minimum requirement for a graduate major, which in most departments is 24 units of approved 100- and 200-numbered courses.
- D. A minimum grade point average of 3.0 (B) as follows:
  - (a) On all 100-numbered course work required to make up deficiencies.
  - (b) On all course work listed on the official master's degree program, including transfer courses and courses carried concurrently with or subsequently to transfer courses.
  - (c) On all 100- and 200-numbered courses taken at San Diego State College concurrently with or subsequently to the earliest course listed as a part of the official master's degree program.
- E. A minimum of nine units of work earned after advancement to candidacy.
- F. Not more than a total of six units may be in special study courses, 199 and 298.

#### 2. RESIDENCE:

Applicants must complete at least 24 units of their programs in residence at San Diego State College.

#### 3. DIRECTED FIELD EXPERIENCE:

Each department offering the master of science degree, except in geology and mechanical engineering, will determine whether an applicant's present or previous experience may be substituted for all or part of the six units of directed field experience at the date that the student applies for graduate study in the department. If a department decides that the applicant's previous experience is acceptable, it notifies the Office of the Graduate Division of the decision, stating (1) the place of employment, (2) the type of work performed, and (3) the length of time employed.

If an applicant's previous experience cannot be accepted as a substitute for the entire six units of directed field experience, or if the student is without experience, the official program must show a total of more than 30 required units for graduation including course 296, Directed Field Experience. The department will make provision for the scheduling of this course as a part of its regular offerings, and will have the student enroll officially in it. Arrangements must be made with local government or social agencies or industries whereby the proper field experiences may be obtained. The department will determine the type of field experience, supervise the work being done by the



student at the place where he is obtaining the field experience, require from the student progress and/or work reports as appropriate, and report the credit earned to the Office of the Registrar at the close of the semester or summer session. The symbol "Cr" (credit) is used in reporting the satisfactory completion of course 296.

#### 4. ADVANCEMENT TO CANDIDACY:

In addition to holding regular graduate standing in the Graduate Division and meeting such professional and personal standards as the college may prescribe, a student desiring the master of science degree must file a complete graduate program of study, approved by his graduate adviser, in the Office of the Graduate Division. 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 obtained satisfactory scores on the Graduate Aptitude Examination and any required departmental examinations; (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 Office of the Graduate Division.

#### 5. EXAMINATIONS:

Every student desiring the master's degree must take the Graduate Aptitude Examination prior to or during his first semester in residence. Certain departments require additional examinations as listed in Part Three of this bulletin under the major field or area of concentration.

#### 6. THESIS:

**Plan A**, involving a thesis, is required for the master of science degree in business administration, psychology, and public administration. A thesis is not required for the degree in chemistry, geology, mathematics, mechanical engineering, or physics; however, subject to the department's approval, a student may elect Plan A.

**Plan B** requires the comprehensive examination in lieu of a thesis. (Refer to departmental or divisional requirements in Part Three of this bulletin under the major field or area of concentration, for further information.) Results on comprehensive examinations must be reported to the Office of the Graduate Division by the department or division.

#### 7. FINAL APPROVAL:

The student's graduate program of study as approved by the graduate adviser and the Graduate Council must be completed before the degree can be granted. An application for graduation must be filed in the Office of the Graduate Division four weeks in advance of the expected date of graduation to provide adequate time for official faculty vote of approval for graduation.

## GRADUATE CREDENTIALS

### GENERAL SECONDARY CREDENTIAL

The general secondary credential authorizes its holder to teach any subject in grades 7 through 14. It requires a satisfactory major and minor in subjects commonly taught in high school, and specific requirements in professional education. It requires a full year of graduate work.

Students interested in this credential are referred to the Coordinator of Secondary Education for additional information.

#### ADMISSION REQUIREMENTS

The requirements for admission to the credential program are in addition to the requirements for admission to the college. Students are admitted to teacher education for the general secondary credential on the basis of the following requirements:

1. A satisfactory score on the college aptitude test taken at the college.
2. Satisfactory scores in tests of English proficiency and mathematics competency.
3. Basic subject area background as evidenced by satisfactory scores on the general culture test given at the college.
4. Satisfactory quality of speech and voice control.
5. Adequate health status as evidenced by a health examination given for teaching credential candidates.
6. Interviews with representatives of the Teacher Education Admissions Committee, and with a faculty representative of the department in which the student is a major.
7. A minimum grade point average of 2.5 in all college work, and 2.75 in the major teaching subject.
8. An official evaluation and program approved by the authorized departmental representative in the student's major field, and by a representative in secondary education.

#### COURSE REQUIREMENTS

For the general secondary credential, students must satisfy course requirements in a major subject field, in a minor subject field, in general education, and in professional education courses. In addition, a two-unit course in Health Education for Teachers (Health Education 151) is required. Complete requirements are outlined in the general college catalog.

#### The Major Field

Majors for the credential are offered in the following subjects: art, biology and general science, business education, English, French, German, health education, homemaking education, industrial arts, language arts, mathematics, music, physical education, physical science and general science, psychology (requiring two minors), romance languages, social science, Spanish, and speech arts.

Majors for the credential require from 39 to 60 semester units, depending upon subject fields, including both undergraduate and graduate (200-numbered) courses. In most cases, approximately four to six 200-numbered units are required as part of the major.

#### The Minor Field

Teaching minors for the credential are offered in the following subjects: art, biology and general science, business education, economics, English, French, German, health education, history, homemaking education, industrial arts, mathematics, music, physical education, physical science and general science, social science, Spanish, and speech arts. Teaching minors usually require 21 to 27 semester units, including lower division and upper division work. Graduate courses (200-numbered) are not required in the minor.

#### General Education

The credential requires completion of at least 40 semester units in general education with a minimum of six units in each of the following areas: (1) science and



mathematics, (2) practical and fine arts, such as art, music, homemaking, health education, physical education, industrial arts, and similar fields, (3) social studies, and (4) the communicative arts, such as languages, literature, speech arts, and similar fields. Courses offered in fulfillment of this general education requirement may also be applied toward the fulfillment of major and minor requirements, provided the courses are within the same subject field as the major and minor.

#### Professional Courses in Teacher Education

For all general secondary candidates, regardless of major or minor subject fields, the following professional education courses, or their equivalents, are required: Education 100, The Secondary School (4 units); Education 110, Development and Learning (4 units); Education 120, The Teaching Process (4 units); Education 180 or 316, Directed Teaching—Secondary (6 units); Education 121, Methods and Materials of Instruction and Audio-visual Aids (4 units); Education 230, Guidance Problems in Secondary Education (3 units); and Education 250, Curricular Problems in Secondary Education (3 units). In addition, Health Education 151, Health Education for Teachers (2 units) is required.

#### ADVANCED STANDING

Students who hold the bachelor's degree, who may have graduate work applicable to the credential, may have their credits evaluated to determine additional needed requirements by applying for an official evaluation at the Evaluations Section, Admissions Office, Administration Building of the college.

#### RELATIONSHIP TO THE MASTER OF ARTS DEGREE

Students may fulfill requirements for the master's degree for teaching service and the general secondary credential concurrently. The total number of units required will depend upon the adequacy of the undergraduate work in the major and minor fields, and in professional education. Students working for both the credential and the master's degree concurrently may choose either the subject field concentration or one of the concentrations in education.

#### THE JUNIOR COLLEGE CREDENTIAL

This credential entitles the holder to teach in a junior college. In most departments, a combined master's degree and junior college credential program may be completed in a calendar year of graduate work.

#### ADMISSION REQUIREMENTS

The admission requirements are the same as those for the general secondary credential. For additional information, students are referred to the Coordinator of Secondary Education.

#### COURSE REQUIREMENTS

##### Majors and Minors

Recommendation of the candidate for the junior college credential will require 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. Those with a master's or doctor's degree from another institution will have their work evaluated to determine equivalency.

San Diego State 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 I 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. The minor must be equivalent to that for the general secondary credential. See the list of minors in the section of the general catalog on Professional Curricula in Teacher Education.

#### Professional Courses in Teacher Education

Ten semester hours of professional education as follows:

- Education 201. The Junior College (2)
- Education 223. Educational Psychology: Junior College (2)
- Education 251. Instructional Methods and Materials: Junior College (2)
- Education 316. Directed Teaching (4)

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

#### 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 office of the Graduate Division and to the graduate adviser in the field of his proposed master's degree.

#### ADMINISTRATION AND SUPERVISION CREDENTIALS

Students may earn credentials in elementary administration, secondary administration, and supervision. A person who holds an administration credential is authorized to serve as principal, vice principal, or other administrative officer as assigned by boards of education on the grade level designated by the credential. A person who holds the supervision credential is authorized to supervise the teaching of any subject on the grade level designated by the basic credential.

The elementary administration credential requires the completion of 30 semester hours of upper division or graduate work beyond the A.B. degree or general elementary credential. The secondary administration credential requires 18 semester hours of upper division or graduate work in addition to completion of requirements for the general secondary credential. The supervision credential requires the completion of 24 semester hours of upper division or graduate work concurrent with, or subsequent to, public school service.

#### ADMISSION REQUIREMENTS

Students desiring to earn any of the administration or supervision credentials must be admitted to the credential program prior to enrollment in Education 262, 263, 264, 265, 266, 267, or 360. Admission is granted on basis of the following requirements:

1. *Academic ability* as indicated by (a) regular graduate standing in the Graduate Division (refer to the section of this bulletin on Admission to the Graduate Division for specific information), (b) satisfactory scores on the Graduate Aptitude Examination (not required of students who hold the master's degree from an accredited college or university), and (c) a grade average of B on all graduate work applicable to credential requirements.
2. *Personal qualities* as evidenced in (a) a minimum of two interviews with members of the Administrative Studies Committee, (b) data recorded by the student on a personal data sheet, and (c) class participation during initial graduate course work.
3. *Professional competence* as evidenced in present or past teaching position by (a) leadership in education, (b) service to the profession, and (c) success as a teacher (minimum of two years of successful teaching experience).
4. *Previous preparation* as evidenced by an official evaluation for the credential desired, obtained from the Evaluations Section, Admissions Office of the college. A general elementary or general secondary teaching credential is a prerequisite. Students interested in administration or supervision credentials should apply for admission to the credential program at their first opportunity. Application forms and additional information are available in the office of the Coordinator of Administrative Studies, Education Division.

#### COURSE REQUIREMENTS

Courses required for administration and supervision credentials are usually available in evening sessions and summer sessions. Applicable course offerings are more limited during regular day sessions.

#### Elementary Administration

*Prerequisites:* 5 units to include Education 101, History and Philosophy of Education; and Education 151, Measurement and Evaluation in Elementary Education; and the general elementary teaching credential.



**Credential requirements:** 21 units to include Education 240, Curriculum Construction and Evaluation in Elementary Education; Education 115, Guidance in Elementary Education; Education 260, Federal, State, County and City School Organization and Administration; Education 270, School Finance, Business Administration and Law; Education 262, The Organization and Administration of Elementary Schools; Education 264, Elementary School Supervision; and either Education 266, Field Experience in Elementary School Administration and Supervision, or Education 360, Directed Internship.

**Additional courses for the master of arts degree:** 12-15 units to include (1) Education 290, Procedures of Investigation and Report; (2) one of the following: Education 204, Comparative Education; Education 205, History of Education; Education 206, Philosophy of Education; Education 207, Educational Sociology; or Education 220, Advanced Educational Psychology; (3) Education 278, Educational Leadership; and (4) either Education 295A-295B, Seminar, or Education 299, Thesis.

#### Secondary Administration

**Prerequisites:** 10-14 units to include Education 101, History and Philosophy of Education, or Education 100, The Secondary School; Education 250, Curricular Problems in Secondary Education; Education 152, Measurement and Evaluation in Secondary Education, or Education 120, The Teaching Process; and Education 230, Guidance Problems in Secondary Education; and the general secondary teaching credential.

**Credential requirements:** 15 units to include Education 260, Federal, State, County and City School Organization and Administration; Education 270, School Finance, Business Administration and Law; Education 263, The Organization and Administration of Secondary Schools; Education 265, Secondary School Supervision; and either Education 267, Field Experience in Secondary School Administration and Supervision, or Education 360, Directed Internship.

**Additional courses for the master of arts degree:** 12-15 units to include (1) Education 290, Procedures of Investigation and Report; (2) one of the following: Education 204, Comparative Education; Education 205, History of Education; Education 206, Philosophy of Education; Education 207, Educational Sociology; or Education 220, Advanced Educational Psychology; (3) Education 278, Educational Leadership; and (4) either Education 295A-295B, Seminar, or Education 299, Thesis.

#### School Supervision

**Prerequisites:** The holding of the appropriate basic teaching credential (general elementary or general secondary).

**Credential requirements:** 24 units of postgraduate work concurrent with or subsequent to public school service to include (1) Education 240, Curriculum Construction and Evaluation in Elementary Education, or Education 254, Advanced Problems in Secondary School Instruction; (2) Education 264, Elementary School Supervision, or Education 265, Secondary School Supervision; (3) Education 278, Educational Leadership; (4) Education 240, Curriculum Construction and Evaluation in Elementary Education, or Education 250, Curricular Problems in Secondary Education; (5) Education 266, Field Work in Elementary School Administration and Supervision, or Education 267, Field Work in Secondary Administration and Supervision, or Education 360, Directed Internship; (6) Education 262, The Organization and Administration of Elementary Schools, or Education 263, The Organization and Administration of Secondary Schools; (7) Education 270, School Finance, Business Administration, and Law; and (8) Education 207, Educational Sociology, or Education 260, Federal, State, County and City School Organization and Administration.

**Additional courses for the master of arts degree:** 6-9 units to include (1) Education 290, Procedures of Investigation and Report; (2) Education 295A-295B, Seminar, or Education 299, Thesis.

#### ADVANCED STANDING

Students who have already completed courses which may apply to these credentials may have their credits evaluated to determine needed additional work to qualify for any of the credentials by applying for an official evaluation at the Evaluations Section, Admissions Office, Administration Building of the college.

#### EXPERIENCE

Before a student can be granted an administration credential, he must verify a minimum of two years of successful teaching experience at the appropriate grade level. For the supervision credential, he must verify desirable personal characteristics for supervision by recommendations from two persons associated with him in a school administrative or supervisory relationship within the last five years, and must verify a minimum of five years of successful public school service.

#### RELATIONSHIP TO THE MASTER OF ARTS DEGREE

Students who fulfill admission requirements for administration or supervision credential programs will need to meet additional requirements for advancement to candidacy for the master's degree. (Refer to the section of this bulletin on master of arts degree programs for further information.) Students who meet course requirements for the credential will be required to complete additional course work to fulfill master's degree requirements, as indicated above.

#### GENERAL PUPIL PERSONNEL SERVICES CREDENTIAL

The credential for general pupil personnel services authorizes the holder to perform any pupil personnel services in the fields of child welfare and attendance, psychology, psychometry, and pupil counseling, in elementary and secondary schools, except for the specialized function of testing for special class placement, which can be performed only by those who have completed the school psychometrist specialization, and only then if they are working under the supervision of one holding the school psychologist authorization. The special authorization of "school psychologist" is an extension of the general credential, requiring a second graduate year of applicable work.

In general, counselors and other pupil personnel workers who are employed more than half time are required to hold the general pupil personnel services credential.

