

SAN DIEGO STATE COLLEGE

**BULLETIN
AND
ANNOUNCEMENT
OF COURSES**



FOR THE YEAR 1951-1952

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and Director of Education
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State Colleges and Teacher Education
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DONALD R. WATSON.....Dean of Instruction
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CHARLES E. PETERSON.....Dean of Men; Associate Dean of Students
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HILDING B. CARLSON.....Coordinator of Personnel Services Center
THORSTEN R. CARLSON.....Principal of Campus Laboratory School
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MARION L. PARKER.....Registrar
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JIM R. SCHUNERT.....Coordinator of Secondary Education
JOHN PAUL STONE.....Head Librarian
ALFRED E. WHITE.....Admissions Officer; Coordinator of Educational Research

ERRATA

PAGE 66 THE FOLLOWING COURSE WAS OMITTED:
AESTHETICS 52A-52B. SURVEY OF ORIENTAL
ART (3) YEAR, 1.

A STUDY OF THE ART OF THE GREAT
CULTURES OF THE ORIENT. (52A IS A
PREREQUISITE FOR 52B).

II PAGE 76 BIOLOGY (G) 4 PLANT AND ANIMAL TYPES (3)1,11
DELETE "PREREQUISITE" AND REST OF LINE.
ADD: NOT OPEN TO STUDENTS WITH CREDIT
FOR BIOLOGY 10B, BOTANY I OR 2A-2B, OR
ZOOLOGY 1A-1B.

PAGE 85 (SEE "THIRD YEAR" UNDER PLAN FOR B.S. DEGREE)
GERMAN S3-S4 SHOULD READ GERMAN 8A-8B.

PAGE 86 (SEE "THIRD YEAR" UNDER PLAN FOR A.B. DEGREE
AND CERTIFICATE)
GERMAN S3-S4 SHOULD READ GERMAN 8A-8B.

VOLUME 38

JUNE, 1951

SAN DIEGO STATE COLLEGE

SAN DIEGO, CALIFORNIA

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1951

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1952

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CALENDAR 1951-1952

SUMMER SESSIONS, 1951

Term A (6 weeks) June 18-July 27
Term B (9 weeks) June 18-August 17
Term C (3 weeks) July 30-August 17

FALL SEMESTER, 1951-1952

- July 14 Qualifying examinations for all entering students.
(8.15 a.m. to 12.30 p.m.)
- August 1 Applications for admission must be filed on or before this date.
- August 20 Qualifying examinations for all entering students.
(8.15 a.m. to 12.30 p.m.)
- September 4-7 Orientation program. Attendance required of all new students.
- September 5 Fundamentals test and General Culture test for Teacher Education.
(Fundamentals test, 8.30 a.m. to 12 m.) (General Culture test, 1 p.m. to 4.30 p.m.)
- September 10 Admission Day holiday.
- September 11-12 Registration and payment of fees.
- September 13 Instruction begins. Late registration fee becomes effective.
- September 18 Applications for admission to Teacher Education.
Little Theater, 11 a.m.
- September 24 Last date for late registration.
- September 24-25 File registration books.
- November 2 Last date for withdrawal from classes.
- November 12 Armistice Day holiday.
- November 22-24 Thanksgiving recess.
- December 7 Last date for filing applications for mid-year graduation.
- December 15 Last day before Christmas recess begins.
- January 2 Classwork resumes.
- January 17-24 Semester examinations.
- January 24 First semester ends.

SPRING SEMESTER, 1951-1952

- January 2 Applications for admission must be filed on or before this date.
- January 12 Qualifying examinations for all entering students.
- January 28 Fundamentals test and General Culture test for Teacher Education.
(Fundamentals test, 8.30 a.m. to 12 m.) (General Culture test, 1 p.m. to 4.30 p.m.)
- January 29-30 Orientation program. Attendance required of all new students.
- January 31-February 1 Registration and payment of fees.
- February 4 Instruction begins. Late registration fee becomes effective.
- February 5 Applications for admission to Teacher Education.
Little Theater, 11 a.m.

February 11	Last date for late registration.
February 12	Lincoln's Birthday holiday.
February 13-14	File registration books.
February 22	Washington's Birthday holiday.
March 28	Last date for withdrawal from classes.
April 7-12	Spring recess.
May 28-June 5	Semester examinations.
May 30	Memorial Day holiday.
June 5	Second semester ends.
June 6	Commencement.

SUMMER SESSION, 1952

Dates to be announced.

FEES AND EXPENSES

PROBABLE EXPENSES FOR ONE SEMESTER

An estimate of the expense of attendance for one semester is given below. No estimate is made as to the cost of clothing, or other personal items, since these figures vary with the demands of the individual.

A Partial Estimate of Expenses			
	One Semester	Minimum	Maximum
Fees	-----	\$24.00	\$31.50
Books	-----	18.00	30.00
Board and room	-----	275.00	-----
Transportation, lunches, incidentals	-----	20.00	60.00
Miscellaneous	-----	5.00	-----

Before enrolling in college, the student should possess sufficient resources to meet the minimum expenses for one semester. A limited amount of clerical work in offices and in the library may be offered from time to time but ordinarily it is not sufficiently remunerative to reduce expenses materially.

Enrollment Fees Payable at Time of Registration

Regular students (carrying more than 6 units) :

Auditors pay same fees as students carrying courses for credit.	
Tuition	\$6.50
Materials and service	7.50
Total	\$14.00

Limited students (carrying 6 units or less) :

Auditors pay same fees as students carrying courses for credit.	
Tuition (one, two, or three units)	\$5.25
Materials and service	2.25
Total	\$7.50
Tuition (four, five, or six units)	\$6.50
Materials and service	7.50
Total	\$14.00

Student activity fee (not a state fee) :

Regular students	\$10.00
Limited students	2.00
Associated Students Group Accident Insurance	
Men	3.50
Women	2.50

Miscellaneous Fees

(Fees payable when service is rendered)

Change of program	\$1.00
Failure to meet administratively required appointment or time limit	2.00
Evaluation of records for nonmatriculated students	2.00
Late registration	2.00
Transcript of record (first copy free)	1.00
R. O. T. C. deposit (unexpended portion is refundable)	10.00

Graduation Fees

State teaching credentials (each credential)	\$4.00
Diploma	1.00

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.

Summer Session Fees

Tuition, each session	(Per unit) \$7.50
Activity fee (not a state fee)	2.00

THE COLLEGE

FUNCTIONS OF THE STATE COLLEGES

The state colleges have three major functions, namely: (1) To help the individual student to develop a well-rounded and adjusted personality; (2) to promote in all students civic intelligence and competence; and (3) to create supplies of trained men and women to serve as teachers and officials in the elementary and secondary schools, to fill places of leadership in business and industry, and to transfer to graduate institutions to equip themselves to extend the frontiers of knowledge and to occupy the positions of leadership in various professions. In terms of publicly supported higher education, the state colleges and the university together make provision for the realization of all the essential objectives of higher education in our State.

To achieve their unique purposes the state colleges have developed and are improving offerings as follows:

1. Teacher education curricula for those students who plan to teach, supervise, or administer in the elementary school, the junior high school, and in secondary schools.
2. Preprofessional curricula.
3. Four-year curricula in such fields as business, industry, governmental services, homemaking, and social service.
4. General education for students who take work which leads toward the bachelor's degree or to the higher professions through graduate work.
5. Guidance services to assist the individual student to plan his educational program and to make his college and life adjustments.
6. Extension courses in appropriate fields.

The democratic controls exercised over the state colleges make them readily and effectively responsive to individual and community needs and encourage them continuously to make significant improvements in both curriculum and personal services. The state colleges are thus laboratories in which the facts and theories developed in research, in community living, and in daily association with students are reflected in an instructional program designed to provide educational services inherent in the principle of equality of opportunity.

LOCATION AND ENVIRONMENT

Renowned as a winter resort with a mild but invigorating climate, San Diego has become equally famous for its cool summers. High cultural standards in art, music, literature, and science create a stimulating environment for a college. Many of these advantages are to be found in the heritage resulting from the expositions of 1915-16 and 1935-36, including the buildings themselves, which portray the best types of Spanish colonial art and architecture. Housed in these buildings are the Fine Arts Gallery, exhibits in anthropology, natural history, and American archaeology, which are in many respects unsurpassed. The outdoor organ, the Ford Bowl, and the horticultural gardens make Balboa Park, in which all these facilities are located, world renowned. The Scripps Institution of Oceanography, operated by the University of California at La Jolla, gives opportunity for important cooperation in the biological sciences.

BUILDINGS AND EQUIPMENT

On February 1, 1931, the college was moved to the new campus, located one mile north of the city's principal east-west boulevard, El Cajon Boulevard. The buildings are of Spanish-Moorish architecture which is well suited to the landscape and climate of this region. They include the Academic Building (which houses lecture halls, classrooms and administrative offices); the Science Building; the Fine Arts Building; the Library; the Little Theater; the Music Building; the Campus Elementary School; Scripps Cottage (a social clubhouse for women students); the Cafe and Book Store; and the Physical Education Building (a structure with adequate facilities for both

men and women). The gymnasium contains a very fine basketball floor with stands that will accommodate 1,500 spectators. A fine concrete stadium, constructed in a natural site, has a seating capacity that is adequate for present needs. The open air theater, seating 4,200 persons, serves as a meeting place for large groups.

FACILITIES FOR THE EDUCATION OF TEACHERS

The college maintains a modern elementary school on the campus where it has developed an extensive program for the education of elementary school teachers. The classroom-laboratory plan which calls for the use of work-rooms, the library, and shops affords unusual opportunities for the induction of students into teaching. By arrangement with the San Diego city and county schools, directed teaching is provided in the elementary and secondary schools.

THE FACULTY

The faculty of 254 members has received advanced training in some 124 colleges and universities of the United States or foreign countries. The professional education of the faculty places the college at the 97 percentile position among teacher education institutions in the Nation. For listings and further details, see the Directory.

THE LIBRARY

The library facilities of this college are noteworthy for an institution of its size. The library consists of well over 120,000 books and receives more than 900 different periodicals selected to meet the requirements of a modern educational institution. Professionally trained librarians are available to render assistance to students and faculty in their reading and reference work.

The Campus Elementary School Library, representing a collection of 15,000 volumes, possesses equipment and building facilities that are unique.

ACCREDITATION

San Diego State College is a member of the Northwest Association of Secondary and Higher Schools, the American Association of Colleges for Teacher Education, and the Western College Association.

LIVING ACCOMMODATIONS

Living arrangements for students whose homes are not in San Diego or within commuting distance are made through the offices of the Dean of Women or the Dean of Men. Women students are urged to live in the residence hall adjoining the campus. Careful consideration is given to study conditions, healthful living, and adequate social opportunities. Room and board may be secured for approximately \$275 per semester, payable in four installments. Opportunities to reduce this figure by working a few hours each week are occasionally available. Reservations should be made in advance through the Manager of Quetzal Hall, 5192 College Avenue, San Diego 15, California. Single women students under the age of 21 who find other accommodations more desirable must file with the Dean of Women a statement from the parent or guardian.

VETERANS' EDUCATION AND HOUSING

The college has been approved by various accrediting agencies to offer courses for veterans leading to the baccalaureate in some 23 major fields and to the master's degree and various teaching credentials. In connection with the Personnel Services Center, a veterans' office is maintained on the campus to facilitate registration, aid in the establishment of benefits, afford special counseling services, and serve as an information center.

Through the City of San Diego, 400 family units formerly under the jurisdiction of the Federal Public Housing Authority have been made available to the college for the housing of its married veterans. These units are located some eight miles from the campus proper at Aztec Terrace, midway between Old Town and Loma Portal. Applications for housing at Aztec Terrace are made through the office of the Dean of Men.

STUDENT LIFE

A rich field of extracurricular activities is available to the student throughout his college life. The student is urged to select these activities carefully in order that he may profit by such extra-class experiences without lowering his standards of scholarship. The *Student Handbook*, available at the time of registration, gives information concerning activities which include organizations in every department of the college, and opportunities for individual and group experience in the social, athletic, fraternal, religious and governmental life of the campus.

STUDENT HEALTH SERVICE

The Health Department is maintained for the protection and care of student health. A complete physical examination is required of each student upon admission to college. Careful attention is given to cases undergoing remedial treatment or to cases in which a modification of study load or amount of participation in physical activities seem advisable.

A college physician and school nurse are available for consultation and emergency treatment. Students who have been absent over three days because of illness should receive clearance from the Health Office before returning to classes.

A group plan for accident insurance is in operation for students who desire to participate.

PERSONNEL SERVICES CENTER

The college offers the services of a trained staff to students who wish help in the solution of problems which are personal, social, academic, or occupational in nature. It is a program designed to help students gain the greatest possible advantage of their college experience. Agencies and facilities cooperating in the effort to assist students include the student health service, reading and study laboratory, the speech improvement program, mathematics clinic, the placement and occupational guidance service, and a staff of personal counselors. Students who wish to take advantage of these facilities may do so through the Personnel Services Center.

PLACEMENT OFFICE

The Placement Office provides a central source of information on placement opportunities and vocational trends. The staff assists undergraduates in finding part time employment. Full time employment for graduates or former students is facilitated through contacts with schools, businesses, and industries in this locality.