#### ADMISSION REQUIREMENTS

Students who plan to complete requirements for this credential are expected to be formally admitted to the credential program prior to the completion of the first 15 units of the program. Admission is granted on basis of the following requirements:

1. *Academic ability* as indicated by (a) regular graduate standing in the Graduate Division (refer to the section of this bulletin on Admission to the Graduate Division for specific information), (b) satisfactory scores on the graduate aptitude examination (not required of students holding the master's degree from an accredited college or university), and (c) a minimum grade point average of 3.0 (B) on all postgraduate work applicable to the credential program. (A minimum of six units is required before consideration will be given.)

2. *Personal qualities* as evidenced in interviews and other personal data.

3. *Professional background and experience* as described in a paper of five pages or less, which includes a self-evaluation as a guidance worker.

4. *Previous preparation* as evidenced by an official evaluation for the credential obtained from the Evaluations Section, Admissions Office of the college.

Applicants for the master's degree must meet additional requirements. (Refer to the section of this bulletin on master of arts degree for further information.) Students interested in this credential should apply for admission to the program at their first opportunity. Application forms and additional information are available in the Office of the Coordinator of Guidance Studies, Education Division.

#### COURSE REQUIREMENTS

To satisfy the requirements for the credential, a student must complete a minimum of 30 units of postgraduate work which is composed of field experiences and classwork. All students are required to complete a general core of work and one specialized area selected from pupil counseling (elementary or secondary), child welfare and attendance, or school psychometry. Students desiring the school psychology authorization must first complete the specialized area in psychometry, and then complete an additional 30 units of specialized work in psychology and educational psychology.

Courses required for this credential are usually available in evening sessions and summer sessions. Applicable course offerings are more limited during the regular day sessions.



### Prerequisite

A minimum of 12 semester units of education, including growth and development, educational psychology, and measurement and evaluation, is prerequisite to the program.

### The General Core Area

For students planning to specialize in pupil counseling (elementary or secondary) or in child welfare and attendance, the general core area consists of the following courses: either Education 115, Guidance in Elementary Education (3 units), or Education 230, Guidance Problems in Secondary Education (3 units); Psychology 104A, Statistical Methods in Psychology (3 units); Education 231, Techniques of Pupil Appraisal (3 units); Education 170, Exceptional Children (3 units); Education 233, Guidance Counseling Techniques (3 units); and Education 234, Administration of Pupil Personnel Services. Students planning to specialize in school psychometry or school psychology are advised to substitute Psychology 105, Psychological Testing, for Education 231, above, and to add to the general core area, Psychology 151, Introduction to Clinical Appraisal.

### Areas of Specialization

For each of the specialized areas, a minimum of 9 to 15 units is required, as indicated below:

*School Counseling—Elementary:* Education 247, Advanced Diagnosis and Treatment of Learning Difficulties (3 units); and Education 330, Guidance Internship (6 units).

*School Counseling—Secondary:* Education 232, Problems in Vocational Guidance (3 units); and Education 330, Guidance Internship (6 units).

*Child Welfare and Attendance:* Sociology 280, Principles of Social Case Work (3 units); Sociology 281, Field Work in Social Case Work (3 units); and Education 330, Guidance Internship (6 units).

*School Psychometry:* Psychology 204, Individual Psychological Testing (3 units); Psychology 205, Advanced Mental Testing (3 units); Education 220, Advanced Educational Psychology (3 units); and Education 330, Guidance Internship (6 units).

*School Psychologist:* Requires completion of the general core area, the specialization area for school psychometry listed above, and an additional year of specified graduate work.

### ADVANCED STANDING

Students who have already completed graduate work may have their credits evaluated to determine additional work needed for the credential by applying for an official evaluation at the Evaluations Section, Admissions Office of the college.

### EXPERIENCE

Before a student can be granted the credential, he must verify a minimum of two years of successful teaching experience. Under certain conditions, students may substitute two years of supervised field experience in school social work, school psychometry, or school psychology, of which at least one year must have been in a public school.

### RELATIONSHIP TO THE MASTER OF ARTS DEGREE

Students who fulfill admission requirements for the credential program will need to fulfill additional requirements for advancement to candidacy for the master's degree. (Refer to the section of this bulletin on master of arts degree for further information.) Students who complete the course requirements for the credential will usually have completed all requirements for the master's degree in education with a concentration in pupil personnel services, except for Education 290A-290B, Procedures of Investigation and Report, and Bibliography (3 units) and either Education 295A-295B, Seminar (6 units) or Education 299, Thesis (3 units).

### CREDENTIAL FOR TEACHING EXCEPTIONAL CHILDREN

The credential for teaching exceptional children is available with two areas of concentration: teaching of the mentally retarded, and speech correction and lip reading. The first authorizes the holder to teach special classes designed for mentally retarded pupils in elementary and secondary schools, and the second authorizes the teaching of special classes for elementary or secondary pupils who need speech correction or training in lip reading.

### ADMISSION REQUIREMENTS

Students desiring to complete requirements for this credential must be formally admitted to the credential program prior to the completion of 15 units of the required courses. Admission is granted on the basis of the following requirements:

1. *Academic ability* as indicated by (a) a grade point average on all college work of 2.2 and (b) satisfactory completion of a basic credential program or admission to same. For graduate students, regular graduate standing is required.

2. *Personal qualities* as evidenced in interviews with at least two members of the Special Education Studies Committee of the Education Division.

3. *Professional background and experience* as described in a paper of five pages or less, which includes a self-evaluation as a teacher of exceptional children.

4. *Previous preparation* as indicated by an official evaluation for the credential obtained from the Evaluations Section, Admissions Office of the college.

Students interested in the credential for teaching exceptional children should apply for admission to the program at their first opportunity. Admission forms and additional information are available in the Office of the Coordinator of Special Education, Education Division.

### COURSE REQUIREMENTS

Course work leading to the credential for teaching exceptional children is usually available in regular day sessions, evening sessions, and summer sessions. Some of the required courses are usually offered only in evening and summer sessions.

### Prerequisite

A student desiring this credential must hold, or concurrently earn, a general elementary, junior high school, or general secondary credential.

### General Core Subjects for All Students

Thirteen units of subjects in a general core are required of all students for either area of concentration: teaching of the mentally retarded, or speech correction and lip reading. The following courses must be completed: Education 170, Exceptional Children; Education 115, Guidance in the Elementary School, or Education 230, Guidance Problems in Secondary Education, or Psychology 152, Introduction to Methods of Counseling; Speech Arts 170, Speech Development; and Education 182 or Education 371 or 374, Directed Internship in the field of specialization, or one year of verified successful teaching experience in the area of specialization.

### Areas of Specialization

*Teaching of the Mentally Retarded.* In addition to the general core of 13 units, a minimum of 11 units from the following courses, plus electives to bring the total units for the credential to a minimum of 24: Education 171, Curriculum and Methods of Teaching the Mentally Retarded, or Education 172, Workshop for Teachers of the Mentally Retarded; Art 10B, Arts and Crafts, or Education 172, Workshop for Teachers of Mentally Retarded when taken for six units; and Psychology 109, Mental Deficiency.

*Speech Correction and Lip Reading.* In addition to the general core of 13 units, a minimum of 21 units to include the following courses: Speech Arts 174, Principles and Methods of Speech Correction; Speech Arts 176, Stuttering and Neurological Disorders; Speech Arts 177, Aural Rehabilitation; Speech Arts 178, The Teaching of Lip Reading; Speech Arts 179, Clinical Methods in Speech Correction; and Speech Arts 180, Field Work in Clinical Practice in Speech Correction.

### ADVANCED STANDING

Students who have completed applicable courses, either graduate or undergraduate, may have their credits evaluated to determine needed additional course requirements by applying for an official evaluation at the Evaluations Section, Admissions Office of the college.

### RELATIONSHIP TO THE MASTER OF ARTS DEGREE

Students who meet admission requirements for the credential program will need to meet additional requirements for advancement to candidacy for the master's degree. (Refer to the section of this bulletin on the master of arts degree for further information.) Students who fulfill the course requirements for the credential will be required to complete additional courses for the master's degree, including Education 290A-290B, Procedures of Investigation and Report, and Bibliography (3 units) and Education 295A-295B, Seminar (6 units) or Education 299, Thesis (3 units).



## 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 regular 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.



## ART

### GENERAL INFORMATION

The Department of Art offers graduate work 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 department also offers a major and a minor in art for the general secondary credential.

The Art Department is equipped to offer advanced work 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 regular graduate standing, as described in Part One of this bulletin under "Admission to the Graduate Division." 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 the 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 regular graduate standing may enroll for courses, under guidance of the department, in order to meet the standard requirements.

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

In addition to meeting the requirements for regular graduate standing and the general requirements for the master of arts degree as described in Part Two 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 290A, 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 DEPARTMENTAL REQUIREMENTS FOR THE MASTER OF ARTS DEGREE FOR TEACHING SERVICE

In addition to meeting the requirements for regular graduate standing and the general requirements for the master of arts degree as described in Part Two 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 10 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.

### SPECIFIC REQUIREMENTS FOR THE GENERAL SECONDARY CREDENTIAL

Applicants for the general secondary credential must complete a minimum of four units of 200-numbered courses in art for the teaching major in art.

### ADVANCEMENT TO CANDIDACY

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

### FACULTY

Department Chairman: E. G. Jackson

Graduate Advisers: Major, E. G. Jackson; Teaching, J. D. Swiggett

Credential Adviser: E. G. Jackson

Professors: E. G. Jackson, M.A.; G. N. Sorenson, M.A.; J. D. Swiggett, M.F.A.

Associate Professors: J. H. Dirks, A.B.; Ilse H. Ruocco, M.A.

Assistant Professors: Marybelle S. Bigelow, M.A.; W. F. Bowne, M.A.; Harold Gregor, Ph.D.; Paul A. Lingren, M.A.; Martha W. Longenecker, M.F.A.; Jo Ann L. Tanzer, M.A.; Robert Wallace, D.Litt.

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

#### UPPER DIVISION COURSES

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

- 216. Seminar in Creative Painting (3)  
Prerequisites: Art 112A, 112B, and 2 units of Art 116; or 4 units of Art 116. 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: 4 units in Art 117. 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 50 and 150 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-Zoology, Botany, and Microbiology offer graduate work 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. The general secondary credential with a teaching major or minor in biology is also offered.

The completion of a new Life Science building in 1962 will greatly increase the present facilities for graduate study in the biological sciences. Additional facilities available in the community include the San Diego Zoo Hospital, affiliated laboratories of the San Diego Biomedical Research Institute, 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 regular graduate standing, as described in Part One of this bulletin under Admission to the Graduate Division, a student must satisfy the following requirements before he will be recommended for regular graduate standing in the Graduate Division:

- Have an undergraduate major in one of the biological sciences. Courses taken to remove deficiencies in the undergraduate major are in addition to those specifically required for the master's degree.
- Satisfactorily complete a qualifying examination in the biological sciences. This examination will be given in May, July, and in November, 1961. Details may be obtained from the Division of Life Sciences.

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

In addition to meeting the requirements for regular graduate standing and the general requirements for the master of arts degree as described in Part Two 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 (excluding Biology 296, Directed Field Experience), of which at least 12 units must be in 200-numbered courses, including the thesis. A reading knowledge of scientific French, German, or Russian, and a final oral examination on the field of the thesis are also required.

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

In addition to meeting the requirements for regular graduate standing and the general requirements for the master of arts degree as described in Part Two 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 (excluding Biology 296, Directed Field Experience), 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 Graduate Biology 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 examination 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 DEPARTMENTAL REQUIREMENTS FOR THE MASTER OF SCIENCE DEGREE

In addition to meeting the requirements for regular graduate standing, the student must satisfy the general requirements for the master of science degree, described in Part Two of this bulletin, section on Master of Science Degree. 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 24 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.
- Complete the requirement for Biology 296, Directed Field Experience, as described in Part Two of this bulletin in the section on the Master of Science Degree.
- Either (1) a thesis or a project (Plan A) or (2) a comprehensive examination in lieu of the thesis or project (Plan B). Both plans are available in all four areas of concentration for the degree. If Plan A is selected, the student must satisfactorily defend his thesis or project. If Plan B is selected, the student must obtain a satisfactory score on the final comprehensive examination administered prior to the granting of the degree.

## ADVANCEMENT TO CANDIDACY

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

## SPECIFIC REQUIREMENTS FOR THE GENERAL SECONDARY CREDENTIAL

Applicants for the general secondary credential must complete a minimum of four units of 200-numbered courses in the biological sciences, excluding Biology 296, Directed Field Experience.

## GRADUATE TEACHING ASSISTANTSHIPS

Graduate teaching assistantships in biology are available to a limited number of qualified students. Application blanks and additional information may be secured from the chairman of the division. Refer to Part One of this bulletin under Graduate Teaching Assistantships for information on stipends and required qualifications.

## FACULTY

Division Chairman: R. D. Harwood

Department Chairman: A. H. Gallup, Botany; H. A. Walch, Microbiology; R. W. Crawford, Biology-Zoology

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; Zoology, G. H. Tucker, C. L. Brandt

Master of Science: Biology, E. W. Huffman; Botany, A. H. Gallup; Microbiology, M. A. Myers; Zoology, G. H. Tucker, C. L. Brandt

Credential Adviser: A. H. Gallup

Professors: J. E. Crouch, Ph.D.; A. H. Gallup, Ph.D.; R. D. Harwood, Ph.D.; M. A. Myers, Ph.D.; A. C. Olson, Ph.D.; K. M. Taylor, Ph.D.; G. H. Tucker, Ph.D.

Associate Professors: K. K. Bohnsack, Ph.D.; R. W. Crawford, Ph.D.; E. W. Huffman, Ph.D.; D. L. Jameson, Ph.D.; D. A. Preston, Ph.D.; F. J. Ratty, Ph.D.; H. A. Walch, Ph.D.

Assistant Professors: E. G. Barham, Ph.D.; C. L. Brandt, Ph.D.; D. A. Farris, Ph.D.; D. R. Harvey, M.A.; D. Hunsaker, Ph.D.; W. A. McBlair, Ph.D.; H. B. Moore, Ph.D.; C. E. Norland, M.S.; D. C. Shepard, Ph.D.; M. A. Taylor, M.S.; H. L. Wedberg, B.A.

## COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS

### UPPER DIVISION COURSES

#### Biology

- General Physiology (4)
- Principles of Taxonomy (2)
- General Cytology (4)
- Ecology (4)
- Aquatic Biology (4)
- Fishery Biology (2)
- 150A-150B. Radiation Biology (2-2)
- Genetics (4)
- Cytogenetics (4)
- Conservation of Wildlife (3)
- Experimental Evolution (3)
- History of Biology (3)
- Statistical Methods in Biology (3)
- Methods of Investigation (2)

#### Botany

- Mycology (4)
- Plant Anatomy (4)
- Plant Physiology (4)
- Cultivated Trees and Shrubs (3)
- Systematic Botany (4)
- Plant Pathology (4)
- Agricultural Botany (2)
- Special Study (1-6)

#### Microbiology

- General Bacteriology (Microbiology) (4)
- Advanced Bacteriology (4)
- Fundamentals of Immunology and Serology (4)
- Medical Mycology (4)
- Bacterial Physiology (2)
- Bacterial Physiology Laboratory (2)
- Virology (2)
- Hematology (3)
- Special Study (1-6)

#### Zoology

- Embryology (4)
- Histology (4)
- Marine Invertebrates (4)
- Natural History of the Vertebrates (4)
- Ichthyology (4)
- Ornithology (4)
- General Entomology (4)
- Advanced Entomology (4)
- Immature Insects (3)
- Economic Entomology (4)
- Medical Entomology (3)
- Parasitology (4)
- Comparative Animal Physiology (4)
- Human Genetics (4)
- Special Study (1-6)

### GRADUATE COURSES

#### Biology

- Seminar in Cellular Biology (2)**  
Prerequisite: Biology 101 or 103, or consent of instructor.
- Seminar in Growth and Development (2)**  
Prerequisite: Zoology 100 or consent of instructor.
- Seminar in Speciation (2)**  
Prerequisite: Biology 155 or 160, or consent of instructor.
- Seminar in Ecology (2)**  
Prerequisite: Biology 110 or 112, or consent of instructor.
- Seminar in Biogeography (2)**  
Prerequisite: Biology 110 or 160, or consent of instructor.
- Seminar in General Physiology (2)**  
Prerequisite: Biology 101 or Botany 107, or consent of instructor.
- Seminar in Genetics (2)**  
Prerequisite: Biology 155 or consent of instructor.
- 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.
- Directed Field Experience (1-6)**  
Experience in local laboratories under supervision. Meets requirements of directed field experience for candidates for the master of science degree. Required in addition to the 30-unit requirement for the degree, when previous experience is lacking or not acceptable.



**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*

**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*

**210. Seminar in Medical Bacteriology (2)**

Prerequisite: Microbiology 102 or consent of instructor.

**220. Seminar in Industrial and Agricultural Microbiology (2)**

Prerequisite: Microbiology 101 or consent of instructor.

**230. Seminar in Medical Mycology (2)**

Prerequisite: Microbiology 104 or consent of instructor.

**240. Seminar in General Microbiology (2)**

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

**250. Seminar in Virology (2)**

Prerequisite: Microbiology 107 or consent of instructor.

**260. Seminar in Immunology and Serology (2)**

Prerequisite: Microbiology 103 or consent of 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 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*

**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 program 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. Personnel Management |
| 4. Industrial 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 Industrial Management 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.

### ADMISSION TO THE GRADUATE DIVISION

In addition to the general requirements for admission to the Graduate Division with regular graduate standing, as described in Part One of this bulletin under Admission to the Graduate Division, the Division of Business Administration requires that a student have a grade point average on all college work attempted of 3.0 (B) up to the time he applies for admission to the Graduate Division.

The division may also recommend for regular graduate standing those whose capacity for graduate study is demonstrated by satisfactory scores upon the following two examinations which are required of all applicants:

1. Graduate Aptitude Examination. (Appointments 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; or by writing to the Educational Testing Service, 20 Nassau Street, Princeton, New Jersey.)

The division will decline to recommend for regular graduate standing a student who fails to qualify under these standards.



### Course Prerequisites for Regular Graduate Standing

Business Administration 1A-1B, Principles of Accounting (6 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 140, Statistical Methods (3 units)  
 Business Administration 131, Corporation Finance, or Economics 135, Money and Banking (3 units)

### SPECIFIC DIVISIONAL REQUIREMENTS FOR THE MASTER OF SCIENCE DEGREE

In addition to meeting the requirements for regular graduate standing and the general requirements for the master of science degree, described in Part Two of this bulletin under master of science degree, the student must complete at least 15 units of 200-numbered courses. The 30 to 36 required units of postgraduate work must include the following courses:

Business Administration 299, Thesis	Units 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
Business Administration 296, Directed Field Experience (required only of students who do not have satisfactory experience in their occupational area)	0-6
Total number of units required	30-36

### ADVANCEMENT TO CANDIDACY

In addition to the general requirements for advancement to candidacy, which are described in Part Two of this bulletin under Master of Science Degree, 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.

### GRADUATE TEACHING ASSISTANTSHIPS AND SCHOLARSHIPS

Graduate teaching assistantships in business administration are available to a limited number of qualified students. Application blanks and additional information may be secured from the chairman of the division. Refer to Part One of this bulletin under Graduate Teaching Assistantships for information on stipends and required qualifications. Refer to Part One of this bulletin also for a list of scholarships available to graduate students.

### FACULTY

Division Chairman: Charles W. Lamden

Department Chairmen:

Accounting Department: W. H. Wright

Business Law and Finance Department: D. C. Bridenstine

Management Department: D. W. Belcher

Marketing Department: G. K. Sharkey

Coordinator of Graduate Programs: Simon Reznikoff

Graduate Advisers:

Accounting: C. W. Lamden, V. E. Odmark

Business Management: A. C. Pierson, G. L. Hodge, L. H. Peters, W. R. Robinson

Finance: D. C. Bridenstine, W. R. Robinson

Industrial Management: Oliver Galbraith, G. L. Hodge, A. Srbich

Insurance: D. C. Bridenstine

Junior College Credential: E. P. Brown

Marketing: G. K. Sharkey, E. A. Hale

Personnel Management: 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.; W. H. Wright, Ph.D.

Associate Professors: D. C. Bridenstine, Ph.D.; E. A. Hale, Ph.D.; G. K. Sharkey, Ph.D.

Assistant Professors: W. F. Barber, D.B.A.; Arthur Brodshatzer, M.B.A., C.P.A.; James Chapman, J.D.; L. J. Dodds, M.B.A., C.P.A.; D. B. Ferrel, M.B.A., C.P.A.; Oliver Galbraith, M.B.A.; W. H. Hippaka, J.D.; R. P. Hungate, Ph.D.; D. F. Lawson, M.S.; L. R. Loschen, M.B.A., C.P.A.; L. H. Peters, Ph.D.; A. C. Pierson, M.B.S.; Simon Reznikoff, LL.B.; W. R. Robinson, M.B.A.; L. W. Snudden, M.B.A.; A. L. Srbich, M.B.A.

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

#### UPPER DIVISION COURSES

100. Intermediate Accounting (3)	137. Motion and Time Study (3)
101. Advanced Accounting (3)	138. Systems and Data Analysis (3)
102. Cost Accounting (3)	140. Employee Relations (3)
103. Advanced Cost Accounting (3)	141. Personnel Management Laboratory (1)
106. Income Tax Accounting (3)	142. Wage and Salary Administration (3)
107. Advanced Income Tax Accounting (3)	143. Problems in Employee Relations (3)
108. Governmental Accounting (3)	145. Human Factors in Management (3)
112. Auditing (3)	149. Business Policy (3)
113. Advanced Auditing (3)	151. Problems of Marketing Management (3)
114. Accounting Systems (3)	152. Retailing Principles (3)
115. Financial Statements (3)	153. Advertising Principles (3)
116. Internal Auditing and Controllership (3)	154. Advertising Problems (3)
119. C.P.A. Review	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 (3)
X-126A-B. C.L.U. Preparation (3-3) (Special permission required)	163. Sales Management (3)
128. Credits and Collections (3)	164. Purchasing and Buying (3)
129. Credit Management (3)	165. Foreign Marketing (3)
130A-130B. Advanced Business Law (3)	170. Real Estate Principles and Practices (3)
132. Fundamentals of Management (3)	171. Law of Real Property (3)
133. Investments (3)	172. Property Management (3)
134. The Social Environment of Business (3)	173. Real Estate Finance (3)
135. Production Management (3)	174. Real Estate Appraisal Theory (3)
136. Production and Quality Control (3)	175. Appraisal of Real Estate (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 accounting principles and theory.

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

Prerequisites: Business Administration 132 and consent of instructor.

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



**221. Seminar in Personnel Management (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 communication, participation, status, control, and effects of technological changes.

**222. Seminar in Finance (3)**

Prerequisites: Business Administration 131 or Economics 135; and permission 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 personal, partnership and corporation estates.

**224. Seminar in Industrial Management (3)**

Prerequisites: Economics 140 or equivalent; Mathematics 22 or equivalent; and consent of instructor.

A study of quantitative analytical techniques for managerial planning and decision-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.

**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)**

Students lacking practical experience in the occupational area will be required to obtain such experience in the field, subject to approval by the faculty adviser. Required in addition to the 30 units for the master of science degree, when experience is lacking or not acceptable. Not open to students who have already qualified.

**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 work 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.

The general secondary credential is also available with a major or a minor in business education.

### ADMISSION TO THE GRADUATE DIVISION

All students must satisfy the general requirements for admission to the Graduate Division with regular graduate standing, as described in Part One of this bulletin under Admission to the Graduate Division.

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

In addition to meeting the requirements for regular graduate standing and the general requirements for the master of arts degree as described in Part Two 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 10 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 or a project report, or may elect to take a comprehensive departmental examination composed of the following parts:

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

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

### SPECIFIC DEPARTMENTAL REQUIREMENTS FOR THE GENERAL SECONDARY CREDENTIAL

Applicants for the general secondary credential must complete six units of Business Administration 270, Seminar in Business Education, as required in the teaching major in business education. Refer to Part Two of this bulletin on Advanced Credentials for further information on the general secondary credential.

### ADVANCEMENT TO CANDIDACY

All students must satisfy the general requirements for advancement to candidacy, which are described in Part Two of this bulletin under Master of Arts Degree.

### FACULTY

Department Chairman: M. L. Crawford

Graduate Adviser: E. C. Archer, M. L. Crawford, E. C. Gibson

Credential Adviser: M. L. Crawford, Evangeline LeBarron

Professor: E. D. Gibson, Ed.D.

Associate Professors: E. C. Archer, Ed.D.; M. L. Crawford, M.S.; Evangeline LeBarron, B.A., B.S.; Lura Lynn Straub, M.C.S.

Assistant Professors: R. G. Langenbach, M.A.; 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)<br>181. Administration and Supervision of Distributive Education (3)<br>183A-183B. Executive Secretarial Procedures (3-3) | 184. Office Management (3)<br>185. Office Systems and Automation (3)<br>189. Objectives and Curricula in Business Education (3)<br>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 education, and basic business education. 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, 173.  
 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. Students have an option of a comprehensive examination or a thesis or project.

## CHEMISTRY

### GENERAL INFORMATION

The Department of Chemistry offers graduate work 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 general secondary credential with teaching majors and minors in physical science and general science is also offered.

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

Within a 100-mile radius of San Diego are to be found chemical operations of great diversity, including steel mills, petroleum refineries, and all types of food processing plants. Within San Diego proper are medical, industrial, and governmental laboratories concerned with marine products, aircraft materials, atomic energy, and many other research fields. Arrangements may be made with these installations which, in addition to providing stimulation and illustration, will permit summer employment or 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 regular graduate standing, as described in Part One 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 DEPARTMENTAL REQUIREMENTS FOR THE MASTER OF ARTS DEGREE

In addition to meeting the requirements for regular graduate standing and the general requirements for the master of arts degree as described in Part Two of this bulletin, the student must complete a graduate program which includes a major consisting of at least 24 units in chemistry (excluding Chemistry 290 and 296) from courses listed below as acceptable on master's degree programs, at least 15 of which must be in 200-numbered courses (excluding Chemistry 298). Chemistry 220 and Chemistry 299 are required courses. The student must demonstrate a reading knowledge of scientific German and must pass a final oral examination on his thesis.

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

In addition to meeting the requirements for regular graduate standing and the general requirements for the master of arts degree as described in Part Two 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 10 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 DEPARTMENTAL REQUIREMENTS FOR THE MASTER OF SCIENCE DEGREE

In addition to meeting the requirements for regular graduate standing, the student must satisfy the general requirements for the master of science degree, as described in Part Two of this bulletin under Master of Science Degree. Subject to



departmental approval, the student may elect Plan A, with the thesis, or Plan B, with the comprehensive examination. The student must also meet the following departmental requirements:

- (a) Take the qualifying examination in chemistry no later than the first semester in residence.
- (b) Prepare a program of studies in consultation with his departmental advisory committee to incorporate the following:
  - (1) Twelve units of 200-numbered courses in chemistry, including Chemistry 220 and excluding Chemistry 290, 296, 298, and 299.
  - (2) Nine units of graduate level or approved upper division courses in chemistry excluding Chemistry 290, 296, and 299.
  - (3) Nine units of electives approved by the student's departmental committee.
- (c) Complete the requirement for Chemistry 296, Directed Field Experience, as described in Part Two of this bulletin in the section on the Master of Science Degree.

#### SPECIFIC REQUIREMENTS FOR THE GENERAL SECONDARY CREDENTIAL

Applicants for the general secondary credential must complete four units selected from 200-numbered courses in chemistry or physics, as required in the teaching major in physical science and general science. Refer to Part Two of this bulletin on Advanced Credentials for further information on the general secondary credential.

#### ADVANCEMENT TO CANDIDACY

Master of Arts and Master of Science: In addition to meeting the requirements for advancement to candidacy as described in Part Two of this bulletin under Master of Arts or Master of Science Degree—General Requirements, students must pass a qualifying examination in chemistry.

Master of Arts (Teaching Service): All students must satisfy the general requirements for advancement to candidacy as described in Part Two of this bulletin under Master of Arts Degree—General Requirements.

#### GRADUATE TEACHING ASSISTANTSHIPS AND SCHOLARSHIPS

Graduate teaching assistantships in chemistry are available to a limited number of qualified students. Application blanks and additional information may be secured from the chairman of the department. Refer to Part One of this bulletin under Graduate Teaching Assistantships for information on stipends and required qualifications. Refer to Part One of this bulletin, section on Graduate Scholarships and Awards, for information on scholarships.

#### FACULTY

Department Chairman: Harold Walba

Graduate Advisers:

Master of Arts (Teaching): Harold Walba

Master of Arts: Harold Walba

Master of Science: Harold Walba

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.

Associate Professors: V. J. Landis, Ph.D.; J. G. Malik, Ph.D.; Arne Wick, Ph.D.

Assistant Professors: N. J. Harrington, M.A.; L. H. Hellberg, Ph.D.; Reilly Jensen, Ph.D.; J. C. Sheppard, Ph.D.; C. J. Stewart, Ph.D.; E. P. Wadsworth, Jr., Ph.D.

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

##### UPPER DIVISION COURSES

- |                                               |                                                     |
|-----------------------------------------------|-----------------------------------------------------|
| 115A-115B. General Biochemistry (3-3)         | 155. Instrumental Methods of Analysis (3)           |
| 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 (3)                             |
| 154. Organic Qualitative Analysis (3)         |                                                     |

#### GRADUATE COURSES

##### 200. Seminar (2 or 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 101B. 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 127. Modern inorganic theory applied to electronic configurations, periodic relationships and uses of selected less familiar elements.

##### 250. Advanced Analytical Chemistry (2)

Prerequisites: Chemistry 105 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.

##### 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.

##### 296. Directed Field Experience (1-6)

Meets the requirement of directed field experience for candidates for the master of science degree, but is not limited to candidates for the degree. Required in addition to the 30-unit requirement for the degree, when previous experience is lacking or not acceptable.

##### 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 offers graduate work leading to the master of arts degree with a major in economics. 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. Graduate work for the teaching minor of the general secondary credential is also offered. 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 regular graduate standing as described in this bulletin under Admission to the Graduate Division. In addition, students seeking the master of arts degree with a major in economics must have completed at least 18 units of upper division courses in economics including Economics 100A-100B, Intermediate Economic Theory, Economics 140, Statistical Methods, or their equivalents, and six units of upper division courses in economics or related fields as approved by the graduate adviser.

A student with a bachelor's degree in a field other than economics who has completed the core courses, Economics 100A-100B, and Economics 140, 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 regular graduate standing.