SCHOLARSHIPS

A number of scholarships for both men and women has been made available through the efforts of the alumni, civic organizations, student organizations, business and professional groups and individuals, and other friends of the college. Superiority in ability and achievement, strength of character, and worthiness from the point of view of need are the standards upon which selection is based. Scholarship aid is limited for the most part to students who have completed at least one semester at the San Diego State College. Except for athletics grants-in-aid, which are initiated through the Director of Athletics, scholarship applications are made through the office of the Dean of Women.

Unless otherwise stipulated, all scholarship awards are determined and announced by the faculty Committee on Loans and Scholarships in October of the college year. Applications for scholarships for the fall semester must be filed with the office of the Dean of Women prior to October 15th. The scholarships available for 1951-52:

ALPHA GAMMA DELTA. This sorority presents a \$50 award each year to the student in the sorority with the highest grade point average.

ALTRUSA CLUB. Two scholarships of \$50 each are made available annually by the Altrusa Club of San Diego. Applications are considered from women students enrolled in San Diego State College who are worthy and in need.

AMERICAN ASSOCIATION OF UNIVERSITY WOMEN. One scholarship of \$100 is given each year in June to a graduating senior who will begin work in an accredited college or university toward a higher degree or credential. The scholarship is made available by the San Diego Branch of the American Association of University Women. Interviews with representatives of that organization are required.

AMERICAN SOCIETY OF CIVIL ENGINEERS, SAN DIEGO SECTION. A scholarship of \$75 is awarded annually through the San Diego Section of the American Society of Civil Engineers to the engineering student selected for the scholarship on a basis of character, ability, personal qualities, and financial need. Nominations are made by the Engineering Department of the College. At least sophomore status is required for nomination.

ANONYMOUS (B). A scholarship of \$100 is given each year to be divided among students in financial need, at the discretion of the Committee on Loans and Scholarships. The committee gives consideration to scholastic attainment, financial need, and character.

ANONYMOUS (E). A \$50 scholarship, awarded each semester through the Committee on Loans and Scholarships, is made available by a public spirited citizen who prefers to assist a student majoring in science.

ASSOCIATED ARTS OF SAN DIEGO. A \$150 scholarship for a period of two years to a student outstanding in the Speech Arts Department.

ASSOCIATION OF CHILD EDUCATION. The Association of Child Education makes available each year a \$50 scholarship to a student in the Kindergarten-Primary program. The award is customarily made to an upper division student showing promise in a particular field who is in need financially.

BARNES CHASE COMPANY BASEBALL SCHOLARSHIP. Donated by Mr. and Mrs. Norman R. Barnes. Twenty-five dollars a month for 10 months, from September through June. Applicant must be officially enrolled in the college as a regular student in good standing; must maintain a satisfactory scholastic record and be progressing toward an academic objective; must be a member of the freshman or varsity baseball team; and be of sound moral character. The selection of the recipient will be recommended by the baseball coach and approved by the athletic department with the final approval of the Committee on Loans and Scholarships.

BARNES CHASE COMPANY BASKETBALL SCHOLARSHIP. (Same as above except for basketball player.)

BLUE KEY. One scholarship of \$50 is awarded annually to an entering freshman male student who has an outstanding record of achievement in high school activities, provided he fulfills all requirements each year. A like amount will be given each year for a period of four years.

CABRILLO CIVIC CLUBS. A scholarship of \$250 a year will be awarded a student of Portuguese descent and may be made available in his senior year of high school. The recipient must have good scholastic standing and be in need of financial assistance. An autobiography must accompany the application.

CAP AND GOWN. One \$50 scholarship is awarded annually to an upper division woman student who has attended San Diego State College for at least one semester and who has maintained at least a "B" average in scholarship for her entire college career. Applications may be secured from the Office of the Dean of Women or the San Diego State College chapter of Cap and Gown.

CHAMBER OF COMMERCE MUSIC SCHOLARSHIPS. Several scholarships of \$30 per semester have been made available by the San Diego Chamber of Commerce to players of the following instruments in the college band: Solo cornet, solo clarinet, first French horn, first trombone, first baritone, first Sousaphone, and first drum. Applications are filed directly with the Music Department.

CHIANELLI, FRANK. A \$50 scholarship is donated by Sons of Columbus in memory of the founder of this organization in California. The student must be of Italian descent, of good moral character, in need of financial assistance, and have a high scholastic rating.

CHI OMEGA FRATERNITY awards annually a \$20.00 scholarship to a student outstanding in Sociology Department.

DAUGHTERS OF THE AMERICAN REVOLUTION. Two scholarships of \$25 each are presented each spring, one to a young man and the other to a young woman outstanding in citizenship and Americanism. Applicants should have at least a "B" average in scholarship, should be able to demonstrate need for financial assistance, and should have junior standing in the college when selected. The selection is made by the faculty Committee on Loans and Scholarships and presentation of awards is made at a luncheon on Flag Day, which is given by the Daughters of the American Revolution.

DEBATE SCHOLARSHIP. \$50 will be awarded a winner in the debate events at the June National Forensic League competition. This award will be given to a student who enrolls at San Diego State College with a major in speech. The award is made possible by the generosity of Admiral Elliott Senn who has donated \$1,500 to the San Diego State College Foundation to be used for Speech Department scholarships.

DEBATE SCHOLARSHIP. \$50 will be given to a student enrolled at San Diego State College who is outstanding in debate. Selection will be made by the Speech Arts Department with final approval by the Committee on Loans and Scholarships.

DELTA DELTA DELTA NATIONAL FRATERNITY ALLIANCE. \$100 a year will be given for five years in memory of Georgia Aiman Shattuck. This scholarship is to be awarded to a woman student, in the upper division, who has been admitted to the teacher education curriculum, with a "B" average in all college work, and who is in financial need. Applications should be secured from the Office of the Dean of Women.

FACULTY DAMES. Two scholarships of \$50 each are given annually to deserving women students selected by the Loans and Scholarships Committee.

FLEMING, HARVEY, GOLF. Through a trust fund set aside for awards to exceptional golf players who enroll in college, scholarships of \$250 are given. This is a competitive award.

FOOTHILL BUSINESS AND PROFESSIONAL CLUB. Two \$50 scholarships will be awarded to young women students entering San Diego State College from Grossmont High School.

FOOTLIGHTS THEATRE, INC. Annual awards of \$50 each are made to members of this Little Theatre group who do outstanding work in dramatic arts.

FRESHMAN CLASS, 1950-1951. Two scholarships of \$50 each will be awarded in the fall of 1951, one to an entering freshman man and one to an entering freshman woman. The scholarships will be awarded to students who have demonstrated leadership in high school activities. Final selection will be made by the Committee on Loans and Scholarships.

HALE, E. T., ATHLETIC SCHOLARSHIPS. \$25 a month or more is donated for use of the Athletic Department in scholarships to outstanding athletes.

JONES, SYBIL ELIZA MEMORIAL. A scholarship of \$100 is awarded annually to a student in drama. Applicant must be officially enrolled in at least his fourth semester in speech and drama with participation in dramatic productions on the campus. He must have at least a "C" average in all college work. Applications are made to the Speech Arts Department for action and awards are made after approval of the faculty Committee on Loans and Scholarships.

KAPPA BETA NU. A \$100 scholarship is offered annually to a junior or senior woman student in elementary teacher education. Applicant must be a resident of San Diego County who is in financial need. Final selection rests with a scholarship committee of Kappa Beta Nu.

KAPPA DELTA PI. Two \$25 scholarships are awarded annually by Kappa Delta Pi of San Diego State College. Selection for awards is made by the group.

KAY JEWELERS SCHOLARSHIP. \$30 a semester for eight semesters is awarded an entering freshman. This scholarship is to be given alternating years to men and women students. In the fall semester, 1951, the scholarship will be awarded to a young woman. Selection is made by the Committee on Loans and Scholarships from applications received from high school students.

LA MESA EVENING WOMEN'S CLUB. A \$75 scholarship is awarded a senior in high school who is entering San Diego State College. Selection is made by the club.

LINKLETTER, ART. Each June four \$50 awards will be made to students graduating from San Diego City and County high schools: (1) one to a girl and one to a boy graduating from high schools with enrollment of 1,000 or over; and (2) one to a boy and one to a girl from high schools with enrollment under 1,000. Applications must be sent to the Committee on Loans and Scholarships of the College. Selection is based on scholarship, citizenship, and need.

MARCY, MAY FINNEY. Fifty-dollar scholarships are awarded from this fund to women students in upper division. Applications are made to the Dean of Women and awards made upon recommendation of the faculty Committee on Loans and Scholarships to Mrs. Marcy and a committee of members of Cap and Gown on San Diego State College campus.

NOMA SCHOLARSHIP. Presented by the National Office Management Association. \$100 a year is provided to a student planning to major in Office Management. The scholarship will be restricted to students desiring to major in Office Management beginning with their junior year. Applications may be secured from the Office of the Dean of Women or the Chairman of the Department of Business Education, Secretarial and Office Management, not later than May 15th each year. The student chosen will be notified by June 10th.

NORTH PARK KIWANI-ANNES. One scholarship of \$50 a semester for a year is awarded annually by this group to a male student preparing for teaching. The recipient must have at least junior standing at the time and be approved by the Committee on Loans and Scholarships.

OSTEOPATHY AUXILIARY of San Diego County awards annually \$100 to a student who has graduated from San Diego State College and has been accepted for enrollment in the College of Osteopathy in Los Angeles.

PANHELLENIC OF SAN DIEGO STATE COLLEGE. \$50 is given annually to the sorority member who has made the highest grade point average in the fall semester.

P. E. O. SCHOLARSHIPS. Various chapters of this organization assist worthy students in amounts ranging from \$15 a month to \$50 a semester. Usually the selection for the awards is made by the chapter itself.

PI LAMBDA THETA. An annual scholarship of \$50 will be given to a senior student in education. The selection will be made by the fraternity with approval of the Committee on Loans and Scholarships.

SAN DIEGO BUSINESS AND PROFESSIONAL WOMEN'S CLUB. A \$50 scholarship is awarded annually to a worthy young woman attending San Diego State College and majoring in Business Administration and having at least a "C" average.

SAN DIEGO CITY PANHELLENIC. Two \$50 scholarships are awarded annually to two upper division women students. Applications are made through the faculty Committee on Loans and Scholarships and selection is left to the discretion of the committee.

SAN DIEGO CITY TEACHERS ASSOCIATION. Two scholarship of \$50 each are presented each year to prospective teachers with no restrictions as to college year. Applications are made on forms supplied by the San Diego City Teachers Association and are reviewed by the association's committee on scholarships. Personal interviews are required, and final selection is made by that committee.

SAN DIEGO COUNTY TEACHERS ASSOCIATION. From two to four \$100 scholarships are made available annually by this group of teachers. Awards are made to students in the field of elementary education and final selection rests with the Committee on Loans and Scholarships.

SAN DIEGO COUNTY FEDERATION OF WOMEN'S CLUBS. A \$50 award is made to a student majoring in Art. Student is chosen by the Art Department and must submit some art object he has made.

SENN, PERCIE BELLE, SCHOLARSHIP IN SPEECH. A scholarship of \$50 a semester for four semesters is given by Admiral Elliott Senn and the San Diego County Committee of the National Society of the Colonial Dames of America in memory of Admiral Senn's mother. The scholarship is open to Seniors in San Diego city and county high schools on a competitive basis in a speech contest. Subject, time and place of the contest will be announced each spring by the Speech Department.

SOUTHLAND CLUB SCHOLARSHIP. \$50 award made available by the Southland Club for Business and Professional Women to a junior or senior woman student who plans to enter business or a profession. The student must have at least a "B" average; she must have been graduated from a San Diego City or County high school and must be of good moral character and in financial need. Applications made at the Office of the Dean of Women and approved by the Committee on Loans and Scholarships.

STEINMAN-HILLEL. Mr. and Mrs. Lou Steinman, members of the San Diego Lasker Lodge of the B'nai B'rith, which sponsors the Hillel organization on the San Diego State College campus, have set aside \$400 for scholarships, \$50 to be awarded annually for the next 8 years to a student who has done the most to further the cause of interfaith cooperation among the students of the campus. The selection of the awardee shall be made by a committee of three judges.

STOTT, MRS. DOROTHY CRANSTON. Each June a scholarship of \$100 will be awarded to a student who has attended the San Diego State College for at least two years and who is being graduated or has been graduated by the San Diego State College with a major in English who begins or continues work in the San Diego State College, or in any other accredited college or university, towards a higher degree or credential. The selection is made by the Department of English with approval by the Committee on Loans and Scholarships.

STOTT, K. W. Each June a scholarship of \$100 will be awarded to a student who has attended the San Diego State College for at least two years and who is being graduated or has been graduated by the San Diego State College with a major in History who begins or continues work in the San Diego State College, or in any other accredited college or university, towards a higher degree or credential. The selection is made by the Department of History with approval by the Committee on Loans and Scholarships.

TEACHER EDUCATION SCHOLARSHIP. The California Congress of Parents and Teachers, Inc., each year gives \$300 to be awarded to one or two students. Selections are made upon the following conditions: (1) The recipient must have high qualifications and be in financial need; (2) The scholarship will be granted to students training to teach in the public elementary schools of California; and (3) The award shall be limited to students in the junior and senior years and graduate level.