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

In addition to meeting the requirements for regular graduate standing and the general requirements for the master of arts degree as described in Part Two of this bulletin, the student must include in his graduate program a minimum of 24 units in economics from courses listed below as acceptable on master's degree programs of which at least 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, with the approval of the graduate adviser, 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

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

### FACULTY

Department Chairman: Adam Gifford

Graduate Adviser: Adam Gifford

Professors: G. K. Anderson, Ph.D.; R. E. Cameron, Ph.D.; J. O. McClintic, Ph.D.; F. L. Ryan, Ph.D.

Associate Professors: R. E. Barckley, Ph.D.; Marjorie S. Brookshire, Ph.D.; Adam Gifford, Ph.D.

Assistant Professors: George Babilot, Ph.D.; L. E. Chadwick, B.S.; D. A. Flagg, Ph.D.; E. J. Neuner, Jr., Ph.D.

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

### UPPER DIVISION COURSES

- |                                               |                                                    |
|-----------------------------------------------|----------------------------------------------------|
| 102. Comparative Economic Systems (3)         | 172. Public Utilities (3)                          |
| 107. Introduction to Econometrics (3)         | 173. Economic Resources and Growth (3)             |
| 127. Agricultural Economics (3)               | 174. Economic Concentration and Monopoly Power (3) |
| 131. Public Finance (3)                       | 185. Social Insurance (3)                          |
| 133. Corporation Finance (3)                  | 190. International Economics—Principles (3)        |
| 135. Money and Banking (3)                    | 195. International Economics—Problems (3)          |
| 138. Urban Land Economics (3)                 | 196. Economics of Underdeveloped Areas (3)         |
| 139. Real Estate Principles and Practices (3) | 198. Investigation and Report (3)                  |
| 142. Business Cycles (3)                      | 199. Special Study (1-6)                           |
| 150. Labor Problems (3)                       |                                                    |
| 151. Labor Legislation (3)                    |                                                    |
| 152. Collective Bargaining (3)                |                                                    |
| 171. Transportation Economics (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.
207. 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, the marginal propensity to consume, and forecasting national income.
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.
250. Seminar in Labor Economics (3)  
Prerequisites: Economics 150 and Economics 151.  
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 and 195.  
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 Department of Education offers graduate work leading to the master of arts degree in education with concentrations in the following: audiovisual education, elementary curriculum and instruction, secondary curriculum and instruction, elementary administration, secondary administration, school 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. (For information on these credentials, refer to Part Two of the bulletin, section on Graduate Credentials.)

## ADMISSION TO THE GRADUATE DIVISION

All students must satisfy the general requirements for admission to regular graduate standing, as described in Part One 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 regular day school service California credential, other than an emergency or provisional credential, before he will be recommended by the department for regular graduate standing. Students who are eligible to receive the master of arts degree without teaching credentials, will be given special consideration. (For information on eligibility of students to take the master's degree, refer to Part Two of the bulletin, section on Master of Arts Degree.)

## ADVANCEMENT TO CANDIDACY

Students desiring master's degree concentrations in audiovisual education, elementary curriculum and instruction, and secondary curriculum and instruction may be advanced to candidacy upon completion of the general requirements as described in Part Two of this bulletin, section on Master of Arts Degree, and upon satisfactory completion of the departmental qualifying examination. Students desiring concentrations in administration (elementary or secondary), supervision, pupil personnel services, and special education must, in addition to the above, meet specific requirements for admission to the appropriate advanced credential program. (For further information, refer to Part Two of this bulletin, section on Graduate Credentials.)

## SPECIFIC DEPARTMENTAL REQUIREMENTS FOR THE MASTER OF ARTS DEGREE

In addition to meeting the requirements for regular graduate standing and the credential requirements as applicable, the student must satisfy the general requirements for the master of arts degree, described in Part Two of the bulletin, section on Master of Arts Degree. 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 is required of all candidates for the master's degree in education. For students who were not required to pass the qualifying examination mentioned above under advancement to candidacy, the examination will be in two parts. For students who have passed the qualifying examination, the comprehensive will cover the field of the concentration.

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.



### Selection of Plan A or Plan B

After a candidate has been assigned to an adviser, he must make an appointment with that adviser to plan his program of studies for the master of arts degree. All 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 countersigned by such faculty sponsor and be submitted to the Office of 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 to have two experiences of a writing and research nature, thus providing a more extensive background rather than the detailed and intensive concentration resulting from the thesis. 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 approximately equivalent to the thesis with respect to the difficulty and quantity of work required.

### Course Requirements

(For course requirements in administration, supervision, and pupil personnel services, see the section of this bulletin on graduate credentials.)

#### 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. Up to 12 units of electives afford the student an opportunity to select a program to meet his needs from courses in the various elementary subject fields, child study, special 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. Prerequisites: (a) a valid four-year elementary credential or equivalent course work; (b) 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 (12 units) to include: Education 206, Philosophy of Education, or 207, Educational Sociology; Education 220, Advanced Educational Psychology; Education 240, Elementary Curriculum; and three units from Problems in Teaching, Education 241, 242, 243, 244, or 248.
4. Electives (up to 12 units) selected with approval of the adviser.
5. Additional required courses (3-6 units): Education 295A-295B, Seminar, or Education 299, Thesis.

#### Secondary Curriculum and Instruction

The master of arts degree in secondary curriculum and instruction is designed to assist the applicant in improving his facility as a classroom teacher. The program lends itself readily to a combined general secondary credential and the master of arts degree, with up to 15 units common to the two programs. 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), selected with approval of the adviser, from Education 205, History of Education; Education 206, Philosophy of Education; Education 207, Educational Sociology; Education 220, Advanced Educational Psychology; Education 221, Seminar in Educational Measurement; Education 230, Guidance Problems in Secondary Education; Education 250, Curricular Problems in Secondary Education; Education 254, Advanced Problems in Secondary School Instruction; and Education 256, Recent Trends in Secondary School Curriculum.
3. Electives (6-12 units) selected from subject matter fields or from professional education courses.
4. Additional required courses (3-6 units): Education 295A-295B, Seminar, or Education 299, Thesis.

### 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.

### TEACHING EXPERIENCE

Students majoring in pupil personnel services, or in any area of administration, must verify a minimum of two years of successful teaching experience. Students majoring in supervision must verify a minimum of five years of successful public school service.

### ADVANCED CREDENTIAL REQUIREMENTS

Students majoring in pupil personnel services, in special education, in supervision, or in either administrative area, must complete the requirements for the appropriate credential either prior to or concurrently with completion of other requirements for the master's degree. (Refer to Part Two of the bulletin, section on Advanced Credentials for additional information.) In these majors, it is likely that total requirements will exceed the minimum of 30 units, since programs must include requirements for both the advanced credential and the master's degree.

### SCHOLARSHIPS

The following scholarships are available to graduate students in education.

**AMERICAN ASSOCIATION OF UNIVERSITY WOMEN.** Awarded each June to a graduating woman senior who will begin work in an accredited college or university toward a higher degree or credential.

**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

Department Chairman: G. A. Koester

Coordinator of Elementary Education: F. A. Ballantine

Coordinator of Secondary Education: E. G. Fulkerson

Chairman of Administrative Studies Committee: R. A. Houseman

Chairman of Guidance Studies Committee: D. D. Malcolm

Chairman of Special Education Studies Committee: Edna Koehn

Coordinator of Graduate Programs: Edna Koehn

Graduate Advisers:

Elementary Curriculum and Instruction: P. C. Gega

Secondary Curriculum and Instruction: J. A. Apple, Charles Falk

Elementary Administration and Supervision: Charles Lienert

Secondary Administration and Supervision: M. H. Platz

Elementary Pupil Personnel Services: L. E. Strom

Secondary Pupil Personnel Services: R. L. Trimmer

Special Education: Edna Koehn

Audiovisual Education: J. S. Kinder



Professors: M. D. Alcorn, Ed.D.; J. A. Apple, Ed.D.; F. A. Ballantine, Ph.D.; Marguerite A. Brydegaard, Ed.D.; T. R. Carlson, Ph.D.; Kurt Friedrich, Ed.D.; C. M. Gjerde, Ph.D.; D. W. Grisier, Ed.D.; R. A. Houseman, Ed.D.; J. J. Hunter, Jr., Ph.D.; J. S. Kinder, Ph.D.; G. A. Koester, Ph.D.; J. M. Linley, Ph.D.; Richard Madden, Ph.D.; D. D. Malcolm, Ph.D.; M. H. Schrupp, Ph.D.; J. R. Schunert, Ph.D.; J. P. Stone, Ph.D.; M. F. Stough, Ph.D.; A. E. White, Ed.D.

Associate Professors: E. L. Anderson, Ed.D.; P. S. Anderson, Ph.D.; Guinivere E. Bacon, M.A.; D. L. Baker, Ed.D.; Lois B. Campbell, M.A.; C. E. Crum, Ed.D.; J. S. Fisher, Ph.D.; E. G. Fulkerson, Ed.D.; G. F. Gates, Ed.D.; P. C. Gega, Ed.D.; Bjorn Karlsen, Ph.D.; Elizabeth J. Klemmer, M.A.; Charles Lienert, Ed.D.; R. R. Nardelli, Ph.D.; M. H. Platz, Ed.D.; Helen L. Prouty, Ph.D.; H. Roemmich, Ph.D.; Marguerite R. Strand, Ph.D.; R. L. Trimmer, Ph.D.

Assistant Professors: Aileen J. Birch, M.A.; R. M. Briggs, Ph.D.; Paul Bruce, Ph.D.; E. A. Du Bois, Jr., Ed.D.; C. J. Falk, S.T.D.; C. E. Fishburn, Ed.D.; Owen Geer, Ed.D.; P. J. Groff, Ed.D.; D. F. Harder, Ed.D.; W. O. Hill, Ed.D.; H. Ikeda, M.A.; J. E. Inskeep, Ph.D.; Doris Johnson, M.Ed.; Edna Koehn, Ph.D.; Margaret La Pray, M.A.; Bette McVay, M.A.; Gerald Person, Ph.D.; M. R. Pettes, Ed.D.; Jane Plazak, M.A.; Eunice Rixman, M.M.; J. A. Rodney, M.A.; M. K. Rowland, Ph.D.; J. L. Schmidt, Ph.D.; Arthur Singer, Jr., Ph.D.; H. R. Smith, Ph.D.; L. E. Strom, Ed.D.; Marilyn Suydam, M.S.; M. Agnes Walsh, M.A.; W. H. Wetherill, Ph.D.; J. H. Wilding, Ed.D.

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

### UPPER DIVISION COURSES IN EDUCATION

- |                                                             |                                                                                                  |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| 114. Interpretation of Early Childhood Behavior (3)         | 151. Measurement and Evaluation in Elementary Education (3)                                      |
| 115. Guidance in Elementary Education (3)                   | 170. Exceptional Children (3)                                                                    |
| 118. Supervision of Child Welfare and Attendance (3)        | 171. Curriculum and Methods for Teaching Mentally Retarded Children in the Elementary School (3) |
| 122. Reading in Secondary Education (3)                     | 172. Workshop for Teaching the Mentally Retarded (3-6)                                           |
| 125. Organization and Administration of Music Education (2) | 173. Vision Testing and Hygiene (2)                                                              |
| 126. Workshop in Secondary Education (3 or 6)               | 174. Principles and Methods of Speech Correction (3)                                             |
| 130-131. Elementary Education Practicums (Limit of 6 units) | 175. Curriculum and Methods for Teaching Mentally Retarded Children in the Secondary School (3)  |
| 133. Children's Literature in Elementary Education (3)      | 176. Stuttering and Neurological Disorders (3)                                                   |
| 135. Workshop in Elementary Education (3 or 6)              | 177. Aural Rehabilitation (3)                                                                    |
| 137. Reading Difficulties (3)                               | 178. The Teaching of Lip Reading (2)                                                             |
| 141. Creating Audio-Visual Materials for Classroom Use (3)  | 190. Conference on the Teaching of Mathematics (1)                                               |
| 143S. Workshop in Educational Television (6)                | 191. Guidance Conference (1)                                                                     |
| 150. Psychological Testing (3)                              | 192. Audiovisual Conference (1)                                                                  |
|                                                             | 199. Special Study (1-6)                                                                         |

### GRADUATE COURSES IN EDUCATION

For requirements for admission to graduate courses, refer to the section of this catalog on Admission to the Graduate Division. 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.

#### 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 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 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)

Prerequisites: Education 101 and teaching experience.

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)

Prerequisites: Education 111 and teaching experience.

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 112 and 113, or Education 110.

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)

Prerequisite: Education 110.

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 152 or 151.

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

**241. Problems in the Teaching of Arithmetic (3)**

Prerequisite: Education 130A.

A study of research and practice in the methods of teaching and in the curriculum of elementary and junior high school arithmetic.

**242. Problems in the Teaching of Reading (3)**

Prerequisites: Education 130E and 137

Advanced study of trends in reading instructions. 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)**

Prerequisite: Consent of instructor.

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)**

Prerequisite: Consent of instructor.

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.

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

**246. Advanced Diagnosis in Reading (3)**

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

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

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

Prerequisites: A teaching credential and Education 151 or 152.

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

**248. Problems in the Teaching of Science in Elementary Education (3)**

Prerequisites: Nine units of natural science and Education 131B, or consent of instructor.

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)**

Prerequisites: 12 units in secondary education and consent of the instructor.

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.

**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.

**ADVANCEMENT TO CANDIDACY**

All students must meet the stated requirements for advancement to candidacy which are described in Part Two of this bulletin under Master of Science Degree.

**GRADUATE TEACHING ASSISTANTS**

Graduate teaching assistants in engineering are available to a limited number of qualified students. Application blanks and additional information may be secured from the chairman of the division. Refer to Part One of this bulletin under Graduate Teaching Assistants for information on eligibility and required qualifications.

**FACULTY**

Division Chairman: Martin F. Capp  
Associate Chairmen: W. H. Shoup, Aerospace Engineering and Engineering Mechanics; S. H. Stone, Civil Engineering; C. R. Lodge, Electrical Engineering; C. H. Morgan, Mechanical Engineering; C. R. Walling, Coordinator of Work-Study Programs.  
Graduate Advisers: Charles Morgan, Mechanical Engineering.  
Professors: M. F. Capp, M.S.; C. L. Echel, M.S.; C. Morgan, M.S.; W. H. Shoup, Ph.D.; C. R. Walling, Ph.D.



## ENGINEERING

### GENERAL INFORMATION

The Division of Engineering offers graduate work leading to the master of science degree. This program 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 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 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 regular graduate standing as described in Part One 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 DIVISIONAL REQUIREMENTS

In addition to meeting the requirements for regular graduate standing as stated above, the student must satisfy the general requirements for the master of science degree as described in Part Two of this bulletin on Master of Science Degree. 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 comprehensive 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 Two of this bulletin under Master of Science Degree.

### GRADUATE TEACHING ASSISTANTSHIPS

Graduate teaching assistantships in engineering are available to a limited number of qualified students. Application blanks and additional information may be secured from the chairman of the division. Refer to Part One of this bulletin under Graduate Teaching Assistantships for information on stipends and required qualifications.

### FACULTY

Division Chairman: Martin P. Capp

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; C. R. Walling, Coordinator of Work-Study Programs.

Graduate Adviser: Charles Morgan, Mechanical Engineering.