UNESCO SCHOLARSHIP. A \$50 scholarship is awarded at the time of the annual High School UNESCO Conference. The recipient is selected from three high school students attending the conference who make the best showing.

VISTA BUSINESS AND PROFESSIONAL WOMEN'S CLUB. \$100 scholarship made available to one or more International students to assist them with tuition fees.

WALKER, RALF MARC. A scholarship in the amount of \$500 is made available by the Walker-Scott Corporation in memory of the late Mr. Ralf Marc Walker to a woman student majoring in merchandising or retail trade at the San Diego State College. The scholarship is presented to a girl in Walker's Hi-Debber Council each year. The total scholarship is deposited in the San Diego State College Foundation and is handed to the recipient at the rate of \$50 a semester for each of the first three years and \$100 a semester for the two senior semesters.

WEINBERGER, HENRY, INTERFAITH SCHOLARSHIP. A scholarship of \$100 is awarded in April of each year to the student of any religious faith enrolled at the San Diego State College who is judged to have done the most to further interfaith ideals among the students of the college during the year of the award. This scholarship is made available by Mr. Henry Weinberger of the Lasher Lodge of B'nai B'rith, under auspices of the B'nai B'rith-Hillel Councilorship on San Diego State College Campus.

WOMEN'S AUXILIARY OF SAN DIEGO DENTAL SOCIETY. An annual award of \$100 is made available by the Women's Auxiliary of San Diego Dental Society to an outstanding male student in pre-dentistry.

LOANS

Short term loans are available to students who have attended the San Diego State College for at least one semester and who have demonstrated ability to do satisfactory college work. Applications for loans are made to the Committee on Loans and Scholarships through the Office of the Dean of Men or Dean of Women.

ADMISSION AND REGISTRATION

GENERAL ADMISSION REQUIREMENTS

High school graduates and other applicants possessing equivalent preparation may be admitted to this college upon evidence of fitness to profit by college instruction, such fitness to be shown by previous scholastic records, by evidence of good moral character and personal qualifications, and by satisfactory scores on tests which the college may require.

ADMISSION OF HIGH SCHOOL GRADUATES

(1) A high school transcript must be presented showing satisfactory scholarship, and (2) applicants must demonstrate readiness for college instruction by making satisfactory scores on such tests as the college may designate.

Regular status will be granted if the student has earned A or B grades in not less than 16 semester courses during the tenth, eleventh, and twelfth grades.

Provisional status will be granted if the student has earned A or B grades in not less than 12 semester courses during the tenth, eleventh, and twelfth grades. Individuals who fall slightly below the above standard may be admitted to provisional status if qualifying examination scores indicate probable success in college. One year is allowed for transfer to regular status which may be attained upon completion of 24 or more units of college work with grade average of C or better. Full credit is allowed for all regular college work completed.

ADMISSION BY EXAMINATION

Certificates of successful examination before the College Entrance Examination Board will be accepted when candidates cannot meet the above scholarship requirements.

ADMISSION OF ADULTS TO SPECIAL STATUS

Adult special status may be granted, in exceptional cases, to persons over 21 years of age who do not fully meet the college entrance requirements provided that ability to do college work is satisfactorily demonstrated through qualifying examinations administered by the college. Such students may be transferred to regular status upon completion of 24 or more units of college work taken in residence with grade average of C or better. Full credit is allowed for all regular college work completed.

Special students are those students carrying courses in the Extended Day Program only or other students who may be granted permission to take limited work. Special students are not eligible as candidates for a degree until all entrance requirements have been met; however, courses satisfactorily completed carry full college credit.

Special graduate students are graduates who have not qualified for admission to graduate status. (See *Admission to Graduate Study*.)

ADMISSION WITH ADVANCED STANDING

Credit earned in recognized institutions of collegiate grade will be evaluated and advanced standing allowed accordingly toward the graduation requirements of this institution. Applicants must show an average grade of C or better for all college work, for the last college attended, and for the last semester of attendance in order to qualify for regular status. A student who enters with advanced standing is one who has completed at least 12 units of passing work in another collegiate institution. However, no applicant may disregard his collegiate record and apply for admission only on the basis of his high school work. No credit earned after a student has accumulated 64 units of work in all types of collegiate institutions may be transferred from a junior college.

An applicant from an unaccredited college may be admitted by action of the Board of Admissions if his college record and qualifying examinations meet the admission requirements. Credits earned in unaccredited colleges or universities may be accepted provisionally, but will not be counted toward graduation requirements until the student has earned 24 semester units in residence with at least a C average.

Students seeking admission with advanced standing must furnish complete transcripts for all work attempted beyond the eighth grade. If an official evaluation is desired, a deposit of \$2 must accompany the application and be received together with all transcripts at least 30 days before the date of registration. At least 45 semester units must be completed before a student may apply for an evaluation.

ADMISSION TO GRADUATE STUDY

Graduate status may be granted to applicants who have regularly applied and have filed official transcripts as evidence of their possession of a bachelor's degree from an accredited institution. Refer to Master of Arts Degree and to Teaching Credentials.

Graduate special status is granted to those who are provisionally admitted to graduate study. It is given to a student (1) who has not completed all admission procedures required for graduate status and (2) to a student whose bachelor's degree was earned at an unaccredited college. A student from an unaccredited college will be eligible for graduate status when he has earned a grade point average of 1.5 on 12 or more units of approved upper division work at this college and has cleared all undergraduate deficiencies.

Admission to candidacy for the master's degree or for a teaching credential may be achieved by meeting the respective specific requirements.

Admission to "200" numbered courses requires graduate status and the meeting of specific prerequisites. A graduate student who may be permitted to enter a "200" numbered course pending full graduate status will be given only upper division credit if graduate status is not achieved by the end of the term in which the course is given.

DEGREES OFFERED

The following degrees are offered by the college: bachelor of arts, bachelor of science, bachelor of education, and master of arts.

EXTENDED DAY PROGRAM

In order to meet the needs of adults in the community for work on the college level, courses are offered in the late afternoon and evening under an extended day program. These include both undergraduate and graduate courses and carry full college credit. Classes offered under this program consist of those courses normally scheduled as part of the regular college offerings and are taught by faculty of the college, but moved to a late afternoon or evening hour to permit in-service teachers, public personnel, businessmen, and others to attend. These courses cover a wide range of academic and educational subjects including education, business administration, public administration, engineering, and the sciences. A special bulletin describing the current offerings is issued each semester and may be obtained upon request from the Office of the Dean of Educational Services.

EXTENSION PROGRAM

In order to serve more adequately the needs of the community, the college cooperates with off-campus organizations and groups in arranging extension classes in response to expressed needs when the group is sufficiently large to finance the instruction. Offerings are made each semester in a number of departments including education, business administration, and the arts and sciences. Classes may be organized at various points within San Diego and Imperial Counties. A minimum of 15 to 20 students is usually required in order to establish a class. The usual class carries two units of credit and meets once a week, either in the late afternoon or evening. The minimum basic fee is \$6 per unit. Interested persons desiring detailed information regarding organization of classes or current offerings should contact the Dean of Educational Services.

AUDITORS

Properly qualified persons may apply for admission to attend classes as auditors. Such students pay the same fees as those who take equivalent work for credit.

TESTS REQUIRED AT REGISTRATION TIME AND LATER

1. A physical examination is required of all students entering or reentering the college after an absence of one semester or more, except that students carrying six units or less are not required to take the physical examination. This examination is scheduled during the orientation period.

2. All entering students are required to take a college aptitude test, and tests for competence in mathematics and in speech. Remedial courses are established in mathematics and speech for students failing these tests. Exceptions may be made for graduate students and for those who register for six units or less and for those registered only in Extended Day classes.

3. All entering freshmen and college transfer students who present less than 12 semester units of college credit must take the regular battery of achievement and aptitude tests, including tests for competence in English, mathematics, and speech. Remedial courses are established for students failing these tests.

4. Students entering teacher education should see admission requirements outlined under Admission to Teacher Education.

LATE REGISTRATION

Students who register after the scheduled registration days are subject to a late registration fee of \$2. Students may be accepted for late registration with the approval of the Registrar within two weeks after scheduled registration days. Registration will be closed after that date. Students failing to complete all registration requirements within the period allowed, as announced in registration instructions, are subject to cancellation of registration.

CHANGES IN REGISTRATION

A student is responsible for any change in his program after the registration book has been filed. Forms for changes in program must be secured at the Registrar's Office. A fee of \$1 is charged.

GENERAL REGULATIONS

INFORMATION

Inquiries relative to the college should be directed to the Registrar's Office.

NUMBERING OF COURSES

Courses numbered 1 through 99 are in the lower division; those numbered 100 through 199 are in the upper division; and those numbered 200 or over are in the graduate division. Courses numbered 300 or over are professional education courses on the graduate level.

SCHOLARSHIP, GRADES, AND GRADE POINTS

The following grades are used in reporting the standing of students at the end of each semester: A, excellent; B, good; C, fair; D, passed; F, failed; I, incomplete; E, conditioned (may be made up to grade of D); Cr. credit (without grade); WP, withdrawal passing; and WF, withdrawal failing.

Grades of I or E must be made up by the end of the next semester; otherwise the grade of F will be recorded.

Grade points are assigned as follows: Grade A, 3 points per unit; B, 2 points per unit; C, 1 point per unit; D, no point per unit; F or WF, no point per unit. Grades of I, Cr, or WP are disregarded in computing grade points. The grade of E is treated as no point per unit until a final grade is recorded. The number of grade points a student has earned in a subject is determined by multiplying the number of points he has received by the number of units allowed. The grade point average is determined by dividing the grade points earned by the number of units attempted. A student must earn at least a C average in all work undertaken at the college to qualify for a degree or a transcript of record with recommendation to another collegiate institution. Any course may be repeated, but not for additional credit; however, only the second grade earned is considered in the student's average.

CLASS, UNITS OF WORK, AND STUDY LIST LIMITS

Students who have completed 0 to 29 units of work are classified as freshmen; 30 to 59 units as sophomores; 60 to 89 units as juniors; and 90 or more as seniors.

A unit of credit represents 50 minutes of lecture or recitation combined with two hours of preparation per week through one semester, or three hours of laboratory or field work in the case of laboratory credit.

Students are not ordinarily permitted to enroll for more than $16\frac{1}{2}$ units of credit toward graduation. A normal semester's program is 16 units.

Certain exceptions to this rule exist. If during the preceding semester the student has carried at least 12 units: (1) and a grade point average of at least 1.5 was earned, $17\frac{1}{2}$ units may be carried for credit toward graduation; (2) and a grade point average of 2.0 was earned, $18\frac{1}{2}$ units may be carried.

Exceptions to these regulations may be secured only through a petition to the Scholarship Committee.

No student may register for less than 12 units (the minimum full-time load) without the approval of the Dean of Instruction.

PROBATION AND DISQUALIFICATION

PROBATION

Any student whose scholarship record shows a cumulative deficit of seven or more grade points below a C average for all college work undertaken or for all work taken at this College will be placed on probation. Probation may be continued provided the student does not increase his grade point deficiency. The student will remain on probation until the grade point deficiency has been reduced below seven for all work undertaken and all work taken at this college.

A student in provisional status who does not reclassify to regular status upon the completion of 24 units of work will be placed on probation. Probation may be continued until the student is reclassified to regular status, provided the grade point deficiency is not increased.

A student with advanced standing from another college who has been admitted on probation by the Board of Admissions will remain on probation until all grade point deficiencies have been removed and an over-all grade point average of 1.0 has been attained.

DISQUALIFICATION

Any student on probation whose scholarship falls below a grade point average of 1.0 in any single semester is disqualified from further attendance at the college.

Any student who fails to pass one-half of the units attempted during any single semester is disqualified from further attendance at the college.

A disqualified student may be reinstated for reasons satisfactory to the Board of Admissions. Applications for reinstatement must be made on forms which may be obtained at the Office of the Registrar.

WITHDRAWALS FROM CLASS

Forms for withdrawal from class may be obtained at the Registrar's Office. If a student withdraws from class during the first seven weeks of a semester, a grade of WP will be recorded upon his permanent record for each class which he has dropped. If he withdraws during the remainder of the semester, either a WP or WF will be recorded, depending on whether he is passing or failing the course at the time. WF is equivalent to a failing grade.

TRANSCRIPTS OF RECORD

Students may secure upon request one transcript of record without fee. Thereafter, a fee of \$1 is charged for each transcript secured upon request. Once a student has matriculated in this college, transcripts from other schools will not be returned, or copies of them made. No fees are charged for transcripts required for military purposes.

Transcripts in the possession of students are to be regarded as unofficial records.

EVALUATIONS

An evaluation of credit for graduation should be requested by a student as soon as 45 units have been earned. Applications may be made at the Office of the Registrar. Students having met all admission requirements for the arts and sciences or teacher education curricula, who are carrying 6 units, or more, of college work in a regular semester, will not be charged the evaluation fee.

An evaluation remains in effect so long as a student completes 12 units of work at San Diego State College within each two-year period beginning with the term immediately following the one in which the evaluation is made (includes summer session term). Any evaluation is subject to changes in requirements imposed on the College by the State Board of Education.