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

Associate Professors: E. G. Bauer, M.S.; C. R. Lodge, Ph.D.; M. V. R. Rao, Ph.D.; H. L. Stone, B.S.; S. H. Stone, M.S.

Assistant Professors: R. L. Bedore, M.S.M.E.; G. A. Burns, M.S.; S. Dharmarajan, Ph.D.; R. A. Fitz, Ph.D.; P. E. Johnson, M.S.; J. R. Lyon, M.S.; R. L. Mastin, A.E.; F. T. Quiett, M.S.; D. L. Skaar, B.E.E.

Lecturers: W. S. Bradfield, Ph.D.; B. M. Leadon, Ph.D.; J. J. Shepard, M.S.

## MECHANICAL ENGINEERING

For the Master of Science degree in Mechanical Engineering, in addition to fulfilling the requirements of admission and those of the division 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 Mechanical Engineering 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 Mechanical Engineering 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 Divisions of Engineering and 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, Vibration Analysis (3)

M.E. 221, Stress Analysis (3)

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

M.E. 223, Theory of Elasticity and Plasticity (3)

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

Any of the following engineering courses are acceptable for graduate credit for a Master of Science Degree in Mechanical Engineering:

#### UPPER DIVISION COURSES

120A. Structural Analysis I (3)

120B. Structural Analysis II (3)

124. Advanced Theory of Structures (3)

130. Network Analysis (3)

131. Electromechanical Control Devices (3)

134. Engineering Electronics (3)

135. Advanced Electrical Machinery (3)

142. Fuels and Combustion (3)

143. Gas Dynamics (3)

147. Introduction to Mechanical Vibrations (3)

150A. Subsonic Aerodynamics (3)

150B. Supersonic Aerodynamics (3)

151A. Aircraft Structures I (3)

151B. Aircraft Structures II (3)

152. Aircraft Propulsion Systems (3)

153. Aerospace Flight Mechanics (3)

181. Hydrodynamics (3)

186. Advanced Resistance of Materials (3)

187. Methods of Analysis (3)

189. Linear Feedback Control Systems (3)



## 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

#### 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 a prerequisite for 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 a prerequisite for 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 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 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 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.

### 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 registration in Mathematics 118B.

An advanced analysis of 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 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 offers graduate work 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. The general secondary credential with teaching majors and minors in English is also offered.

### ADMISSION TO THE GRADUATE DIVISION

All students must satisfy the general requirements for admission to the Graduate Division with regular graduate standing, as described in Part One 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 regular graduate standing can be recommended. If, in the opinion of the 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 program. The English Department recommends that students study extensively some foreign language.

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

In addition to meeting the requirements for regular graduate standing and the general requirements for the master of arts degree as described in Part Two 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 15 units must be in 200-numbered courses. English 290, English 299, English 192, and English 193 (or a reading knowledge of Latin) are required courses. The student must demonstrate a reading knowledge of French or German.

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

In addition to meeting the requirements for regular graduate standing and the general requirements for the master of arts degree as described in Part Two 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 10 units must be in 200-numbered courses. English 290 and English 299 are required courses. (The student must also satisfy the requirements for a California school service credential.)

### SPECIFIC REQUIREMENTS FOR THE GENERAL SECONDARY CREDENTIAL

In the graduate program for the general secondary credential, the student must include two 200-numbered courses, with other courses to make a minimum of six units of approved upper division and graduate work. In exceptional cases, two units of English 298, or three units of English 191 or 192, may be substituted for two units of English 200 with the consent of the departmental representative.

### ADVANCEMENT TO CANDIDACY

Master of Arts: In addition to meeting the requirements for advancement to candidacy described in Part Two of this bulletin under the Master of Arts Degree—General Requirements, students must pass a qualifying examination in English and American Literature.

Master of Arts (Teaching Service): In addition to meeting the general requirements for advancement to candidacy described in Part Two of this bulletin under the Master of Arts Degree—General Requirements, students must pass a qualifying examination in English and American Literature.

## GRADUATE TEACHING ASSISTANTSHIPS AND SCHOLARSHIPS

Graduate teaching assistantships in English are available to a limited number of qualified students. Application blanks and additional information may be secured from the chairman of the department. Refer to Part One of this bulletin under Graduate Teaching Assistantships for information on stipends and required qualifications.

The Dorothy Cranston Scott 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

Department Chairman: E. L. Marchand

Graduate Adviser: J. N. Tidwell

Credential Advisers: C. B. Kennedy; W. A. Perkins

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.; J. S. Keeney, Ph.D.; C. B. Kennedy, Ph.D.; E. L. Marchand, Ph.D.; G. L. Phillips, Ph.D.; C. E. Shouse, Ph.D.; J. R. Theobald, Ph.D.; J. N. Tidwell, Ph.D.; Mabel Trail, Ph.D.

Associate Professors: J. P. Monteverde, Ph.D.; W. A. Perkins, Ph.D.; G. W. Sanderlin, Ph.D.; Lowell Tozer, Ph.D.

Assistant Professors: J. R. Baker, Ph.D.; L. H. Frey, M.A.; G. A. Sandstrom, Ph.D.; Dorothy C. Wanlass, Ph.D.; Kingsley Widmer, 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)                             | 193. Old English (3)                              |
| 126B. Late Nineteenth Century British Prose (3)                    | 195A. History of Literary Criticism (3)           |
| 129A. Early Modern British Literature (3)                          | 195B. Theory and Practice of Modern Criticism (3) |
| 129B. Contemporary British Literature (3)                          | 196. General Linguistics (3)                      |
|                                                                    | 197. English Linguistics (3)                      |
|                                                                    | 198. Comprehensive Reading and Survey (3)         |
|                                                                    | 199. Special Study (1-6)                          |

### GRADUATE COURSES

260. **Problems of Literary Creation** (2-6)  
Prerequisites: Consent of instructor and departmental adviser.  
Criticism and coaching in the larger forms.
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.



291. Seminar: A Major Author (3)

Prerequisite: Twelve units of upper division work in English.

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.

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.

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.

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)

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.

## FRENCH

### GENERAL INFORMATION

The Department of Foreign Languages offers graduate work 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. The general secondary and junior college credentials with teaching 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 regular graduate standing, as described in Part One of this bulletin under Admission to the Graduate Division. An undergraduate major in French including 24 upper division units must have been completed, at least three units of which must have been in a comprehensive reading and survey course. A proficiency examination in French will be given by the Department of Foreign Languages to applicants for the master's degree for teaching service who have already obtained a general secondary credential.

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

In addition to meeting the requirements for regular graduate standing and the general requirements for the master of arts degree as described in Part Two 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 299.

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

In addition to meeting the requirements for regular graduate standing and the general requirements for the master of arts degree as described in Part Two 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 298, and six units selected from French 201, 214, and 215. The comprehensive examination, which is required in lieu of a thesis of candidates for the master of arts 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.

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

### SPECIFIC REQUIREMENTS FOR CREDENTIALS

In the graduate program for the general secondary credential, the student must include French 220 and three units selected from French 201, 214, and 215.

For the junior college credential, the student must complete the master of arts program with a major in French, Educ. 201, 223, 251, and four units of directed teaching in a junior college. Junior college credential candidates are expected to substitute French 298, Special Study, and a comprehensive examination for French 299, Thesis.

Before taking a directed teaching assignment in French, the candidate for a teaching credential must pass an examination on French civilization and proficiency in the French language administered by the Department of Foreign Languages.

### ADVANCEMENT TO CANDIDACY

All students must satisfy the general requirements for advancement to candidacy as described in Part Two of this bulletin under Master of Arts Degree.



## FACULTY

Chairman, Department of Foreign Languages: Elizabeth M. Brown  
 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 Professor: John Dandliker, M.A.

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

### UPPER DIVISION COURSES

- |                                                |                                                          |
|------------------------------------------------|----------------------------------------------------------|
| 101A-101B. Conversation and Composition (3-3)  | 111A-111B. Seventeenth Century Dramatic Literature (3-3) |
| 105A-105B. Modern French Drama (3-3)           | 140. French Civilization (2)                             |
| 107A-107B. Eighteenth Century Literature (3-3) | 141. French Civilization (2)                             |
| 110A-110B. Modern French Novel (3-3)           | 150. Advanced Phonetics and Diction (3)                  |
|                                                | 198. Comprehensive Reading and Survey Course (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 courses in 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.
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. 6 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 298 and a comprehensive examination for the thesis. In unusual cases a student may write a thesis with the permission of the department.

## GEOGRAPHY

### GENERAL INFORMATION

The Department of Geography offers graduate work leading to the master of arts degree with a major in geography. 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.

### ADMISSION TO THE GRADUATE DIVISION

All students must satisfy the general requirements for admission to the Graduate Division with regular 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.

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

In addition to meeting the requirements for regular graduate standing and the general requirements for the master of arts degree as described in Part Two 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 13 or more units must be in 200-numbered courses including Geography 210, 280, 295, and four 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 Two of this bulletin under Master of Arts Degrees.

### GRADUATE TEACHING ASSISTANTSHIPS AND SCHOLARSHIPS

Graduate teaching assistantships in geography are available to a limited number of qualified students. Application blanks and additional information may be secured from the chairman of the Department of Geography. Refer to Part One of this bulletin under Graduate Teaching Assistantships for information on stipends and required qualifications. Refer to Part One of this bulletin, section on Graduate Scholarships and Awards, for information on scholarships.

## FACULTY

Department Chairman: C. C. Yahr  
 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 Professor: C. C. Yahr, Ph.D.  
 Assistant Professors: C. H. Cruttenden, Ph.D.; D. I. Eidemiller, Ph.D.



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

### UPPER DIVISION COURSES

- |                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 100. Climatology (3)<br>101. Physiography (3)<br>110. Historical Geography (3)<br>120. California (3)<br>121. United States (3)<br>122. Canada and Alaska (3)<br>123. Middle America (3)<br>124. South America (3)<br>125. Mediterranean Area (3)<br>126. Northern Europe (3) | 127. Soviet Union (3)<br>128. Southern and Eastern Asia (3)<br>129. Oceania (3)<br>130. Central and Southern Africa (3)<br>150. World Political Geography (3)<br>155. Urban Geography (3)<br>182. Use and Interpretation of Aerial Photographs (2)<br>199. Special Study (1-6) |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 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 (2)  
 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 with new content to a maximum of four units.
250. Seminar in Systematic Geography (2)  
 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 with new content to a maximum of four units.
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.
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.

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

### GEOLOGY

#### GENERAL INFORMATION

The Department of Geology offers graduate work 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 and geophysics. In addition to these physical facilities, the interest and diverse geological environment of the San Diego area, and the mild climate which permits year-around field work, place San Diego State in a highly favorable location for graduate work in geology.

#### ADMISSION TO THE GRADUATE DIVISION

All students must satisfy the general requirements for admission to regular graduate standing as described in Part One 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.

#### SPECIFIC DEPARTMENTAL REQUIREMENTS FOR THE MASTER OF SCIENCE DEGREE

In addition to meeting the requirements for regular graduate standing, the student must satisfy the general requirements for the master of science degree as described in Part Two 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 Two of this bulletin under Master of Science degree—General Requirements, students must pass the Graduate Record Examination in geology (Advanced Test) not later than the first semester in residence.

#### GRADUATE TEACHING ASSISTANTSHIPS AND SCHOLARSHIPS

A small number of graduate teaching assistantships in geology may occasionally be available to qualified students. Application blanks and additional information may be secured from the chairman of the department. Refer to Part One of this bulletin under Graduate Teaching Assistantships for information on stipends and required qualifications.

#### FACULTY

Department Chairman: Baylor Brooks  
 Graduate Adviser: Ellis Roberts  
 Professor: Ellis Roberts, Ph.D.  
 Associate Professors: Baylor Brooks, A.B.; Blakemore Thomas, Ph.D.  
 Assistant Professors: E. C. Allison, M.A.; A. B. Ford, Ph.D.; R. G. Gastil, Ph.D.  
 Lecturer: E. D. Milow, A.B.



## 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 department 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 offers graduate work leading to the teaching major or minor in German for the general secondary credential.

### SPECIFIC DEPARTMENTAL REQUIREMENTS FOR THE GENERAL SECONDARY CREDENTIAL

Applicants for the general secondary credential with a major in German must complete German 201 and three units selected from German 204, 205, and 206.

Before taking a directed teaching assignment in German, the candidate for a teaching credential must pass an examination on German civilization and proficiency in the German language administered by the Department of Foreign Languages.

### FACULTY

Chairman, Department of Foreign Languages: Elizabeth M. Brown, Ph.D.  
Credential Adviser: L. N. Messier, Ph.D.  
Professor: E. M. Wolf, Ph.D.  
Associate Professor: Gerard Piffard, Ph.D.  
Assistant Professors: John Dandliker, M.A.; Vytas Dukas, M.A.; Richard Lawson, 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. **Seminar in 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.
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 work leading to the master of arts degree for teaching service with a concentration in health education. The general secondary credential with a teaching major or minor in health education is also available. (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 regular graduate standing, as described in Part One of this bulletin under Admission to the Graduate Division.

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

In addition to meeting the requirements for regular 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 Two of this bulletin, section on Master of Arts Degree. 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 10 units must be in 200-numbered courses. Education 290A-290B and Health Education 299 are required courses.

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

### SPECIFIC REQUIREMENTS FOR THE GENERAL SECONDARY CREDENTIAL

Applicants for the general secondary credential must complete a minimum of four units selected from Health Education 200, 202, and 205.

### ADVANCEMENT TO CANDIDACY

All students must satisfy the general requirements for advancement to candidacy, which are described in Part Two of this bulletin under Master of Arts Degree.

### GRADUATE TEACHING ASSISTANTSHIPS

Graduate teaching assistantships in health education are available to a limited number of qualified students. Application blanks and additional information may be secured from the chairman of the department. Refer to Part One of this bulletin under Graduate Teaching Assistantships for information on stipends and required qualifications.

### FACULTY

Division Chairman: W. L. Terry  
Department Chairman: W. H. Lauritsen  
Credential Adviser: Angela M. Kitzinger; W. H. Lauritsen  
Graduate Adviser: F. L. Scott  
Professors: Angela M. Kitzinger, Ph.D.; W. H. Lauritsen, Ph.D.  
Assistant Professors: R. M. Grawunder, Ed.D.; L. A. Harper, Ed.D.; E. Mileff, Ed.D.

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

### UPPER DIVISION COURSES

- |                                                      |                                                       |
|------------------------------------------------------|-------------------------------------------------------|
| 145. Safety Education and Accident Prevention (3)    | 175. Health in Later Maturity (3)                     |
| 151. Health Education for Secondary Teachers (2)     | 181. Health and Medical Care (3)                      |
| 152. School Health Instruction Programs (3)          | 185. Critical Analysis of Professional Literature (3) |
| 153. Administration of the School Health Program (3) | 190. Introduction to Public Health (3)                |
| 154. Workshop in Health Education (2)                | 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 offers graduate work 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. (Students may also take working leading to the master of arts degree for teaching service with a concentration in social science. Refer to the section of this bulletin on social science.)

### ADMISSION TO THE GRADUATE DIVISION

All students must satisfy the general requirements for admission to the Graduate Division with regular graduate standing, as described in Part One 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 DEPARTMENTAL REQUIREMENTS FOR THE MASTER OF ARTS DEGREE

In addition to meeting the requirements for regular graduate standing and the general requirements for the master of arts degree as described in Part Two 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 DEPARTMENTAL REQUIREMENTS FOR THE MASTER OF ARTS DEGREE FOR TEACHING SERVICE

In addition to meeting the requirements for regular graduate standing and the general requirements for the master of arts degree as described in Part Two 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 10 units must be in 200-numbered courses. A thesis is required. (Students must also satisfy the requirements for a California school service credential.)

### SPECIFIC REQUIREMENTS FOR THE GENERAL SECONDARY CREDENTIAL

Students who wish to earn a general secondary credential with a concentration in history must secure the credential under a social science major. A history minor is available to students with a major other than social science. History 201 and a 6-unit seminar which are required for the master's degree may be counted as electives in the general secondary credential program.

### ADVANCEMENT TO CANDIDACY

In addition to meeting the general requirements for advancement to candidacy as described in Part Two of this bulletin under Master of Arts Degree, 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 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

Department Chairman: L. U. Ridout

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. Rohfleisch, 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.; W. R. Wineman, Ph.D.

Assistant Professors: N. F. Norman, Ph.D.; Martin Ridge, 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. Expansion and Conflict: The United States from Jackson to the Age of Industry (3-3) |
| 141. Europe in the Seventeenth and Eighteenth Centuries (3)       | 174. Emergence of the United States as a World Power (3)                                       |
| 142. The French Revolution and Napoleonic Era (3)                 | 175A-175B. The United States in the Twentieth Century (3-3)                                    |
| 143A-143B. Europe in the Nineteenth Century (3-3)                 | 176A-176B. American Foreign Policy (3-3)                                                       |
| 144A-144B. Europe in the Twentieth Century (3-3)                  | 179A-179B. Intellectual History of the American People (3-3)                                   |
| 147A-147B. Expansion of Russia (3-3)                              | 181A-181B. The Westward Movement (3-3)                                                         |
| 151A-151B. England (3-3)                                          | 189. California (3)                                                                            |
| 156A-156B. British and European Imperialism (3-3)                 | 190A-190B. The Pacific Ocean Area (3-3)                                                        |
| 158A-158B. Africa and the Middle East (3-3)                       | 191A-191B. The Far East (3-3)                                                                  |
| 161. Mexico and Caribbean Countries (3)                           | 193. China (3)                                                                                 |
| 162. South American Since Independence (3)                        | 194. Japan (3)                                                                                 |
| 165A-165B. Social and Intellectual History of Latin America (3-3) |                                                                                                |

#### GRADUATE COURSES

201. **Historiography and Historical Method** (3)  
Required of all applicants for advanced degrees in history. Open to social science majors.
- 251A-B. **Seminar in English History** (3-3)  
Prerequisite: Permission of instructor. History 251A is a prerequisite for 251B. Directed research in selected aspects of English history.
- 270A-B. **Seminar in American History** (3-3)  
Prerequisite: Permission of instructor. History 270A is a prerequisite for 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 a prerequisite for 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 a prerequisite for 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.

## HOME ECONOMICS

### GENERAL INFORMATION

The Department of Home Economics offers graduate work for the general secondary teaching credential with a teaching major or minor in home economics.

A new home economics building with specialized equipment and a home management residence have greatly increased the facilities available for graduate study.

### SPECIFIC DEPARTMENTAL REQUIREMENTS FOR THE GENERAL SECONDARY CREDENTIAL

Applicants for the general secondary credential with a teaching major in home economics must complete four units of Home Economics 200 or 298.

### FACULTY

Department Chairman: Helen L. Dorris

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 (3)

Prerequisite: Home economics major or equivalent.

Seminars are offered in each of the following fields of home economics. None of the fields may be repeated for credit.

- A. Food and Nutrition
- B. Home Management and Family Economics
- C. Textiles and Clothing
- D. Home Economics Education and Organization
- E. Child Care and Development
- F. Marriage and Family Relationships

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 offers graduate work leading to the master of arts degree for teaching service with a concentration in industrial arts, and the general secondary credential with a teaching major or minor in industrial arts. The Department of Industrial Arts makes it possible for students to gain advanced experiences in one of the most modern shop buildings in the West. Twenty thousand square feet of floor space with new equipment are devoted to work in woods, metals, transportation (auto mechanics), graphic arts, electricity-radio, photography, industrial drawing, comprehensive general shop and handicrafts. An additional building which will more than double existing facilities is under construction. Graduate students have the opportunity to participate in the planning and organization of this expanding program.

### ADMISSION TO THE GRADUATE DIVISION

All students must satisfy the general requirements for admission to the Graduate Division with regular graduate standing, as described in Part One of this bulletin under Admission to the Graduate Division.

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

In addition to meeting the requirements for regular graduate standing and the credential requirements as applicable, the student must satisfy the general requirements for the master of arts degree, described in Part Two of this bulletin, section on Master of Arts Degree. 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 10 must be in 200-numbered courses. Education 290A-290B and Industrial Arts 299 are required courses.

### SPECIFIC REQUIREMENTS FOR THE GENERAL SECONDARY CREDENTIAL

Applicants for the general secondary credential with a major in industrial arts must take six units of Industrial Arts 200, Seminar.

### ADVANCEMENT TO CANDIDACY

All students must meet the general requirements for advancement to candidacy, as described in Part Two of this bulletin under Master of Arts Degree.

### GRADUATE TEACHING ASSISTANTSHIPS

Graduate teaching assistantships in industrial arts are available to a limited number of qualified students. Application blanks and additional information may be secured from the chairman of the department. Refer to Part One of this bulletin under Graduate Teaching Assistantships for information on stipends and required qualifications.

### FACULTY

Department Chairman: Kenneth Phillips  
Graduate Adviser: Kenneth Phillips  
Credential Adviser: Kenneth Phillips  
Professor: Kenneth Phillips, Ph.D.  
Associate Professors: W. C. Anderson, Ph.D.; F. J. Irgang, Ph.D.; L. W. Luce, Ed.D.  
Assistant Professors: W. B. Ford, B.E.; W. L. McLoney, M.A.; James McMullen, Ed.D.; R. D. O'Dell, M.A.; D. W. Thiel, Ph.D.

## 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.
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 offers graduate work 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. The general secondary credential with a teaching major or minor in mathematics is also available.

### ADMISSION TO THE GRADUATE DIVISION

All students must satisfy the general requirements for admission to the Graduate Division with regular graduate standing, as described in Part One of this bulletin under Admission to the Graduate Division.

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

In addition to meeting the requirements for regular graduate standing and the general requirements for the master of arts degree as described in Part Two of this bulletin, the student must complete a graduate program which includes a major consisting of at least 24 units in mathematics (excluding Mathematics 296) 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 DEPARTMENTAL REQUIREMENTS FOR THE MASTER OF ARTS DEGREE FOR TEACHING SERVICE

In addition to meeting the requirements for regular graduate standing and the general requirements for the master of arts degree as described in Part Two 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 10 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 DEPARTMENTAL REQUIREMENTS FOR THE MASTER OF SCIENCE DEGREE

In addition to meeting the requirements for regular graduate standing, the student must satisfy the general requirements for the master of science degree, described in Part Two of this bulletin, section on Master of Science Degree. The student must also meet the following departmental requirements:

- Complete 12 units of 200-numbered mathematics courses, not including Mathematics 290, 296, or 299.
- Complete nine additional units of graduate level or approved upper division mathematics courses, not including Mathematics 290, 296, 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.)
- Complete the requirement for Mathematics 296, Directed Field Experience, as described in Part Two of this bulletin in the section on the Master of Science Degree.

### SPECIFIC REQUIREMENTS FOR THE GENERAL SECONDARY CREDENTIAL

Applicants for the general secondary credential must complete four units of graduate level (200-numbered) courses in mathematics.

### ADVANCEMENT TO CANDIDACY

All students must satisfy the general requirements for advancement to candidacy, which are described in Part Two of this bulletin under Master of Arts or Master of Science Degree.

### GRADUATE TEACHING ASSISTANTSHIPS

Graduate teaching assistantships in mathematics are available to a limited number of qualified students. Application blanks and additional information may be secured from the chairman of the department. Refer to Part One of this bulletin under Graduate Teaching Assistantships for information or stipends and required qualifications.

### FACULTY

Department Chairman: N. B. Smith

Graduate Advisers: Master of Arts (major), L. J. Warren; Master of Arts (Teaching), M. F. Willerding; Master of Science, R. S. DeZur

Credential Adviser: J. E. Eagle

Professors: 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.

Associate Professors: R. D. Branstetter, Ph.D.; C. V. Holmes, Ph.D.; P. W. Shaw, Ph.D.; N. B. Smith, Ph.D.; L. J. Warren, Ph.D.; Margaret F. Willerding, Ph.D.

Assistant Professors: G. A. Becker, Ph.D.; C. B. Bell, Jr., Ph.D.; C. B. Burton, Ph.D.; Helen Clark, B.A.; E. I. Deaton, Ph.D.; W. E. DeMalignon, M.A.; R. S. DeZur, Ph.D.; A. T. Emerson, B.S.; W. P. Evertz, M.A.; L. D. Fountain, Ph.D.; H. A. Gindler, B.B.A.; R. B. Killgrove, M.A.; J. M. Moser, Ph.D.; D. Saltz, Ph.D.; R. L. Van de Wetering, Ph.D.

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

#### UPPER DIVISION COURSES

- |                                                                |                                              |
|----------------------------------------------------------------|----------------------------------------------|
| 105. College Geometry (3)                                      | 140A-140B. Mathematical Statistics (3-3)     |
| 106. Projective Geometry (3)                                   | 150A-150B. Modern Algebra (3-3)              |
| 107. Non-Euclidean Geometry (3)                                | 152. Number Theory (3)                       |
| 118A-118B. Advanced Mathematics for Engineering Students (3-3) | 155. Mathematical Logic (3)                  |
| 119. Differential Equations (3)                                | 170. Partial Differential Equations (3)      |
| 121A-121B. Advanced Calculus (3-3)                             | 196. Advanced Topics in Mathematics (2 or 3) |
| 124. Vector Analysis (3)                                       | 199. Special Study (1-6)                     |
| 134. Probability (3)                                           |                                              |
| 135. Numerical Analysis and Computation I (3)                  |                                              |
| 136. Numerical Analysis and Computation II (3)                 |                                              |

#### 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) II**

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.

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

Prerequisites: Mathematics 119 and 121B. Mathematics 224A is a prerequisite for Mathematics 224B.

Concept of analytic functions, complex integration, residues, power series, conformal mapping.

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

Prerequisites: Mathematics 119 and 121B. Mathematics 226A is a prerequisite for 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 a prerequisite for Mathematics 240B.

Theories of common distribution functions, derivation of sampling distributions with emphasis on normal populations, estimation of maximum likelihood, ratio tests of parametric hypotheses, general linear hypothesis theory.

**290. Bibliography (1)**

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

**296. Directed Field Experience (1-6)**

Meets the requirement of directed field experience for candidates for the master of science degree, but is not limited to candidates for the degree. Required in addition to the 30-unit requirement for the degree when previous experience is lacking or not acceptable.

**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 offers graduate work leading to the master of arts degree with a major in music and the master of arts degree for teaching service with a concentration in music. The general secondary credential with a teaching major or minor in music is also available.

### ADMISSION TO THE GRADUATE DIVISION

All students must satisfy the general requirements for admission to the Graduate Division with regular graduate standing, as described in Part One of this bulletin under Admission to the Graduate Division. In addition, students planning to work toward the nonteaching master of arts degree with a major in music must pass a qualifying examination.

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

In addition to meeting the requirements for regular graduate standing and the general requirements for the master of arts degree as described in Part Two 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. Music 290 and Music 299 are required. The thesis may, with approval of the Music Department faculty, consist in part of a lecture-recital. The student is required to pass a final oral examination on his thesis.

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

In addition to meeting the requirements for regular graduate standing and the general requirements for the master of arts degree as described in Part Two 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 10 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.)

### SPECIFIC REQUIREMENTS FOR THE GENERAL SECONDARY CREDENTIAL

Applicants for the general secondary credential must complete 6 units to be selected from the following courses: Music 200, 203, 207, 208, 209, 246, and 252.

### ADVANCEMENT TO CANDIDACY

All students must satisfy the general requirements for advancement to candidacy, which are described in Part Two of this bulletin under Master of Arts Degree.

### SCHOLARSHIPS

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

### FACULTY

Department Chairman: J. Dayton Smith

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.; Norman Rost, M.M.; D. F. Smith, M.M.; M. S. Snider, M.A.



Assistant Professors: M. R. Biggs, Ph.D.; J. D. Blyth, M.M.; R. C. Flye, M.A.; C. K. Genzlinger, M.A.; L. C. Hurd, M.M.; A. A. Lambert, M.F.A.; Edith Savage, Ed.D.; F. F. Stephens, 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)                                | 141. Methods in Teaching Piano (3)                                                                           |
| 103A. Symphonic Literature (2)                               | 142. Survey of Harmony and Musical Form (2)                                                                  |
| 103B. Song Literature (2)                                    | 146A. Choral Conducting (1)                                                                                  |
| 105. Modern Harmonic Practice and Four-Part Counterpoint (3) | 146B. Instrumental Conducting (1)                                                                            |
| 106. Sixteenth Century Counterpoint (3)                      | 152A-152B. History of Music (2-2)                                                                            |
| 107. Composition (3)                                         | 153. Opera Technique (2)                                                                                     |
| 109A-109B. Instrumentation and Arranging (2-2)               | 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.  
Seminar in the history of theoretical materials and procedures from the 12th Century to the present with detailed analysis of selected major works.
209. **Advanced Orchestration** (2)  
Prerequisites: Music 109B, 102A, and 103A.  
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: 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 Baroque Era
- B. Music of the 18th and 19th Centuries
- C. 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 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 regular graduate standing, as described in Part One of this bulletin under Admission to the Graduate Division. 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 DEPARTMENTAL REQUIREMENTS FOR THE MASTER OF ARTS DEGREE

In addition to meeting the requirements for regular graduate standing and the general requirements for the master of arts degree as described in Part Two 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 Two of this bulletin under Master of Arts Degree.

### FACULTY

Department Chairman: Harry Ruja  
 Graduate Adviser: Herbert L. Searles  
 Professors: Mary Mendenhall, Ph.D.; Harry Ruja, Ph.D.; Herbert L. Searles, Ph.D.; A. E. Shields, Ph.D.  
 Assistant Professors: S. M. Nelson, Ph.D.; W. S. Snyder, Ph.D.

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

#### UPPER DIVISION COURSES

- |                                  |                                  |
|----------------------------------|----------------------------------|
| 101. Contemporary Philosophy (3) | 137. Philosophy of Science (3)   |
| 121. Deductive Logic (3)         | 162. Continental Rationalism (3) |
| 122. Inductive Logic (3)         | 163. British Empiricism (3)      |
| 123. Theory of Knowledge (3)     | 164. American Philosophy (3)     |
| 125. Metaphysics (3)             | 199. Special Study (1-6)         |
| 128. Theory of Ethics (3)        |                                  |

#### 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.

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.

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.

298. Special Study (1-6)  
 Prerequisite: 12 units of upper division work in philosophy, 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 work leading to the master of arts degree for teaching service with a concentration in physical education. The general secondary credential with teaching majors and minors in physical education is also available. 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 regular graduate standing, as described in Part One of this bulletin under Admission to the Graduate Division.

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

In addition to meeting the requirements for regular graduate standing and the credential requirements as applicable, the student must satisfy the general requirements for the master of arts degree, described in Part Two of this bulletin, section on Master of Arts Degree. 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 10 units must be in 200-numbered courses. Education 290A-290B and Physical Education 299 are required courses.