ELIGIBILITY FOR DIRECTED TEACHING

No student shall be eligible for directed teaching (Education 116) leading to the kindergarten-primary, general elementary, general junior high, and special secondary credentials who has not completed 75 units, been admitted to Teacher Education, and whose entire record, as well as for the preceding semester, does not average at least a 1.2 for all credentials except the junior high and general secondary credentials which require a 1.5 grade average.

No student shall be eligible for directed teaching (Education 316) leading to the general secondary credential who has not been admitted to the teacher education program prescribed for admission to candidacy for this credential.

THE HONORS PROGRAM

Any student who at the end of the sophomore year has either attained an over-all grade point average of 2.5 or who has attained a grade point average of 2.75 in his major and not less than 2.0 in fields outside his major, and who has received the approval of his department or departments, may elect the honors program. Such election will enable the student to pursue a special program as outlined below. Any student who feels that his qualifications approximate closely the scholarship standards stated above may request admission to the honors program, subject to the approval of his department or departments, and of the Committee on Honors.

Any student who wishes to apply for entrance into the honors program may do so by filling out cards to be obtained from the Registrar's Office. The application should be approved by the 10th calendar day following the first day of instruction. Units earned by students doing individual study under this plan will be recorded under the symbol 166 and will be subject to the formulated rules dealing with limitations of student load.

Students in the honors program, so far as the facilities of the department and the best interests of the students under its charge allow, shall be treated as benefits their individual needs and as their individual capabilities warrant. They shall be eligible to enroll in honors or special study courses, credit in such courses to be limited to six units per semester unless otherwise recommended by the major department or departments and approved by the Honors Committee. In addition, they shall not be held to regular attendance in the established courses of their departments if, in the opinion of the instructor, the objectives of such courses can be achieved through special assignments and examinations. With the consent of the major department or departments, requirements concerning minors and specific courses or sequences in the major may be modified. Each honor student shall be assigned to a member of his major department for advice and direction.

Students in the honors program who fail to take advantage of the opportunities there offered may at the end of any semester be required to withdraw from the honors program upon notification of the major department or departments. Students not in the honors program who show unusual capacity, may request to be transferred to the honors program contingent upon recommendation of the department and the Committee on Honors at the end of any semester.

THE DEGREE WITH HONORS AND WITH DISTINCTION

Upon recommendation of the Committee on Honors, graduation with honors shall be granted to the upper 10 percent of the graduating class. Each department shall determine which students it will recommend for distinction in the major field at graduation, and report its recommendation to the Committee on Honors for transmission to the faculty.

EXAMINATIONS

No final examination shall be given to individual students before the regular time. Any student 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 not later than the end of the first semester of attendance following that in which the incomplete was given. No exception shall be made to this rule without the approval of the Dean of Instruction and the instructor concerned.

CREDIT FOR EXTENSION COURSES

The maximum amount of extension credit which may be accepted toward the minimum requirements for the bachelor of arts or the bachelor of science degree is 24 semester units, not more than 12 of which may be transferred from another college or university. The term "extension credit" refers to both extension class work and work taken by correspondence. Extension credit does not count in satisfaction of the minimum residence requirement. Extension courses are not accepted for graduate credit toward the master's degree.

CREDIT GRANTED FOR MILITARY SERVICE

The college will grant credit for military service schools in compliance with recommendations made by the American Council on Education.

THE MASTER OF ARTS DEGREE

NATURE OF THE DEGREE

The Master of Arts Degree is offered at San Diego State College in the field of teaching and for other educational services. Students receiving the degree must hold a valid regular day school service California credential other than an emergency or provisional credential; or be a foreign citizen preparing to teach in foreign countries; or be a licensed teacher from another state with one year of experience; or be an approved applicant prepared to teach in institutions not requiring teaching credentials. Students may elect to concentrate in a subject matter major or in education. The following areas of concentration are now available:

Teaching Majors: Chemistry, business education, English, foreign language, health and physical education, history, life science (botany and zoology), physics, psychology, and social science.

Education: Elementary, secondary, administration and supervision, and student personnel services.

School Psychologist and School Psychometrist: Psychology or educational psychology.

REQUIREMENTS

Students who meet the following requirements are eligible for graduation with the master's degree:

- A. 30 units of approved graduate work beyond the bachelor's degree. These 30 units must be completed within the seven years immediately preceding the date when all of the requirements for the degree are completed, excepting that at the option of the college the time may be extended for students who pass a comprehensive examination.
- B. 24 units in residence. Courses taken prior to the summer session of 1946 at San Diego State College, or any other California State College, may NOT be used as graduate work.
- C. Grade point average of 2.0 in all work taken after the bachelor's degree. (Grade of A, 3 grade points; B, 2 grade points; C, 1 grade point; D, 0 grade points).
- D. Completion of the requirements for an approved California teaching credential, or the holding of one, such as the general elementary, general secondary, junior high, special secondary school, and school psychometrist credentials; or be a foreign citizen; or be a licensed teacher in another state, with one year of experience; or be preparing to teach in an institution which does not require a credential.
- E. Satisfactory completion of the candidate's degree program as approved by the Graduate Committee.

ADMISSION TO GRADUATE STUDY

- A. Graduate Status may be granted to applicants who have regularly applied and have filed official transcripts as evidence of their possession of a bachelor's degree from an accredited institution.
- B. Provisional admission to graduate study, Graduate Special Status, may be granted to one who holds a bachelor's degree from an unaccredited college. Such a student will be eligible for Graduate Status when he has earned a grade point average of 1.5 on 12 or more units of approved upper division work at this college and has cleared all undergraduate deficiencies. Special Status is given also to those students who have not completed the regular admission procedures.

ADMISSION TO CANDIDACY

A candidate for the master's degree must qualify as follows:

- A. Apply for admission to candidacy at the Graduate Office. Students should apply during the first graduate term in attendance. Admission cannot be completed, however, until the student has earned 12 units at San Diego State College, or six units if his undergraduate grade point average was 1.5 or better.
- B. Earn and maintain a grade point average of 2.0 on all graduate work.
- C. Satisfactorily complete the following: (1) scholastic aptitude test for graduates, (2) scholastic achievement test, (3) personal interviews and speech test, and (4) health and physical examination, if the applicant does not hold a California teaching credential.
- D. Secure adviser's approval of: (1) a complete program of study for the degree, and (2) a master's project or thesis.

GENERAL REGULATIONS

- A. Extension and correspondence courses are not acceptable toward the degree.
- B. Maximum study load: Summer session, one unit per week of attendance; fall or spring, 15 units per semester of full-time attendance. If employed full time, five units of courses numbered 100-199 or 3 units of courses numbered 200-298.
- C. All candidates shall complete two units in Education 290 and one additional unit in a course in bibliography (290) in the major department.
- D. Each applicant shall complete a project or thesis for which three units of credit are allowed.
- E. The minimum requirement for concentration in a major shall be four units of courses numbered 200-298; six additional units in the major or an approved related field, selected from upper division or graduate courses; a project or thesis; and one unit in bibliography.
- F. 12 units of work must be earned after admission to candidacy.
- G. 10 units must be in courses numbered 200-299.
- H. The examination on the thesis will consist of two conferences between the student and his Thesis Committee; one for planning, which is to be held immediately after the appointment of the committee, and one for evaluation at the time of completing the first draft of the thesis.
- I. The project or thesis must be completed four weeks in advance of the date of the convocation at which the degree is to be conferred.

GENERAL REQUIREMENTS FOR THE BACHELOR OF ARTS AND BACHELOR OF SCIENCE DEGREES

TYPES OF CURRICULA

San Diego State College offers two types of curricula leading to the A.B. and B.S. degrees:

- (1) The curricula leading to the California teaching credentials, and
- (2) The curricula in arts and sciences.

GRADUATION REQUIREMENTS

Any student who enters San Diego State College for the first time, beginning with Summer Session 1951, must complete requirements of 124 units for the A.B. degree or 128 units for the B.S. degree.

Any student who has completed 12 units of work at San Diego State College has the option of being graduated under the requirements in effect for 1950-1951 (120 units) or the requirements to be in effect for 1951-1952. If he chooses the first set of requirements, he must earn 12 units within each two year period, beginning with Summer Session 1951, to remain eligible for graduation under those requirements. Otherwise, a new evaluation for the new requirements will be required.

GRADUATION REQUIREMENTS EFFECTIVE 1951-1952

- (a) A minimum of 124 semester units for the A.B. degree or 128 semester units for the B.S. degree, representing a four-year college course, are required for graduation.
- (b) The last 24 units of work leading to the bachelor's degree must be completed in residence at this college.
- (c) At least a C average (1.0) in scholarship is required in all college work attempted, in all work taken at this college, and in all upper division work in the major field.
- (d) At least 40 upper division units are required for the A.B. degree or at least 36 upper division units for the B.S. degree.
- (e) The state requirements in United States history, Constitution, and American ideals must be completed for the A.B., B.S., or B.Ed. degree.
- (f) All requirements in general education, the major and minor fields and any other requirements made by the college must be completed for graduation.

ENGLISH, MATHEMATICS, AND SPEECH TESTS

Each student must demonstrate competence in the use of English, mathematics, and speech as determined by tests administered by the college. Students failing to pass these tests satisfactorily are required to enroll in special remedial courses designated by each department concerned. Passing the tests or completion of designated courses is a requirement for graduation.

**UNITED STATES HISTORY, CONSTITUTION, AND
AMERICAN IDEALS**

Each student of a state college to qualify for graduation shall demonstrate competence in United States history, Constitution, and American ideals by passing a comprehensive examination on these fields prepared and administered by the college, or by completing appropriate courses. Students transferring from other institutions of collegiate grade, who have already met this requirement, are not required to take further courses or examinations therein.

This graduation requirement may be fulfilled by any one of the following alternatives:

- (1) By satisfactorily passing comprehensive examinations in both United States history, Constitution, and American ideals.
- (2) By satisfactory completion of one of the following groups of courses:
 - (a) History 17A and 17B
 - (b) History 172A and 172B
 - (c) Political Science 71A and 71B
 - (d) Political Science 139A and 139B
- (3) By satisfactorily passing a comprehensive examination in United States history, American institutions and ideals and completion of one of the following groups of courses:
 - (a) Political Science 101
 - (b) Political Science 137A and 137B
- (4) By satisfactorily passing a comprehensive examination in the United States Constitution and completion of one of the following groups of courses:
 - (a) History 8A and 8B
 - (b) History 179A and 179B
- (5) By completion of one of the following groups of courses covering United States history, American institutions and ideals and completion of one of the following groups of courses covering the United States Constitution:

<i>Courses on U. S. History</i>	<i>Courses on U. S. Constitution</i>
(a) History 8A and 8B	(a) Political Science 101
(b) History 179A and 179B	(b) Political Science 137A and 137B
- (6) By completion of the graduation requirement in United States history, Constitution, and American ideals in other institutions of collegiate grade.

LOWER DIVISION AND UPPER DIVISION COURSES

A student is considered to have lower division standing until he has earned 60 semester units, at which time he attains upper division standing.

Courses numbered 1-99 are lower division courses; courses numbered 100-199 are upper division courses.

A student with lower division standing is not eligible to take upper division courses, with the following exceptions: A student in the last semester of his sophomore year who is approaching upper division standing carrying sufficient lower division units to complete the required minimum of 60 units may carry upper division units for the remainder of his study load. A student with sophomore standing may carry upper division courses for upper division credit provided that he has the written approval of the chairman of the department and the Dean of Instruction. This written approval must be filed in the Office of the Registrar on the form "Adjustment of Academic Record." Blank forms may be obtained by the student at the Office of the Registrar.

APPLICATION FOR OFFICIAL EVALUATION

Immediately upon completion of 45 units of work, the student should apply to the Registrar's Office for an official evaluation in terms of his major field and requirements for graduation. An evaluation is a summary of work completed and requirements to be completed for the degree and/or teaching credential. Students who delay in requesting official evaluations may be subject to any additional requirements made by the college from time to time. Students receiving official evaluations who continue uninterrupted attendance at this college are held only to the requirements in effect at the time the evaluation is made, except in cases where the State Department of Education imposes new regulations.

TRANSFER TO GRADUATE SCHOOLS

Attention of students who plan to transfer to the graduate school of the University of California is called to the fact that the university reserves the right to evaluate and possibly reduce the credit in certain work in which this college has given credit toward the baccalaureate degree. Examples of such work would be credit for nurse's training, credit transferred from certain foreign schools, and certain vocational courses in junior colleges.

GENERAL EDUCATION REQUIREMENTS

Forty-five semester units in courses designated in the college bulletin and in the schedule of classes as general education must be completed in addition to courses required in the major field. These courses must be selected from the fields listed below with completion of the minimum number of units required and not exceeding the maximum number of units allowed in each field in order to satisfy the requirement of 45 units in general education. The pattern requirements in general education may be fulfilled by examinations with an accompanying reduction in the 45 units but without course credit.

For specific explanation of the requirements within each field of general education, refer to the explanation of requirements below.

	Minimum	Maximum
(a) Social Sciences	9	12
(b) Natural Sciences	9	12
(c) Literature, Philosophy, and the Arts	6	12
(d) Communication:		
Oral Communication	2	2
Written Communication	3	6
(e) Psychology	3	6
(f) Physical and Health Education:		
Physical Education	2	2
Health Education	2	2
(g) Mathematics	0	6
(h) Foreign Languages	0	6
(i) Family Life Education	0	6

Total number of units required..... 45

EXPLANATION OF REQUIREMENTS

(a) **Social Sciences:** A minimum of nine or maximum of 12 units must be selected from general education courses with at least three units in two or more of the following fields: anthropology, economics, geography (except Geography 1), history, political science, social science, sociology, and similar fields, including the required instruction in United States history, Constitution, and American ideals. **NOTE:** Courses in business, library science, philosophy, or psychology may not be used to satisfy the social science requirement.

(b) **Natural Sciences:** A minimum of nine or maximum of 12 units must be selected from general education courses in the natural sciences. At least one course of not less than three units must be selected in the life sciences from biology, botany, physiology, zoology, and similar fields; and at least one course of not less than three units in the physical sciences from astronomy, chemistry, Geography 1, geology, physics, physical science (except Physical Science 10), and similar fields. At least one course must include laboratory work for a minimum of one unit or the three-hour equivalent. **NOTE:** Courses in engineering, industrial arts, mathematics, or photography, may not be used to satisfy the natural science or laboratory requirement.

(c) **Literature, Philosophy, and the Arts:** A minimum of six or maximum of 12 units must be selected from general education courses in literature, philosophy, and the arts. At least one course of not less than three units must be selected in literature or in philosophy from courses in English, comparative literature, philosophy, or similar fields. Courses in the arts must be selected from the fine arts, including aesthetics, art, and music, or from the practical arts. A maximum of three units may be counted in the practical arts toward general education.

(d) **Oral and Written Communication:** Two units must be completed in oral communication by passing Speech Arts 3. Students failing the Speech Test are required to register concurrently in Speech Arts 2, Oral Communication Laboratory, for one unit of credit which may not be counted toward general education requirements.

A minimum of three units, with a maximum of six units, must be selected from courses in written communication. All students must complete three units in English 1 or 41. Students failing the English Test are required to complete English A, or 40, for two units as a prerequisite for other courses in English. English A or 40 may not be counted toward general education requirements.

(e) **Psychology:** Three units must be completed in Psychology 1, or 40. An additional three units may be selected from other general education courses in psychology.

(f) **Physical Education and Health Education:** Two units must be completed in Health Education 21 and two units must be selected from general education courses in physical education.

The physical education requirement must be satisfied by completion of four semesters of activity courses for a minimum and maximum of two units. **NOTE:** Not more than one activity course may be counted within any semester and an activity course may not be repeated for credit, except courses designated as varsity sports.

(g) **Mathematics:** From zero to six units may be selected from general education courses in mathematics. Students failing the Mathematics Test must complete Mathematics X. This course may not be counted toward the general education requirements. **NOTE:** Any year-course in mathematics completed in high school may not be repeated in college for credit.

(h) **Foreign Languages:** From zero to six units may be selected from general education courses in foreign languages. **NOTE:** Year-courses in foreign languages completed in high school may not be repeated in college for credit, except that the last year-course in any foreign language sequence completed in high school may be repeated in college for a maximum of three units of repeated work to be applied toward graduation.

(i) **Family Life Education:** From zero to six units may be selected from general education courses in family life education. Courses in family life education may be found in the fields of business, health education, home economics, psychology, and sociology.

COURSES IN GENERAL EDUCATION

Courses selected from the following groups may be counted toward the 45 units required in general education, unless the course is specifically required as part of the student's major field and within the limitations indicated in the section on General Education Requirements.

Social Sciences		
Anthropology	History	Social Science
1A-1B	4A-4B	40
54	8A-8B	45
152	17A-17B	
165	121A-121B	Sociology
	172A-172B	45
Economics	179A-179B	50
1A-1B		51
102	Political Science	110
111	1A-1B	135
131	71A-71B	
170	101	
	105	
Geography	111A-111B	
2	137A-137B	
10	139A-139B	
145	150A-150B	

Natural Sciences

Astronomy	Botany	Physical Science
1	150	1
2	160	2
9		41
101	Chemistry	150
105	2A-2B	
	Geography	Physics
Biology	1	2A-2B
1		3A-3B
3	Geology	148
4	2	Zoology
41	3	150
	4	160
		165

Literature, Philosophy, and the Arts

Aesthetics	English	Philosophy
2	2A-2B	1A-1B
5	42	3A-3B
50	52A-52B	101
51	117A-117B	129
102	119A	
138	126B	Practical Arts
150	134	Industrial Arts 5
162	149	Industrial Arts 6
	152A-152B	Home Economics 5
Art		Home Economics 10
6A	Music	Library Science 10
8	7A	Physical Science 10
	10A-B	
Comparative Literature	70A-B (170A-B)	
52A-52B	75A-B-C-D (175A-B-C-D)	
101A	80A-B-C-D (180A-B-C-D)	
104A-104B	85A-B-C-D (185A-B-C-D)	
115	86A-B-C-D (186A-B-C-D)	
138	87A-B-C-D (187A-B-C-D)	
140A-40B	88A-B-C-D (188A-B-C-D)	
142		
152A-152B		

Communication—Psychology

Oral Communication	Written Communication	Psychology
Speech Arts 3	English	1
	1	41
	41	106
	61	145
	106	

Health Education—Physical Education

Health Education		Physical Education (Women)
21		1A-1B
		2A-2B
		3A-3B
Physical Education (Men)		4
1A-1B-1C-1D	9	5
2	10	6
2A-2B	11A-B	11A-11B
3	13	12A-12B
4	14	13A-13B
5	15	14A-14B
6	16	16A-16B
7	17	18A-18B-18C
8	18	19A-19B
	19	20A-20B
	20	21
	23	23
	24	24

Foreign Languages

French	German	Latin
1	1	1
2	2	2
3	3	3
4	4	4
15	15	
16	16	Spanish
115	115	1
116	116	2
		3
		4
		15
		16
		115
		116

Mathematics—Family Life Education

Mathematics	Family Life Education	
B	Business 20	Home Economics 150
G	Health Education 90	Home Economics 170
7A-7B	Home Economics 1	Psychology 106
104	Home Economics 135	Sociology 45
		Sociology 135

BACHELOR OF ARTS DEGREE IN
ARTS AND SCIENCES

MAJOR AND MINOR REQUIREMENTS

One major field is required for the A.B. degree in addition to 45 units in general education courses. At least 40 units of the 124 required for graduation must be in courses carrying upper division credit.

The major in arts and sciences consists of a minimum of 24 upper division units with prerequisite and related lower division courses as prescribed by the department offering the major.

The minor in arts and sciences may be required by the department offering the major. In departments not requiring a minor, the minor is optional with the student. A minor consists of a minimum of 15 units, or maximum of 22, six units of which must be in courses carrying upper division credit.

Majors

Majors in Arts and Sciences are offered in the following fields:

Art	History	Psychology
Botany	Journalism	Romance Languages
Business	Life Science	Social Science
Chemistry	Mathematics	Sociology
Economics	Music	Spanish
English	Physical Education	Speech Arts
French	Physics	Zoology
Geography	Political Science	

Minors

Minors in Arts and Sciences are offered in the following fields:

Air Science	English	Music
Anthropology	French	Philosophy
Art	Geography	Physical Education
Astronomy	Geology	Physics
Bacteriology	Health Education	Political Science
Botany	History	Psychology
Business	Home Economics	Recreation
Chemistry	Industrial Arts	Sociology
Comparative Literature	Journalism	Spanish
Economics	Life Science	Speech Arts
Education	Mathematics	Zoology
Engineering		

General Major in Vocational Curricula

The general major is planned for students who are preparing for vocations requiring a background of general training. General majors are offered in the following curricula: *Home arts, inter-American relations, prelegal, personnel management, public administration, recreation, social work.*

Students not electing one of these curricula who need a general type of training for other vocational objectives must consult with the Dean of Instruction before permission may be granted to follow the pattern for the general major.

In addition to the general education requirements, a student taking the general major must complete 36 upper division units chosen from three fields with not more than 15 units nor fewer than nine units from any one field. A minimum of a year-course in each field must be completed in the lower division as foundation for upper division work in the general major. A minor is not required; however, four additional upper division elective units must be completed to meet the minimum requirement for 40 upper division units for graduation.

All students following the pattern for the general major must obtain forms from the Office of the Dean of Instruction, complete the forms, and have the general major approved by the Dean of Instruction. The forms will then be submitted by the student to the chairman of each of the three departments comprising the general major for approval, revision, or rejection.

BACHELOR OF SCIENCE DEGREE IN ARTS AND SCIENCES

REQUIREMENTS FOR THE MAJOR

One major field is required for the B.S. degree in addition to 45 units in general education courses. A minimum of 128 units is required for graduation. A minor field is not required.

The major consists of a minimum of 36 upper division units with prerequisites and related courses in the lower division as prescribed by the department offering the major. These lower division courses are considered part of the major and may not be counted toward the 45 units in general education, except as may be specified in each major field.

Majors

Majors are offered in the following fields:

Botany	Laboratory Technique	Physics
Chemistry	Life Science	Zoology
Engineering		

PROFESSIONAL CURRICULA IN TEACHER EDUCATION

ADMISSION TO TEACHER EDUCATION

Students who expect to become teachers should apply for admission to teacher education during the first semester of the sophomore year. Students entering the college at the end of the sophomore year will apply at the beginning of the junior year. No courses in education may be taken until admission is granted; any exception to this rule must have the approval of the Chairman of the Education Division. The standards for admission to Teacher Education are different from those for admission to the college; therefore, *admission to the college does not guarantee that the student will be admitted to teacher education.* The following requirements must be met for admission to the teacher education curricula:

1. A satisfactory score on the college aptitude test taken at the college.
2. Evidence of competence in the use of the English language and of satisfactory ability in arithmetic, handwriting, reading, and spelling indicated by having passed the Fundamentals Test. (See college calendar for dates of test which should be taken in the second semester of the *freshman year*.)
3. Assurance of correct speech habits and voice control by having satisfactorily completed a course in corrective speech or by having passed a speech test given by the college.
4. Assurance of physical fitness.
5. If the student is to be a candidate for the general secondary credential or one of the special secondary credentials, he must furnish a recommendation from the chairman of that department stating that the student has ability and shows promise of teaching success in his field and that the department looks with favor upon his application.
6. The completion of the first two years or more of a given curriculum, or its equivalent, and of subsequent work with a grade point average of 1.2 or better for all credentials except the general junior high school or the general secondary, for which shall be required a grade point average of 1.5 or better in all work and 1.75 in the major field.
7. If the student is a candidate for any credential on the secondary school level (general junior high school, special secondary, or general secondary), or for the school psychometrist credential, he must have a satisfactory score on a General Culture Test.
8. If the student is a candidate for the general secondary credential, he must have a tentative program approved by the authorized departmental representative of his major field and the representative of Secondary Education.
9. All applicants need to be approved by an interviewing committee of the college faculty. In its evaluation the committee will consider the following factors established by the State Board of Education: intelligence, scholarship, professional aptitude, personality and character, speech and language usage, and many-sided interests.
10. Candidates for the school psychometrist credential must attain a satisfactory score on a comprehensive examination in psychology.

Transfer Students

Students who have completed two or more semesters of work in another college, upon transferring to San Diego State College, should make application for admission to teacher education as soon as they enroll in the college. Transfer students admitted to the college with either upper division or graduate standing must take the necessary tests for admission to teacher education given during the orientation period at the beginning of their first semester at the college. (See college calendar for dates.)

Transfer Students With Emergency Credentials in Elementary Education

Certain adaptations in the education courses have been made to meet the needs of experienced teachers who hold an emergency credential in elementary education. See the Coordinator of Elementary Education for details.

Advanced Standing in Teacher Education

A student transferring into San Diego State College with advanced standing must complete a minimum of six units of professional education work in residence at San Diego State College before recommendation for a credential, regardless of extent of education work already completed elsewhere. Whenever a transfer student has had teaching experience, the college requires that a statement from the employer(s) be filed with the Registrar.

Evaluation of Credits

After an interval of five years, courses in education are reevaluated and subject to reduction in credit, in light of such new requirements as may have been put into effect and changes in educational procedures. Students formerly in attendance will not be considered to be working in the curriculum until an evaluation and statement of credit has been secured from the Registrar's office. All courses taken either at this college or elsewhere must be approved by an official adviser in order to be credited toward meeting credential requirements or pattern requirements for a degree.

TEACHING CREDENTIALS

San Diego State College is authorized by the State of California to recommend students for the teaching credentials listed below. To be recommended, students must complete, or have completed, the A.B. degree in one of the curricula offered for teachers.

<i>The credential</i>	<i>Subjects and grades for which it is valid</i>
General Elementary	All grades through the eighth.
Kindergarten-Primary	Kindergarten through third.
General Junior High (must be taken with a minor in industrial arts or home economics, or with another credential)	All subjects in grades seven, eight and nine in all elementary or secondary schools.
General Secondary	All subjects in the public schools in grade 7 and above.
Health and Development	Authorizes to serve as supervisor of health in the capacity of a school physician, school nurse, school oculist, school optometrist, school otologist, school audiometrist, school dentist, school chiroprapist, or school dental hygienist.
Special Secondary in Art	Art in all grades of the public schools.
Special Secondary in Business Education	Business education subjects in all grades of the public schools.
Special Secondary in Music	Music in all grades of the public schools.
Special Secondary in Physical Education	Physical education in all grades of the public schools.
Special Secondary in Speech Arts	Speech in all grades of the public schools.
Special Secondary in Correction of Speech Defects	Correction of speech defects in all grades of the public schools.
Special Secondary for teaching the Mentally Retarded Child	To teach mentally retarded children in elementary and secondary schools.
School Psychologist	To serve as school psychologist.