### SPECIFIC REQUIREMENTS FOR THE GENERAL SECONDARY CREDENTIAL

Applicants for the general secondary credential must complete a minimum of six units of 200-numbered courses in physical education.

### ADVANCEMENT TO CANDIDACY

All students must meet the general requirements for advancement to candidacy, which are described in Part Two of this bulletin under Master of Arts Degree.

### GRADUATE TEACHING ASSISTANTSHIPS

Graduate teaching assistantships in physical education are available to a limited number of qualified students. Application blanks and additional information may be secured from the chairman of the department. Refer to Part One of this bulletin under Graduate Teaching Assistantships for information on stipends and required qualifications.

### FACULTY

Division Chairman: W. L. Terry

Department Chairmen:

Athletics: A. W. Olsen

Men's Physical Education: Paul Governali

Women's Physical Education: Margaret L. Murphy

Graduate Adviser: F. L. Scott

Credential Advisers: C. W. Benton; George Ziegenfuss

Professors: Paul Governali, Ed.D.; F. W. Kash, Ed.D.; F. L. Scott, Ph.D.; W. L. Terry, Ed.D.; George Ziegenfuss, Ed.D.

Associate Professors: C. W. Benton, Ed.D.; H. H. Broadbent, M.S.; D. D. Coryell, M.S.; Evelyn Lockman, 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: Joan Barone, M.S.; Mary F. Cave, M.A.; Elizabeth DiFederico, M.S.; Margaret L. Murphy, Ed.D.; A. W. Olsen, M.A.

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

### UPPER DIVISION COURSES

- |                                                                 |                                                                       |
|-----------------------------------------------------------------|-----------------------------------------------------------------------|
| 122. Water Safety Instruction (1)                               | 154A-154B. Methods of Teaching Modern Dance (2-2)                     |
| 141. Professional Activities: Gymnastics (men) (2)              | 155. Techniques of Individual Sports (women) (1)                      |
| 142. Professional Activities: Swimming (men and women) (1)      | 156A-156B. Methods of Teaching Team Sports (women) (2-2)              |
| 143. Professional Activities: Coaching Track (men) (1)          | 157A-157B. Choreography in Contemporary Dance (men and women) (3-3)   |
| 144. Professional Activities: Coaching Baseball (men) (1)       | 160. Teaching of Body Mechanics (women) (3)                           |
| 145. Professional Activities: Team Sports (men) (2)             | 161. Instructor's Course in First Aid (2)                             |
| 146. Professional Activities: Individual Sports (men) (2)       | 167. Applied Anatomy and Kinesiology (3)                              |
| 147. Professional Activities: Coaching Football (men) (1)       | 168. Physiology of Exercise (3)                                       |
| 148. Professional Activities: Coaching Basketball (men) (1)     | 169. Adapted Activities (3)                                           |
| 151. Folk Dancing Materials and Advanced Techniques (women) (2) | 170A-170B. Recreational Leadership (3-3)                              |
| 153A-153B. Problems in Modern Dance (men and women) (2-2)       | 190. Administration of Physical Education in the Secondary School (3) |
|                                                                 | 199. Special Study (1-6)                                              |

### 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.
203. **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 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 athletic 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 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.

## PHYSICAL SCIENCES

### GENERAL INFORMATION

The Division of the Physical Sciences offers graduate work 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 and teachers in training for the fields of the physical sciences. Students in this program must qualify for teaching credentials as indicated in Part Two of this bulletin, under the general requirements for the Master of Arts Degree.

All master's degree programs in the physical sciences are under the supervision of the Physical Sciences Teacher Education Committee.

Teaching majors and minors for the general secondary teaching credential are also offered.

### ADMISSION TO THE GRADUATE DIVISION

All applicants for the degree must satisfy the general requirements for admission to the Graduate Division with regular graduate standing as described in Part One of this bulletin. In addition, the student's undergraduate preparation should include the following courses or their equivalents:

#### Undergraduate Preparation

Courses include Astronomy 1 and 9 (4 units); Chemistry 1A-1B, 5A, 101A, and either 101B or 105 (22 units); Geology 1A or 2 and 3 (4 units); Biology 3 and 4 (6 units); Education 100 and 110 (8 units); Mathematics 50, 51, and 117 (13 units); Physics 4A, 4B, 4C, 101 (or Physical Science 130), and 122, and at least two units of 100-numbered courses in physics (19 units); six units selected from Biology 110, 111, 158, 161, Botany 112, 114, 119-S, Chemistry 115A, or Zoology 114, 117, 119-S, 121, 165; and six units of 100-numbered courses selected from the fields of astronomy, chemistry, engineering, geology, Industrial Arts 185, Physical Science 150, or physics. Students deficient in preparation will be required to make up all deficiencies in addition to the requirements for the degree.

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

In addition to meeting the requirements for admission to the Graduate Division with regular 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 110A-110B (3-3)

Mathematics 118A (3)

(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.

### SPECIFIC DIVISIONAL REQUIREMENTS FOR THE GENERAL SECONDARY CREDENTIAL

Applicants for the general secondary teaching credential must complete the major as described in the current General Catalog and Announcement of Courses, including a minimum of six units of 100- or 200-numbered courses in the physical sciences.



## ADVANCEMENT TO CANDIDACY

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

## FACULTY

Division Chairman: D. H. Robinson, Ph.D.

Graduate Adviser: L. E. Smith, Jr.

Physical Sciences Teacher Education Committee: Lionel Joseph, Ph.D., Professor of Chemistry; Paul E. Stewart, Ph.D., Professor of Physical Science; and Louis E. Smith, Jr., Ph.D., Professor of Physics.

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

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

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.

## Approved Courses in Other Departments

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 offers graduate work 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. A teaching major in physical science and general science is available for the general secondary credential. 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 regular graduate standing, as described in Part One of this bulletin under Admission to the Graduate Division and pass the qualifying examination in physics. In addition, the undergraduate preparation in physics must have substantially satisfied the undergraduate requirements for the bachelor of arts or bachelor of science 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 as an unclassified graduate, are in addition to the minimum of 30 units for the master of arts degree or the 30 to 36 units for the master of science degree.

Attention is called to the status of an unclassified graduate student as described in Part One 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 DEPARTMENTAL REQUIREMENTS FOR THE MASTER OF ARTS DEGREE

In addition to meeting the requirements for regular graduate standing and the general requirements for the master of arts degree as described in Part Two 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 and 296). At least 15 units must be in 200-numbered courses in physics (excluding Physics 298). Physics 210A-210B and 299 are required. 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 DEPARTMENTAL REQUIREMENTS FOR THE MASTER OF ARTS DEGREE FOR TEACHING SERVICE

In addition to meeting the requirements for regular graduate standing and the general requirements for the master of arts degree as described in Part Two 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 10 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 DEPARTMENTAL REQUIREMENTS FOR THE MASTER OF SCIENCE DEGREE

In addition to meeting the requirements for regular graduate standing, the student must satisfy the general requirements for the master of science degree as described in Part Two of this bulletin under Master of Science Degree. 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 meet the following departmental requirements:

- (a) Complete a program of studies prepared in consultation with his departmental advisory committee to incorporate the following: (1) 12 units of graduate level (200-numbered) courses in physics excluding Physics 296, 298, and 299; (2) nine units of graduate level or approved upper division courses in physics excluding Physics 296 and 299; (3) nine units of electives approved by his departmental committee.
- (b) Complete the requirement for Physics 296, Directed Field Experience, as described in Part Two of this bulletin in the section on the Master of Science Degree.

### SPECIFIC REQUIREMENTS FOR THE GENERAL SECONDARY CREDENTIAL

Applicants for the general secondary credential must complete four units selected from graduate level (200-numbered) courses in Physics or Chemistry as required in the teaching major in physical science and general science.

### ADVANCEMENT TO CANDIDACY

In addition to satisfying the general requirements for advancement to candidacy, which are described in Part Two of this bulletin under Master of Arts or Master of Science Degree, the student must pass a candidacy examination in physics administered by the Department of Physics.

### GRADUATE TEACHING ASSISTANTSHIPS AND SCHOLARSHIPS

Graduate teaching assistantships in physics are available to a limited number of qualified students. Application blanks and additional information may be secured from the chairman of the department. Refer to Part One of this bulletin under Graduate Teaching Assistantships for information on stipends and required qualifications.

A number of \$1,000-a-year scholarships are available to qualified graduate students. For more details consult with the Chairman of the Department of Physics.

### FACULTY

Department Chairman: J. G. Teasdale  
Graduate Advisers: Master of arts and master of science, J. G. Teasdale; master of arts (teaching), L. E. Smith, Jr.  
Credential Adviser: L. E. Smith, Jr.  
Professors: C. R. Moe, Ph.D.; L. L. Skolil, Ph.D.; L. E. Smith, Jr., Ph.D.  
Associate Professors: J. D. Garrison, Ph.D.; J. G. Teasdale, Ph.D.  
Assistant Professors: O. H. Clark, Ph.D.; R. L. Craig, M.S.; R. H. Morris, Ph.D.; Power Sogo, Ph.D.; J. A. Terhune, M.S.; G. H. Wolter, M.S.  
Lecturers: K. A. Ehricke, M.S.; E. C. Huebschman, Ph.D.

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

#### UPPER DIVISION COURSES

- |                                             |                                         |
|---------------------------------------------|-----------------------------------------|
| 104B. Electronic Circuit Theory (3)         | 151. Nuclear Physics (3)                |
| 106. Optics (3)                             | 152. Transients in Linear Systems (3)   |
| 112. Thermodynamics and Kinetic Theory (3)  | 153. Servo-System Design (3)            |
| 114. Acoustics (3)                          | 155. Analogue Computers (3)             |
| 122. Senior Physics Laboratory (2-4)        | 156. Digital Computers (3)              |
| 124. Radio Measurements (2)                 | 160. Circuit Analysis (3)               |
| 125. Microwave Measurements (2)             | 167. Transistor Circuits (3)            |
| 126. Solid State Devices Laboratory (2)     | 170. Electromagnetic Theory (3)         |
| 131. Astronautics (2)                       | 175. Advanced Mechanics (3)             |
| 148A-148B. Nuclear Physics Laboratory (3-3) | 180. Solid State Physics (3)            |
|                                             | 190. Introductory Quantum Mechanics (3) |
|                                             | 196. Advanced Physics (2 or 3)          |

### GRADUATE COURSES

200. Seminar (2 or 3)  
Prerequisite: Consent of instructor.  
An intensive study 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: Mathematics 118B and Physics 114, or their equivalents.  
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 and 175, 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 125 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 processes.
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 148B; 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 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)  
Prerequisites: Physics 104B and 160, or consent of the instructor.  
Selected advanced topics in contemporary electronics.



**261. Pulse and Digital Circuits (2)**

Prerequisites: Physics 104B and 160.

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 and 190, or consent of instructor.

The physical basis of quantum mechanics. Schrodinger's wave equation, and Heisenberg's matrix mechanics. Quantum theory of radiation, molecular and nuclear systems. Approximation methods.

**280. Theory of the Solid State (3)**

Prerequisites: Physics 180 and 190.

The energy band theory of solids, with applications to the electrical and optical properties of dielectrics, semiconductors and metals.

**296. Directed Field Experience (1-6)**

Meets the requirement of directed field experience for candidates for the master of science degree, but is not limited to candidates for the degree. Required in addition to the 30-unit requirement for the degree, when previous experience is lacking or not acceptable.

**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 offers graduate work leading to the master of arts degree with a major in political science and the master of science degree in public administration. 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 Political Science include the Public Affairs Research Institute, the Public Administration Center, the International Relations Center, the Institute of International Relations, and the Politics and Citizenship Laboratory. 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 regular graduate standing, as described in Part One of this bulletin under Admission to the Graduate Division. 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 DEPARTMENTAL REQUIREMENTS

In addition to meeting the requirements for regular graduate standing and the general requirements for the master of arts degree as described in Part Two 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 Two of this bulletin under Master of Arts Degree.

### MASTER OF SCIENCE DEGREE IN PUBLIC ADMINISTRATION

This degree permits the selection under advisement, from a wide variety of courses, of a program 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 other departments 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 REGULAR GRADUATE STANDING

All students must satisfy the general requirements for admission to regular graduate standing, as described in Part One 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 DEPARTMENTAL REQUIREMENTS

In addition to meeting the requirements for regular graduate standing, the student must satisfy the general requirements for the master of science degree, described in Part Two of this bulletin, section on Master of Science Degree. The student must also complete: (1) Political Science 200, The Scope and Method of Political Science; Political Science 240, Seminar in Public Administration (6 units); and Political Science 299, thesis; (2) a minimum of 12 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, personnel administration, finance administration, local government, administration, social work administration, correctional administration, and public planning administration; and (4) six units of internship (directed field experience).

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 six 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 ordinarily 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 Two of this bulletin under Master of Science Degree.

## FACULTY

Department Chairman: R. F. Wilcox

Graduate Advisers: Master of Arts (major): W. R. Bigger, M. D. Generales, H. L. Janssen, N. V. Joy, D. B. Leiffer, R. F. Wilcox; Master of Science (public administration): W. R. Bigger, J. D. Kitchen, D. B. Leiffer, R. F. Wilcox

Professors: W. R. Bigger, Ph.D.; M. D. Generales, Degree in Law and Political Science, University of Athens; D. B. Leiffer, Ph.D.; R. F. Wilcox, Ph.D.

Associate Professors: H. L. Janssen, Ph.D.; N. V. Joy, Ph.D.; L. V. Padgett, Ph.D.

Assistant Professors: Melvin Crain, Ph.D.; I. K. Feierabend, Ph.D.; E. M. Goldberg, M.A.; Richard Gripp, Ph.D.; J. D. Kitchen, 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)                      | 145. Human Factors in Management (3)              |
| 107A-107B. Constitutional Government (2-2)               | 146. Wage and Salary Administration (3)           |
| 111A-111B. Theory of the State (3-3)                     | 147. Government and Public Policy (3)             |
| 112. Modern Political Thought (3)                        | 148. Government of Metropolitan Areas (3)         |
| 120. Political Parties (3)                               | 149. Comparative Public Administration (3)        |
| 122. Propaganda and Public Opinion (3)                   | 151. California Law of Municipal Corporations (2) |
| 123S. Contemporary American Politics (3)                 | 152. Administrative Management (3)                |
| 124. Political Behavior (3)                              | 153. Case Studies in Public Administration (3)    |
| 125. The Legislative Process (3)                         | 157. Public Relations of Public Agencies (3)      |
| 136. Administrative Law (3)                              | 160. Principles of Planning (2 or 3)              |
| 138. Introduction to Jurisprudence (3)                   | 161. Field Studies in Government (3)              |
| 139A-139B. American Constitutional Law (3-3)             | 162. Finance Administration (2 or 3)              |
| 140. Introduction to Public Administration (3)           | 165. Dynamics of Modern International Crises (3)  |
| 142. State Government (3)                                | 168S. Institute on World Affairs (3)              |
| 143. Municipal and County Government (3)                 |                                                   |
| 144. Introduction to Public Personnel Administration (3) |                                                   |

- |                                                               |                                                               |
|---------------------------------------------------------------|---------------------------------------------------------------|
| 170A-170B. International Relations (3-3)                      | 182. Political Systems of South America (3)                   |
| 171. The Conduct of American Foreign Relations (3)            | 183. Governments and Politics of South and Southeast Asia (3) |
| 172. International Organization (3)                           | 184. The Mexican Political System (3)                         |
| 173. Principles of International Law (3)                      | 185. Governments of Continental Europe (3)                    |
| 175. International Relations of the Latin-American States (3) | 187. Governments and Politics of the Far East (3)             |
| 180. Government of England (3)                                | 188. Governments and Politics of the African States (3)       |
| 181. Government of the Soviet Union (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.
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.
250. **Seminar in Local Government** (3)  
Selected problems of state and local government and intergovernmental relations. May be repeated with new content to a maximum of six units with consent of graduate adviser.
260. **Planning and Public Policy** (3)  
Prerequisite: 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.
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. Required in addition to the 30 units for candidates for the master of science degree in public administration who lack practical experience.