School Psychometrist	To serve as assistant to the school psychologist.
Administration in Elementary Education	Authorizes for certificate to serve as superintendent, deputy superintendent, assistant superintendent, principal, vice principal, and supervisor of instruction in elementary schools.
Supervision in Elementary Education	Authorizes for certificate to supervise instruction in elementary schools.
Administration in Secondary Education	Authorizes for certificate to serve as superintendent, deputy superintendent, assistant superintendent, principal, vice principal, and supervisor of instruction in secondary schools.
Supervision in Secondary Education	Authorizes for certificate to supervise instruction in secondary schools.
Special Subject Supervision	Supervision in the special subject in all grades.

COMBINATION OF CREDENTIALS

Students who seek more than one teaching credential must complete in full the curriculum for each, with only such exceptions as are indicated in the statement of requirements.

A combination of the elementary school credential and the junior high school credential may be secured by completing the requirements for the elementary school credential and the following additional requirements.

- A junior high school teaching major.
- Education 100B in the major field.
- Three units of directed teaching, or equivalent, in a junior high school.
- Education 115B.

A combined program leading to the junior high and general elementary credentials simultaneously is being worked out during 1951-52. Entering students interested in such a program should request an adviser working in this revision.

A combination of the junior high school credential and a special secondary credential may be secured by completing the requirements for the special secondary credential and the following additional requirements:

- A junior high school teaching major, excluding the special secondary credential majors, and a teaching minor. This minor may be the special secondary field.
- Education 100B in the junior high school teaching major.
- Three units of student teaching in the junior high school teaching major.

GENERAL ELEMENTARY AND KINDERGARTEN-PRIMARY CREDENTIALS WITH THE BACHELOR OF ARTS DEGREE

The general elementary and kindergarten-primary credentials are granted with the A.B. degree in teacher education. One major in Education, in addition to 45 units in general education courses, and one teaching minor are required for either credential and the degree. Curricular outlines for these credentials may be obtained from the Coordinator of Elementary Education.

Summary of unit requirements:

	<i>Units</i>
General education	45
Major in education	39-42
Additional units, including minor and pattern requirements for the credential	40-41
Total number of units required for graduation	124

Major for the General Elementary Credential

The major consists of 39 upper division units to include the following courses: Education 102A-102B (6 units); Education 147 (10 units); Education 148 (12 units); Education 115A (2 units); Education 116 (7 units); and Health Education 151 (2 units).

Lower division background courses for the credential include: Social science to include regional geography (9 units); natural science to include physical geography (12 units); literature, philosophy, and the arts to include courses in music fundamentals, music methods, arts and crafts, and design (12-15 units); physical education to include games and activities for the elementary school (2½ units).

Major for the Kindergarten-Primary Credential

The major consists of 42 upper division units to include the following courses: Education 102A-102B (6 units); Education 147 (10 units); Education 148 (12 units); Education 116 (6 units); Education 146 (4 units); Education 115A (2 units); and Health Education 151 (2 units).

Lower division background courses for the credential include: Social science (9 units); natural science (12 units); literature, philosophy, and the arts to include courses in music fundamentals, music methods, piano, arts and crafts, and design (13-15 units); physical education to include games and activities for the elementary school (2½ units).

Minor

A teaching minor for the general elementary and kindergarten-primary credentials consists of a minimum of 15 units in one field, six units of which must be in courses carrying upper division credit. Minors are offered in the following fields.

English	Mathematics
Foreign Languages	Physical Education
General Science	Social Science
Industrial Arts	Speech Arts

The minor in English must include three units in American literature. The minor in foreign languages may be in one or more of the foreign language fields. The minor in general science must be made up of courses selected from the general secondary credential minor in life science and general science or physical science and general science. The minor in social science must include six upper division units in history or in geography and further work in either lower or upper division selected from anthropology, economics, geography, history, political science, or sociology.

A second minor, though not required, may be chosen from art, health education, home economics, industrial arts, music, physical education, or recreation.

Students taking the general elementary or kindergarten-primary credential in combination with a special secondary credential may use the special secondary major for the minor in the elementary or kindergarten-primary fields.

GENERAL JUNIOR HIGH SCHOOL CREDENTIAL WITH THE BACHELOR OF ARTS DEGREE

The general junior high school credential is offered to students with minors in home economics or industrial arts or to students who wish to take this credential in combination with a general elementary, kindergarten-primary, or special secondary credential. The general junior high school credential is granted with the A.B. degree in teacher education.

One teaching major and one teaching minor, in addition to 45 units in general education courses, are required of all students taking this credential. Students not taking this credential in combination with another credential are required to complete 24 units in professional education courses and a minor in home economics or industrial arts. Students taking this credential in combination with another credential should refer to the section of the bulletin entitled: Combination of Credentials.

Teaching Majors and Minors

Teaching majors and teaching minors are offered in the following fields:

Teaching Majors

English
Foreign Languages
General Science
Mathematics
Social Science

Teaching Minors

Home Economics
Industrial Arts
or
The special secondary field for the combination credentials

Summary of unit requirements:

	Units
General education	45
Teaching major	24
Teaching minor	15
Professional courses in education	24
Electives	16
Total number of units required for graduation	124

Teaching Major

A *teaching major* consists of a minimum of 24 units, at least 18 units of which must be in courses carrying upper division credit. Courses in the major field may not be counted toward the 45 units required in general education courses.

A *teaching major in English* shall consist of six units in a lower division year-course, and 18 units in English courses carrying upper division credit, including three units in American literature and three units in Shakespeare. Recommended as part of the major: English 192.

A *teaching major in foreign languages* may include one or more of the foreign languages for a minimum of 24 units, 18 units of which must be in courses carrying upper division credit.

A *teaching major in general science* shall consist of a minimum of 24 units, at least 18 units of which must be in courses carrying upper division credit. Six units are required in a life science and six in a physical science. At least 12 units in one field of concentration are required, six units of which must be in courses carrying upper division credit, to be selected from one of the following fields: bacteriology, botany, chemistry, physics, or zoology.

A *teaching major in mathematics* shall consist of a minimum of 24 units, at least 18 units of which must be in courses carrying upper division credit.

A *teaching major in social science* shall consist of a minimum of 24 units, at least 18 units of which must be in courses carrying upper division credit. There shall be a concentration of 12 units, at least six units of which must be in courses carrying upper division credit, selected from one of the following fields: anthropology, economics, geography, history, political science, or sociology. A year-course in American history must be included in the lower or upper division.

Teaching Minors

A *teaching minor* consists of a minimum of 15 units, six units of which must be in courses carrying upper division credit. Teaching minors are offered in home economics or industrial arts.

A *teaching minor in home economics* consists of a minimum of 15 units to include Home Economics 5 or 62 and 10 or 11 in the lower division; and Home Economics 150 and 170 in the upper division. Three additional units should be chosen in consultation with the adviser in home economics.

A *teaching minor in industrial arts* consists of a minimum of 15 units, six units of which must be in courses carrying upper division credit. Required: Industrial Arts 2 or 21 and 121, and at least one lower division and one upper division course in two of the following areas: woodworking, metalworking, and electricity.

Professional Courses in Education

Professional courses include 24 units in the following: Education 184A-184B-184C, 100B (methods in the major and minor fields), 116; plus Health Education 151.

SPECIAL SECONDARY SCHOOL CREDENTIAL WITH THE BACHELOR OF ARTS DEGREE

The special secondary school credential is granted with the A.B. degree in teacher education in the following fields: art, business education, music, physical education, and speech arts. Majors in these fields are in addition to 45 units in general education courses. Professional courses in education are also required. Certain of these credentials require, in addition, a teaching minor in an academic field. For a statement of requirements in the major and in professional education, refer to the credentials below.

Summary of unit requirements:

	Units
General education	45
Major for the credential	39-58
Professional courses in education	22-26
Minor, if required, and electives	0-18
Total number of units required for graduation	124

TEACHING MINORS FOR THE SPECIAL SECONDARY CREDENTIAL

A teaching minor is required for the special secondary credential in physical education. A minor is optional for the other special secondary credentials. The minor consists of a minimum of 15 units, or maximum of 22, six units of which must be in courses carrying upper division credit. Courses in the minor may include general education courses. Teaching minors are offered in the following fields:

English	Health education	Mathematics
Foreign languages	Home economics	Recreation
General science	Industrial arts	Social science

The following teaching minors include certain requirements:

English: The minor must include three units in American literature.

Foreign languages: The minor must be in one foreign language field.

General science: Courses in the minor are to be selected from the minors for the general secondary credential in life science and general science, or physical science and general science.

Health education: The minor must include Health Education 65, 90, 152, 145 or 153, 199, and Physical Education 151.

Home economics: The minor must include Home Economics 5 or 62 and 10 or 11 in the lower division; and Home Economics 150 and 170 in the upper division. Three additional units should be chosen in consultation with the adviser in home economics.

Industrial arts: The minor must include Industrial Arts 2 or 21 and 121 and at least one lower division and one upper division course in two of the following areas: woodworking, metalworking, or electricity.

Mathematics: See general statement above.

Recreation: Lower division requirements: Two units of physical education activity courses, Physical Education 53, and two units chosen from Art 61B, or fields of dance, drama, or music. Upper division requirements: Recreation 165, 170A-170B, and 184A or 184B. Recommended: Physical Education 151. Consultation with the chairman of the Recreation Department is advised.

Social science: The minor must include courses selected from anthropology, economics, geography, history, political science, or sociology. Six units must be in a year-course sequence and six units are required in American history or three units in American history and three units in political science.

SPECIAL SECONDARY CREDENTIAL IN ART

The major in art consists of 47 units to include the following: Lower division: Aesthetics 5 or 51 and 50 (4 units); Art A-B, 6A-6B, 14A, 61A-61B, and electives in art (20 units). Upper division: Aesthetics 150 (2 units); Art 106A, 112A, 116A, 119A, 194A, and 195 (14 units); electives in art (10 units); and Speech Arts 140A (3 units). Courses in the major may not be counted toward general education requirements.

Professional courses in education consist of 22 upper division units to include the following courses: Education 184A-184B-184C, 116, 100B-A, and Health Education 151.

A teaching minor is not required, but students are urged to complete a minor and the methods course (Ed. 100B) in an academic field. Refer to the teaching minors above.

SPECIAL SECONDARY CREDENTIAL IN BUSINESS EDUCATION

The major in business education consists of 54-56 units to include the following: Lower division: Business 1A-1B, 8, 14A-14B, 18A-18B (21 units); plus the requirements in one of the following sub-fields: (1) Accounting: Nine units selected from Business 2, 21, 24, 25, 27; (2) Accounting-Secretarial: Business 5A-5B (if student has credit for Business 1A-1B or 5A-5B, other courses may be substituted in consultation with adviser); (3) Merchandising: Business 24, 25, 27; (4) Secretarial: Business 5A-5B. (If student has credit for Business 1A-1B or 5A-5B, other courses may be substituted in consultation with adviser).

Upper division: Business 103A, 105A-105B, 108, 190 (15 units); plus the requirements in one of the following sub-fields: (1) Accounting: Business 121, 160A, and 164A; (2) Accounting-Secretarial: Business 121; and 160A and 164A, or 113A-113B; (3) Merchandising: Business 121 and six units selected from Business 185, 186, 187A-187B, Art 107; (4) Secretarial: Business 113A-113B.

Professional courses in education consist of 24 upper division units to include the following courses: Education 184A-184B-184C, 116, 100B-T, one of the following: Education 100B-B, 100B-ME, or 100B-S; and Health Education 151.

A teaching minor is not required, but students are urged to complete a minor and the methods course (Ed. 100B) in an academic field. Refer to the teaching minors above.

SPECIAL SECONDARY CREDENTIAL IN MUSIC

Students are referred to the opening statement and to the general basic requirements given in the section on Announcement of Courses under music. The student planning to receive this credential is held to the general basic music requirements. Students should consult with the chairman of the music department before registering and plan their course in view of individual variations in background and needs. Before admission to the directed teaching program may be granted, credential candidates must have completed Music 146A-146B and must have passed the minimum State credential requirements in voice and piano, with or without credit, which are as follows:

- Piano: Ability (1) to play a Bach two-part invention; (2) to play an artistic accompaniment; (3) to play at sight four-part hymns.
- Voice: Ability (1) to sing at least one song representative of each of the following periods of vocal literature: Classic, Romantic, Modern; (2) to sing at sight any part of a four-part hymn.

Students whose background in piano is inadequate for these requirements must register in their first semester for appropriate private or class instruction, with or without credit; students with insufficient background in voice must register for voice instruction no later than the third semester.

Specific requirements for the major: Lower division: Music 8A-8B, 10A-B-C-D (may be omitted in part or in full upon evidence of satisfactory piano technique), 51A-51B, 58A-58B; four units selected from music courses numbered 70 to 87 (see activity requirements stated in general basic requirements for all music majors), 15A-15B, 20A-20B, 25A-25B, 30A-30B, and 35 (29-33 units). Upper division: Music 101A-101B, 108A-108B, 109A, 146A-B-C; four units chosen from Music 111, 112, 116,

117, 121, 122, 126, 127, 131, 132 or 150A-B-C-D; four units chosen from courses numbered 170 to 187 (see activity requirements stated in the general basic requirements for all music majors) (25 units). Nine units of music history courses may be counted toward general education requirements in Literature, Philosophy, and the Arts.

Professional courses in education consist of 22 upper division units to include the following courses: Education 184A-184B-184C, 116, 100B-Mu, and Health Education 151.

A teaching minor is not required, but students are urged to complete a minor and the methods course (Ed. 100B) in an academic field. Refer to the teaching minors for the special secondary credential listed above.

SPECIAL SECONDARY CREDENTIAL IN PHYSICAL EDUCATION (MEN)

The major in physical education consists of 42 units to include the following: Lower division: Physical Education 53, 63, 64, 72, Health Education 65 (11 units); and Physiology 1A and Zoology 8 (6 units). Upper division: Physical Education 141, 142, 145, 146, 151, 155, 168, 170A or 170B, 177, 190, and two units of physical education electives (25 units).

Professional courses in education consist of 24 upper division units to include the following courses: Education 184A-184B-184C, 116, 100B-PE, 100B in the minor field, and Health Education 151.

A teaching minor is required. Refer to the teaching minors for the special secondary credential listed above.

SPECIAL SECONDARY CREDENTIAL IN PHYSICAL EDUCATION (WOMEN)

The major in physical education consists of 38 units to include the following: Lower division: Physical Education 4, 5, 6, 12A-12B, 53, 72 (8 units); Physiology 1A or Zoology 20, and Zoology 8 (6 units). Pattern requirements for this credential also include the following courses: Physical Education 1A, 2A-2B, and 3A-3B. Upper division: Physical Education 155, 156A-156B, 160, 161, 164A-164B, 168, 170B, 185 and 190 (24 units).

Professional courses in education consist of 24 upper division units to include the following courses: Education 184A-184B-184C, 116, 100B-PE, 100B in the minor field, and Health Education 151.

A teaching minor is required. Refer to the teaching minors for the special secondary credential listed above.

SPECIAL SECONDARY CREDENTIAL IN SPEECH ARTS

The major in speech arts consists of 45 units to include the following: Lower division: Speech Arts 4, 11A, 55A or 55B, 56A, 60A, 81 and three units in speech electives (21 units). Upper division: Speech Arts 150, 159, 176 or 179A; three units selected from 162, 191, or 192A; nine units selected from 108, 118, 140, 154A, 154B, 155, 182, or 183; and three units selected from upper division courses in English literature.

Professional courses in education consist of 22 upper division units to include the following courses: Education 184A-184B-184C, 116, 100B-SA, and Health Education 151.

A teaching minor is not required, but students are urged to complete a minor and the methods course (Ed. 100B) in an academic field. Refer to the teaching minors for the special secondary credential listed above.

SPECIAL SECONDARY CREDENTIAL IN CORRECTION OF SPEECH DEFECTS

This credential is granted only to students who can verify two years of successful teaching experience or four semester hours of superior student teaching completed in an approved teacher education institution and who hold a valid California teacher's certificate, credential, or life diploma of elementary or secondary school grade. Such students must show credit in the following subjects:

	Units
Lower Division	
Psychology 1, General	3
Speech Arts 4, Extemporaneous Speaking, or equivalent	3
Speech Arts 11A or 11B, Interpretation	3
Speech Arts electives	6

Upper Division	
Speech Arts 150, Phonetics	3
Speech Arts 221, Articulatory Problems of Speech or Education 176, Problems of Speech Correction and Articulation	3
Speech Arts 179A-179B or Education 179A-179B, Nervous Speech Disorders	6
Psychology 131, Foundations of Personality	2
One hundred supervised hours of teaching on elementary level in speech correction	3

SPECIAL SECONDARY CREDENTIAL FOR TEACHING THE MENTALLY RETARDED CHILD

An applicant for the special secondary credential for teaching the mentally retarded child must have completed the following minimum requirements:

1. Possession of a valid kindergarten-primary, general elementary, junior high school, or general secondary credential.
2. Completion of 18 semester hours of professional work selected from the following fields:
 - a. Required group: Education 102B or 102C, 181, 182, Art 61A or 161A, and three units of directed teaching of the mentally retarded.
 - b. Additional work to complete the required total of 18 semester hours selected from any of the following electives: Education 176, 144, Psychology 132, 150, or 151.
3. The 18-unit requirement will be reduced 4 units for each year of verified, successful experience in teaching special classes for mentally retarded children, the total not to exceed 12 units.
4. At least six semester units of the 18 required must have been completed within five years of the time application is made for the credential.
5. Twelve units of work must have been completed at this college.

HEALTH AND DEVELOPMENT CREDENTIAL

This credential is offered for school nurses only.

Requirements for this credential include:

1. Possession of a valid license issued by the official California state board or agency in charge of his profession in California.
2. Two years of successful experience in the special service to be named in the credential, except for the school nurse.
3. For school nurse only: The completion of six semester hours of work, including courses in:

- A. Educational Psychology (Education 130)
- B. Administration of the School Health Program (Health Education 153)
- C. Social case work, or rural education or child hygiene.

Pattern to be approved by adviser appointed by the Chairman of Division of Education.

SCHOOL PSYCHOLOGIST CREDENTIAL

Each applicant for recommendation for the school psychologist credential shall have completed the following minimum requirements:

1. Possession of a valid general elementary or general secondary credential.
2. One year of successful teaching experience.
3. Possession of a master's degree in psychology or educational psychology.
4. Each applicant must complete the following course requirements:
 - A. Child development, mental hygiene, and counseling and guidance, including interviewing:

	Units
Education 102B, Child Growth and Development, or Psychology 106, Development Psychology	3
Psychology 132, Personality Adjustment	2
Psychology 152, Introduction to Methods of Counseling or Education 233, Guidance Counseling Techniques	3
 - B. Psychology and education of exceptional children, social case practice including field work and clinical psychology:

Education 181, Exceptional Children	3
Sociology 231, Field Work in Social Case Work	3
Psychology 151, Introduction to Clinical Appraisal or Psychology 211, Advanced Clinical Psychology	3
 - C. Educational psychology and educational measurements including field work and elementary statistics:

Psychology 130, Educational Psychology	2
Education 102A, Measurement and Evaluation in Elementary Education or Education 102D, Measurement and Evaluation in Secondary Education	2
Psychology 104A, Statistical Methods in Psychology	3
 - D. Individual and group mental tests including field work:

Psychology 105A, Introduction to Psychological Testing	3
Psychology 105B, Individual Mental Testing	3
Psychology 205, Advanced Mental Testing	3
 - E. Remedial instruction including laboratory or classroom practice:

Education 144, Diagnosis and Remedial Treatment of Difficulties in Reading	3
Education 176, Problems of Speech Correction and Articulation or Education 179A, Nervous Speech Disorders	3

 These courses include laboratory practice.

SCHOOL PSYCHOMETRIST CREDENTIAL

An applicant for the school psychometrist credential must have completed the following requirements:

1. Possession of a California general teaching credential (General Elementary, Junior High School, or General Secondary) or a four-year college course with a bachelor's degree.
2. Admission to teacher education by all undergraduate students or by graduate students who do not hold a California teaching credential. A special examining committee of members of both the Departments of Education and Psychology is established to interview applicants.
3. As a part of the undergraduate or graduate program the applicant must have completed 18 semester units of training distributed approximately as follows and approved by the credential adviser:
 - A. At least six units selected from the following areas with one course in each area: Education 102A or Education 102D or Education 184C; Education 102B or Education 102C; and Education 130 or Education 184B.
 - B. Six units as follows: Education 181 and Psychology 151.
 - C. Six units as follows: Psychology 105A and Psychology 105B.

CURRICULA LEADING TO THE GENERAL SECONDARY SCHOOL CREDENTIAL**INFORMATION CONCERNING THE GENERAL SECONDARY SCHOOL CREDENTIAL**

A candidate for this credential must complete the requirements for the bachelor's degree from an accredited institution with a major and a minor commonly taught in the secondary schools of California. Admission to candidacy for this credential should be sought during the second semester of the sophomore year or immediately upon admission to San Diego State College with advanced or graduate status. For admission requirements, refer to the section entitled: Admission to Teacher Education.

Students desiring a major in art, business education, music, physical education or speech arts should complete the requirements for the special secondary credential in the respective area desired, then continue with the graduate program. For further details regarding these majors, refer to these credentials.

Students desiring one of the other areas as a major for which San Diego State College is authorized should complete a program leading to the A.B. degree at the end of four years and the General Secondary Credential upon completion of the graduate year requirements outlined on the following pages.

Any person desiring this credential should consult with the Coordinator of Secondary Education during his first semester of attendance at San Diego State College.

RECOMMENDED PROGRAM FOR THE GENERAL SECONDARY SCHOOL CREDENTIAL

1. The following courses should be completed before receiving the bachelor's degree: Health Education 151 (may be taken any semester); Education 184A and 184B (should be taken consecutively). Those persons changing from another vocational objective to education during the senior year may take Education 184A and 184B concurrently by special permission of the Coordinator of Secondary Education, following admission to Teacher Education and a check of the student's qualifications.

	Units
Health Education 151, Health Education for Teachers	2
Education 184A, The Secondary School	4
Education 184B, Development and Learning	4

2. After completion of requirements in (1) above, the following courses may be taken either before or after receiving the bachelor's degree; however, they should be taken concurrently with the first directed teaching assignment unless the student has equivalent teaching experience.

	Units
Education 184C, The Teaching Process	4
Education 100B (methods in major or minor field)	2
Education 116 or 316, Directed Teaching (or equivalent)	3

3. The graduate work must consist of San Diego State College's standard year of work, 24 to 30 semester units of upper division or graduate work, including the following specific requirements:

- (a) At least 12-15 semester units must be completed at San Diego State College.
- (b) At least one course of graduate level work (200 number) in the major field. Most departments require two courses.
- (c) At least six upper division or graduate semester units in fields outside of education.
- (d) Enough units to complete at least a 21 semester unit minor, with a minimum of six semester units of upper division credit in the minor subject area.

For a statement of requirements in the teaching major and minor fields, refer to these majors and minors below.

4. Professional Education during the graduate year: Completion of the courses listed in (1) and (2) above and the following:

	Units
Education 100B in the major or minor field if not taken under (2) above	2
Education 230, Guidance Problems in Secondary Education	3
Education 250, Curricular Problems in Secondary Education	3
Education 316, Directed Teaching in both major and minor fields, or equivalent teaching experience	3-6

MAJORS AND MINORS FOR THE GENERAL SECONDARY CREDENTIAL

The following pages outline tentative programs for the majors and minors for which San Diego State College is authorized to recommend for the General Secondary Credential. Every candidate for the general secondary credential must have a program approved in writing by the departmental representative in the major teaching field and in education as part of admission to the teacher education program.

Teaching Majors

Art
Business Education
English
French
Health Education
Life Science and General Science
Mathematics
Music
Physical Education (Men)
Physical Education (Women)
Physical Science and General Science
Psychology
Romance Languages
Social Studies
Spanish
Speech Arts

Teaching Minors

Art
Business Education
Economics
English
French
Health Education
History
Home Economics
Industrial Arts
Life Science and General Science
Mathematics
Music
Physical Education (Men)
Physical Education (Women)
Physical Science and General Science
Recreation
Spanish
Speech Arts

Outline of Requirements

Major in Art

The requirements for the A.B. degree and the special secondary credential in art should be completed simultaneously. (Students transferring from another institution with the A.B. degree and a major in art should consult with the departmental representative for special program planning.) Refer to the special secondary credential in art. After the above requirements have been met, and the candidate has been accepted by the art staff for graduate work in art, the candidate for the general secondary credential shall complete a graduate year including the following courses in his major:

Graduate Year

Art 200A-200B, Special Problems in Art	Units 4
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Minor in Art

A minimum of 21 semester units required.

Lower Division

Art A-B, Drawing and Composition	2-4
Art 6A-6B, Design	4
Art elective (Art 14A, Lettering, recommended)	3-5
Aesthetics 50, Appreciation and History of Art	2
Aesthetics 5, Art Orientation, or Art 51, Survey of Mexican Art	2

Upper Division

Aesthetics 150, Appreciation and History of Art	2
Art electives	4

Major in Business Education

The requirements for the A.B. degree and the special secondary credential in Business Education must be completed simultaneously. Refer to the special secondary credential in Business Education. After the above requirements have been met, the candidate for the general secondary credential shall complete a graduate year including the following courses in his major:

Graduate Year

Select four units from the following:

Business 203, Office Management	2
Business 213, Problems in Business Education	2
Business 223, Problems of Distributive Business	2
Business 233, Administration and Supervision of Business Education	2
Business 260, Advanced Problem Analysis (Accounting)	2

Minor in Business Education

A minimum of 21 semester units required.

Lower Division

Business 1A-1B, Typewriting	6
Business 14A-14B, Principles of Accounting	6

Upper Division

Nine upper division units should be selected in consultation with adviser in business education

Minor in Economics

A minimum of 21 semester units required.