**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 offers graduate work leading to the master of arts degree with a major in psychology, the master of arts degree for teaching service, and the master of science degree in psychology. The general secondary credential with a major in psychology is also available; however, the student is required to complete two minors. Graduate training is provided for students specializing in the fields of clinical, industrial and personnel, and theoretical-experimental psychology. Laboratory facilities for receiving training in both human and animal psychology are available, and students are required to take courses in experimental psychology and statistical methods. Practicum courses designed to fulfill the requirements for directed field experience are available in all three fields of graduate specialization. These practicum courses involve supervised training in such places as local military establishments, industrial plants, and hospitals.

### ADMISSION TO THE GRADUATE DIVISION

All students must satisfy the general requirements for admission to the Graduate Division with regular graduate standing, as described in Part One of this bulletin under Admission to the Graduate Division. 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 regular graduate standing and the general requirements for the master of arts degree as described in Part Two of this bulletin under Master of Arts Programs, 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 222 and 223. (Psychology 290 and 296 cannot be included in this program.)
  - (b) A minimum of nine additional approved graduate or upper division courses in psychology. The following are required courses, either as a part of the undergraduate or graduate program: Psychology 104B, 105, 110, 175, 177, 178, and one course selected from Psychology 111, 112, 113, and 114.
  - (c) Nine additional units of approved graduate or upper division courses in a field or fields related to psychology.
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 DEPARTMENTAL REQUIREMENTS FOR THE MASTER OF SCIENCE DEGREE

In addition to meeting the requirements for admission to the Graduate Division with regular graduate standing and the general requirements for the master of science degree as described in Part Two of this bulletin, the student must meet the following requirements:

1. 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 exclusive of Psychology 290 and 296.
  - (b) Psychology 290 and Psychology 299.



- (c) Additional approved graduate or upper division courses to total at least 30 units. The following courses or their equivalents must be completed either in undergraduate or graduate study: Psychology 104B, 105, 111, 175, 177, 178, and one course selected from Psychology 111, 112, 113, and 114.
2. Satisfy the requirement for Psychology 296, Directed Field Experience, as described in Part Two of this bulletin in the section on the Master of Science Degree.

#### SPECIFIC REQUIREMENTS FOR THE GENERAL SECONDARY CREDENTIAL

Applicants for the general secondary credential must complete three units of Psychology 201, Seminar, and six upper division or graduate units in subject fields commonly taught in junior and senior high schools.

#### ADVANCEMENT TO CANDIDACY

In addition to satisfying the general requirements for advancement to candidacy, which are described in Part Two of this bulletin under Master of Arts or Master of Science Degree, the student must make a satisfactory score on the graduate record area examination, and have a percentile rank of 50 or higher on the Psychology Department Comprehensive Examination "total".

#### FACULTY

Department Chairman: M. B. Turner

Graduate Adviser: R. C. Harrison

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.; W. C. Treat, Ph.D.; M. B. Turner, Ph.D.

Associate Professors: W. J. Crow, Ph.D.; L. O. Daniel, Ph.D.; R. C. Harrison, Ph.D.; D. M. Rumbaugh, Ph.D.; J. B. Sidowski, Ph.D.

Assistant Professors: R. G. Eason, Ph.D.; W. A. Hunrichs, Ph.D.; W. D. Kinnon, Ph.D.; F. P. Leukel, Ph.D.; E. F. O'Day, Ph.D.; Robert Penn, Ph.D.; T. T. Psomas, Ph.D.; Evalyn Segal, Ph.D.; J. R. Smith, Ph.D.; W. R. Stevens, 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.

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. One two-hour lecture and one three-hour laboratory per week.

##### 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. One two-hour seminar and one three-hour laboratory per week.

##### 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, 111, or 112.

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.

##### 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.

##### 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)**

Prerequisites: Limited to graduate students in psychology, with appropriate qualifications in a field of professional skill, and approved by the practicum committee of the Psychology Department.

Meets the requirement of directed field experience for candidates for the master of science degree, but is not limited to candidates for the degree. Required in addition to the 30-unit requirement for the degree, when previous experience is lacking or not acceptable.

**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. Teaching majors and minors for the general secondary credential are also offered. (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 regular graduate standing, as described in Part One 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, and Economics 140, Statistical Methods, or their equivalents, and six units of upper division courses in economics or related fields as approved by the graduate adviser. 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 100, Modern Social Theory, and Sociology 160, Elementary Social Statistics, or their equivalents.

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

In addition to meeting the requirements for regular 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, 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 10 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.

### SPECIFIC DEPARTMENTAL REQUIREMENTS FOR THE GENERAL SECONDARY CREDENTIAL

Applicants for the general secondary credential must complete a minimum of four units of upper division or 200-numbered courses in social science areas, selected with approval of the graduate adviser.

### ADVANCEMENT TO CANDIDACY

All students must satisfy the general requirements for advancement to candidacy which are described in Part Two of this bulletin under Master of Arts Degree—General Requirements.



## FACULTY

Division Chairman: D. S. Milne

Graduate Adviser: D. S. Milne

General Secondary Credential Adviser: D. S. Milne

Faculty members in the departments of economics, geography, history, 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.

## SOCIOLOGY

### GENERAL INFORMATION

The Department of Sociology 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 regular graduate standing, as described in Part One of this bulletin under Admission to the Graduate Division. 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 DEPARTMENTAL REQUIREMENTS FOR MASTER OF ARTS PROGRAMS

In addition to meeting the requirements for regular graduate standing and the general requirements for the master of arts degree, as described in Part Two 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 Two of this bulletin under Master of Arts Degree. Students majoring in sociology must also have completed Sociology 164, Methods of Social Research, either as an undergraduate or as a graduate.

## FACULTY

Department Chairman: B. C. Kirby

Graduate Adviser: B. C. Kirby

Professors: K. E. Barnhart, Ph.D.; O. E. Klapp, Ph.D.; D. S. Milne, Ph.D.; S. L. Rogers, Ph.D.

Associate Professors: P. H. Ezell, Ph.D.; B. C. Kirby, Ph.D.; Aubrey Wendling, Ph.D.

Assistant Professors: W. M. Bates, Ph.D.; M. J. Daniels, Ph.D.; J. R. DeLora, Ph.D.; T. O. McJunkins, M.A.; N. N. Mouratides, M.A.; Irving Tebor, Ph.D.; Frank Young, Ph.D.



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

### UPPER DIVISION COURSES

- |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>100. History of Social Thought (3)<br/>         110. Social Disorganization (3)<br/>         113. Criminology and Penology (3)<br/>         114. Juvenile Delinquency (3)<br/>         116. Contemporary Correctional Administration (3)<br/>         120. Industrial Sociology (3)<br/>         121. Medical Sociology (3)<br/>         125. Race Relations (3)<br/>         136. Sociology of the Family (3)<br/>         138. Sociology of Religion (3)<br/>         146. Collective Behavior (3)<br/>         148. Small Groups (3)<br/>         150. Population Problems (3)</p> | <p>157. Urban Sociology (3)<br/>         164. Methods of Social Research (3)<br/>         180. Fields of Social Work (3)<br/>         182. Methods of Social Work (3)<br/>         183. Social Group Work (3)<br/>         184. Community Welfare Organization (3)<br/>         185. Public Welfare (3)<br/>         186. Social Work and the Law (3)<br/>         187. Child Welfare (3)<br/>         189. Field Assignment in Social Work (3)<br/>         199. Special Study (1-6)</p> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 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.  
 Advanced 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.
- 280. Principles of Social Case Work (3)**  
 Prerequisite: Sociology 180, or Psychology 152, or Education 233, or Psychology 233.  
 A study of the principles and practices of social case work; problems of case recording and analysis. Directed field work and case studies. (Formerly Sociology 230.)

### 281. Field Work in Social Case Work (3)

Prerequisites: Sociology 180 and 280.

Supervised practice in local social work agencies. (Formerly Sociology 231.)

### 285A-285B. Case Work Supervision (3-3)

Prerequisite: Sociology 280 or consent of instructor.

Discussion and analysis of cases and problem situations encountered by social case work supervisors. Review of basic case work techniques and principles of personnel supervision as applied to social case work. (Formerly Sociology 235A-235B.)

### 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 offers graduate work 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. The general secondary and junior college credentials with teaching 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 regular graduate standing, as described in Part One of this bulletin under Admission to the Graduate Division. An undergraduate major in Spanish, including 24 upper division units, must have been completed, at least three units of which must have been in a comprehensive reading and survey course. A proficiency examination in Spanish will be given by the Department of Foreign Languages to applicants for the master's degree for teaching service who have already obtained a general secondary credential.

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

In addition to meeting the requirements for regular graduate standing and the general requirements for the master of arts degree as described in Part Two 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, 205, 290, and 299.

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

In addition to meeting the requirements for regular graduate standing and the general requirements for the master of arts degree as described in Part Two 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 298, and six units selected from Spanish 201, 204, and 205. The comprehensive examination, which is required in lieu of a thesis of candidates for the master of arts 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.

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

### SPECIFIC REQUIREMENTS FOR CREDENTIALS

In the graduate program for the general secondary credential, the student must include Spanish 201 or 202, and 204 or 205.

For the junior college credential, the student must complete the master of arts degree with a major in Spanish, Educ. 201, 223, 251, and four units of directed teaching in a junior college. Junior college credential candidates are expected to substitute Spanish 298, Special Study, and a comprehensive examination for Spanish 299, Thesis.

Before taking a directed teaching assignment in Spanish, the candidate for a teaching credential must pass an examination on Spanish civilization and proficiency in the Spanish language administered by the Department of Foreign Languages.

### ADVANCEMENT TO CANDIDACY

All students must satisfy the general requirements for advancement to candidacy as described in Part Two of this bulletin under Master of Arts Degree.

### FACULTY

Chairman, Department of Foreign Languages: Elizabeth M. Brown, Ph.D.  
Graduate Adviser: C. H. Baker  
Credential Adviser: L. N. Messier, Ph.D.  
Assistant Professors: C. H. Baker, Ph.D.; W. J. Freitas, Ph.D.; G. Lemus, M.A.

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

#### UPPER DIVISION COURSES

- |                                                   |                                                  |
|---------------------------------------------------|--------------------------------------------------|
| 101A-101B. Conversation and Composition (3-3)     | 110A-110B. Novel and Short Story in Spain (3-3)  |
| 102A-102B. Introduction to Spanish Classics (3-3) | 140. Spanish Civilization (2)                    |
| 104A-104B. Spanish-American Literature (3-3)      | 141. Spanish Civilization (2)                    |
| 105A-105B. Modern Spanish Drama (3-3)             | 198. Comprehensive Reading and Survey Course (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.
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 298 and a comprehensive examination for the thesis. In unusual cases, a student may write a thesis with the permission of the department.



## SPEECH ARTS

### GENERAL INFORMATION

The Department of Speech Arts offers graduate work 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 general secondary credential with teaching majors and minors in speech arts is also available. The department offers advanced work in the areas of public speaking, 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 an eight-unit speech and hearing clinic. Graduate students serve as interns in a program of field training with commercial stations in the San Diego area. New facilities for training in correction of speech and hearing disorders are available in the Clinical Training Center in the education building.

### ADMISSION TO THE GRADUATE DIVISION

All students must satisfy the general requirements for admission to the Graduate Division with regular graduate standing, as described in Part One of this bulletin under Admission to the Graduate Division.

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

In addition to meeting the requirements for regular graduate standing and the general requirements for the master of arts degree as described in Part Two 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 DEPARTMENTAL REQUIREMENTS FOR THE MASTER OF ARTS DEGREE FOR TEACHING SERVICE

In addition to meeting the requirements for regular graduate standing and the general requirements for the master of arts degree as described in Part Two 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 10 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.)

### SPECIFIC DEPARTMENTAL REQUIREMENTS FOR THE GENERAL SECONDARY CREDENTIAL

Applicants for the general secondary credential must complete at least six units of 200-numbered courses in speech arts.

### ADVANCEMENT TO CANDIDACY

All students must meet the general requirements for advancement to candidacy, which are described in Part Two of this bulletin under Master of Arts Degree. In addition, students seeking the master of arts degree with a major in speech arts are required to pass a qualifying examination.

## FACULTY

Department Chairman: Sue W. Earnest  
Graduate Adviser: Hunton D. Sellman  
Credential Adviser: William J. Adams  
Professors: J. W. Ackley, Ph.D.; Sue W. Earnest, Ph.D.; Paul Pfaff, Ph.D.; E. K. Povenmire, M.F.A.; H. D. Sellman, M.S.  
Associate Professors: W. J. Adams, Ph.D.; R. L. Benjamin, Ph.D.; K. K. Jones, Jr., M.A.; Jack Mills, Ph.D.; D. W. Powell, M.F.A.  
Assistant Professors: R. A. Harris, M.A.; R. E. Lee, M.A.; Frank Norwood, M.A.; Eugene Ouellette, Ph.D.; Phyllis N. Rogers, M.A.

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

#### UPPER DIVISION COURSES

- |                                                        |                                                                               |
|--------------------------------------------------------|-------------------------------------------------------------------------------|
| 100. Phonetics (3)                                     | 174. Principles and Methods of Speech Correction (3)                          |
| 108. Advanced Interpretation (3)                       | 176. Stuttering and Neurological Disorders (3)                                |
| 118A-118B. Play Analysis-Playwriting (3-3)             | 177. Audiology (3)                                                            |
| 130. Semantics (3)                                     | 178. The Teaching of Lip Reading (2)                                          |
| 140A-140B. Scene Design for Stage and Television (3-3) | 179. Clinical Methods in Speech Correction (2)                                |
| 142. Theater Workshop (2-6)                            | 180. Field Work in Clinical Practice in Speech Correction (2)                 |
| 145. Stage and Television Lighting (3)                 | 181. Radio and Television Station Operation and Management (4)                |
| 152. History and Design of Costume (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)                  | 187. Radio and Television News (3)                                            |
| 159. Stage Direction (3)                               | 190. Rhetorical Theory (3)                                                    |
| 160. Stage Direction Laboratory (1)                    | 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)                                                      |
| 170. Speech Development (3)                            |                                                                               |
| 171. Aural Rehabilitation (3)                          |                                                                               |
| 172. Mechanics of Speech Production (3)                |                                                                               |
| 173. Functional Problems of Speech and Hearing (3)     |                                                                               |

#### GRADUATE COURSES

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.
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).  
Prerequisites: For costume design, Speech Arts 152; for scenery design, Speech Arts 140A, 140B, and 156.  
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  
B. Scenery Design



**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 symptomatology 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 managements.

**280. 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 toward an advanced 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

### 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.

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