Lower Division

Economics 1A-1B, Principles of Economics	6
A year course in another social science area	6

Upper Division

Economics 100A, Intermediate Economic Thought	3
Economics electives	6

Major in English

Lower Division

One year-course from lower division English electives	6
Lower division English electives	6

Upper Division

Upper Division English courses selected under the supervision of the departmental representative

Graduate Year

One of the graduate seminars	2
English 192, The English Language (if not taken as an undergraduate) or 191, 195, or an additional seminar	2-3

Minor in English

A minimum of 21 semester units required.

Lower Division

English 1 or 41, Composition	3
English electives	6

Upper Division

English electives (student should consult with departmental adviser)

Major in French

Lower Division

French 1, 2, 3, 4, 5, 6, or equivalents	16
Spanish 1, 2, or German 1, 2, or Latin 1, 2, or their equivalents	6
History 4A-4B (recommended)	

Upper Division

French 101A-101B, Conversation and Composition	6
French 199, Comprehensive Reading and Survey	3
Upper division courses in French with a maximum of six units which may be selected from related fields with the approval of the departmental representative	15

Graduate Year

French 214, Contemporary French Literature	2
French 220, Explication de Textes	2

Minor in French

A minimum of 21 semester units required.

Lower Division

French 1, 2, 3, 4, 5, 6, or equivalents	16
History 4A-4B (recommended)	

Upper Division

French 101A-101B, Conversation and Composition	6
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Major in Health Education

This teaching major may be used as a major for the A.B. degree if the student has been admitted to candidacy for the general secondary credential and has completed at least eight units in professional education courses, including Education 184A-184B, by the date of degree candidacy. The major is designed around the general major, with health education as the field of concentration.

Lower Division

Health Education 65, Community Health	3
Health Education 90, Physiology of Reproduction	1
Home Economics 61A, Nutrition	2
Physiology 1A, Human Physiology	3
Zoology 8, Human Anatomy	3

Upper Division

36 upper division units to include the following:	
Health Education 145, Safety Education and Accident Prevention	3
Health Education 151, Health Education for Teachers	2
Health Education 152, Health Education Programs	3
Health Education 153, Administration of the School Health Program	3
Health Education 199, Special Study in Health Education	3-6
Physical Education 151, Instructor's Course in First Aid	2
Sociology 135, Marriage and the Family	3
Psychology 131, Foundations of Personality	2
Psychology 132, Personality Adjustment	2
Bacteriology 101, General Bacteriology	4
Six to nine upper division units selected from one of the teaching major or minor fields for the general secondary credential, selected with approval of the departmental adviser	6-9

Minor in Health Education

A minimum of 21 semester units required.

Students contemplating advanced degree work should plan to complete an academic minor as well as this minor.

Lower Division

Health Education 21, Principles of Healthful Living	2
Health Education 65, Community Health	3
Health Education 90, Physiology of Reproduction	1

Upper Division

Health Education 145, Safety Education and Accident Prevention	3
Health Education 151, Health Education for Teachers	2
Health Education 152, Health Education Programs	3
Health Education 153, Administration of School Health Program	3
Health Education 199, Special Study in Health	2-3
Physical Education 151, Instructor's Course in First Aid	2

Minor in History

A minimum of 21 semester units required. A year course in United States History must be included.

Lower Division

History 4A-4B, Modern Europe, or 8A-8B, The Americas, or 9A-9B, Pacific Ocean Area, or 17A-17B, American Civilization	6
Electives chosen from anthropology, economics, geography (except Geography 1 or 3), political science, sociology	6
Additional social science electives	0-3

Upper Division

History electives	6-9
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Minor in Home Economics

A minimum of 21 semester units required.

Lower Division

Home Economics 5, Foods	3
Home Economics 10, Clothing Fundamentals, or 11, Advanced Clothing	3
Electives in Home Economics	3-6

Upper Division

Home Economics 105, Family Meals	3
Home Economics 150, Home Management	3
Home Economics 170, Child Care and Development	3
Electives in Home Economics	3-6
Electives for enrichment—see department chairman.	

Minor in Industrial Arts

A minimum of 21 semester units required.

Lower Division

Industrial Arts 2, Mechanical Drawing	3
Select at least three courses from the following:	9
Industrial Arts 31, Elements of Metalwork	3
Industrial Arts 51, Elements of Woodwork	3
Industrial Arts 61, Elements of Electricity	3
Industrial Arts 71, Elements of Transportation Machinery	3

Upper Division

Industrial Arts 121, Advanced Mechanical Drawing	3
Select appropriate upper division electives	6

Major in Life Science and General Science*Lower Division*

Zoology 1A-1B, General	8
Botany 2A-2B, General, or 1, Introduction	4-8
Zoology 20, Human Anatomy and Physiology, or Physiology 1C, Human Physiology	2-3
Chemistry 2A-2B	6
Physics 2A-2B	6
Geology 2, General, Astronomy 1, Descriptive, and Physics 3A-3B, Physical Measurements, recommended.	

Upper Division

Zoology 119, Field Zoology	4
Botany 114, Plant Taxonomy, or Botany 119, Field Botany	3-4
Bacteriology 101, General Bacteriology	4
Botany 155, Genetics, or Zoology 165, Human Heredity	2
Zoology 160, Evolution	2
Zoology 150, Readings in Biology	2
Two courses chosen from the following:	
Zoology 110, 112, 113, 115, 118, 121	7-8

Twelve units in natural science courses may be counted as general education toward the natural science requirement.

Graduate Year

Zoology 200, Seminar	3
Zoology 202, Hydrobiology, or Zoology 213, Advanced Studies in Ornithology	2

Minor in Life Science and General Science

A minimum of 21 semester units required.

Lower Division

Biology 3, Principles, and Biology 4, Plant and Animal Types	6
Physical Science 1 and 2, Introduction	6
Physiology 1C, Human Physiology	2

Upper Division

Botany 114, Plant Taxonomy, Botany 119, Field Botany, or Zoology 119, Field Zoology	3-4
Botany 150, Readings in Biology	2
Zoology 160, Evolution	2

Major in Mathematics

Mathematics 3A, Analytic Geometry	3
Mathematics 3B, First Course in Calculus	3
Mathematics 4A, Second Course in Calculus	3
Additional mathematics or work in related areas	3

Suggested courses in related areas: Astronomy 1, Descriptive Astronomy; Business 2, Mathematics of Finance; Engineering 1A, Plane Surveying; Engineering 21, Descriptive Geometry; Physics 4A, Mechanics of Solids and Fluids; Physics 2A, General.

Upper Division

At least one course in Algebra	3
At least one course in Geometry	3
Mathematics 140A, Mathematical Statistics	3
Mathematics 117, Intermediate Calculus (unless 4B, Third Course in Calculus taken in lower division)	3
Mathematics 104, History of Mathematics	3
Additional upper division units in mathematics or related areas	9

Graduate Year

Four units selected from the following:	
Mathematics 201, Concepts of Geometry from an Advanced Point of View	2
Mathematics 202, Concepts of Algebra from an Advanced Point of View	2
Mathematics 204, Advanced Work in the History of Mathematics	2
Mathematics 224, Functions of a Complex Variable	3

Minor in Mathematics

A minimum of 21 semester units required.

Lower Division

Mathematics D, Trigonometry (or high school equivalent for which pattern credit may be allowed)	3
Mathematics 3A, Analytic Geometry	3
Mathematics 3B, First Course in Calculus	3
One course selected from courses in related areas (See above under teaching major in mathematics)	3

Upper Division

Mathematics 104, History of Mathematics	3
Mathematics electives	6

Major in Music

The requirements for the A.B. degree and the special secondary credential in music should be completed simultaneously. Students transferring from another institution with the A.B. degree and a major in music should consult with the departmental representative for special program planning. Refer to the special

secondary credential in music. After the above requirements have been met, the candidate for the general secondary credential shall complete a graduate year including 4 units selected from the following courses in his major:

Graduate Year

Four units selected from the following:

Music 200A-200B, Special Problems in Music	2-2
Music 203, Musicology	2
Music 206, Composition	2

Minor in Music

A minimum of 21 semester units required. The student is required to demonstrate vocal or instrumental proficiency before admission to the minor program may be granted. As laboratory experience, the student with music as a minor is required to participate in one music activity each semester (in special cases this requirement may be waived by the Chairman of the Music Department). A maximum of four units of credit from music activities may be used toward the total graduation requirement.

Lower Division

Music 8A-8B, Fundamentals, and Harmony	6
Music 10A-10B, Piano (may be omitted in part or in full upon demonstration of proficiency)	2
Music activities chosen from courses numbered 70 to 87	2
Selected from the following: Music 15A, 20A, 25A, 30A	3-5

Upper Division

Music 101A, History of Music	3
Music 146A, Fundamentals of Conducting	1
Music 146B, Instrumental Conducting, or 146C, Choral Conducting	1
Music activities chosen from courses numbered 170 to 187	2
Selected from the following: Music 111, 112, 116, 117, 121, 122, 126, 127, 131, 132, or 150	1

Major in Physical Education for Men

The requirements for the A.B. degree and the special secondary credential in physical education must be completed simultaneously. Refer to special secondary credential in physical education. After the above requirements have been met, the candidate for the general secondary credential shall complete a graduate year including the following courses in his major:

Select two courses from the following:

Physical Education 200, Evaluation Procedures in Health, Physical Education and Recreation	2
Physical Education 201, Developmental Physical Education	2
Health Education 202, Problems in Health Education	2
Physical Education 203, Problems in Physical Education	2
Physical Education 204, Problems in Recreation	2
Physical Education 298, Special Study	2

Minor in Physical Education for Men

A minimum of 21 semester units required.

A student contemplating advanced degree work should plan to complete an academic minor as well as this minor.

Lower Division

Physical Education 53, Physical Education in the Elementary Schools	2
Physical Education 72, Introduction	2
Electives	2-4

Upper Division

Professional activity courses (should be selected in consultation with departmental representative)	4
Physical Education 151, Instructor's Course in First Aid	2
Physical Education 190, Administration of Physical Education in Secondary Schools	3
Physical Education 170A or 170B Recreational Leadership	2
Electives	2-4

Major in Physical Education for Women

The requirements for the A.B. degree and the special secondary credential in physical education must be completed simultaneously. Refer to the special secondary credential in physical education. After the above requirements have been met, the candidate for the general secondary credential shall complete graduate year including the following courses in his major:

Select two courses from the following:

Physical Education 200, Evaluation Procedures in Health, Physical Education, and Recreation	2
Physical Education 201, Developmental Physical Education	2
Health Education 202, Problems in Health Education	2
Physical Education 203, Problems in Physical Education	2
Physical Education 204, Problems in Recreation	2
Physical Education 298, Special Study	2

Minor in Physical Education for Women

A minimum of 21 semester units required.

A student contemplating advanced degree work should plan to complete an academic minor as well as this minor.

Lower Division

Physical Education 1A, Fundamental Skills	1
Physical Education 2A, Folk Dancing	1
Physical Education 3A, Modern Dance	1
Physical Education 4, 5, 6, Team Sports	1½
Physical Education 53, Physical Education in Elementary Schools	2½
Physical Education electives	3½-4½

Upper Division

Physical Education 156A-156B, Sports Methods	4
Physical Education 161, Folk Dancing Materials and Advanced Techniques	2
Electives selected from Physical Education 190, 170B, 164A-164B	5-6

Major in Physical Science and General Science

To obtain a teaching major in physical science and general science for the general secondary credential a student obtaining the A.B. degree in chemistry, physics, or physical science should include in his program the following courses, which will also satisfy the natural science requirements for general education:

Lower Division

Astronomy 1, Descriptive	3
Biology 3 and 4, General, and Plant and Animal Life	6
Geology 2 or 1A, General or Physical	3-4
Recommended electives: Astronomy 9, Geography 3, Geology 3; general education courses in literature, philosophy, and the arts: Physical Science 10, Industrial Arts 5 and/or 6.	

Upper Division

Recommended electives: Botany 119, Chemistry 101, Physics 107, Physics 158, Zoology 119; general education course in social science: Geography 145.

Graduate Year

Select four units from the following:

Chemistry 200, Seminar	2-4
Physics 200, Seminar	2-4

Minor in Physical Science and General Science

This minor consists of 26 units in courses specified below.

Astronomy 1, Descriptive Astronomy	3
Biology 3 and 4, Principles, and Plant and Animal Types	6
Chemistry 2A-2B, or 1A-1B, Fundamentals, or General	6-10
Geology 2 or 1A, General, or Physical	3-4
Physics 2A-2B and 3A-3B, or 4A-4B-4C, General, or Principles	8-12
The following courses are recommended as electives: Astronomy 9, Geology 3, Chemistry 101, Geography 3, Geography 145, Physics 148, Botany 119, or Zoology 119, Physical Science 10, Industrial Arts 5 and 6.	

Major in Psychology

This major can be used for a general secondary credential only if the candidate completes two teaching minors.

Lower Division

Psychology 5 and 6, Principles	6
--------------------------------	---

Upper Division

Psychology 104A, Statistical Methods	3
Psychology 105B, Individual Mental Testing	3
Psychology 131, Foundations of Personality	2
Psychology 132, Personality Adjustment	2
Psychology 151, Introduction to Clinical Appraisal	3
Psychology 160A, Experimental Psychology	3
Electives to be selected with approval of the departmental representative	8

Graduate Year

Psychology 201, Seminar in Psychology	2
Education 230, Guidance Problems in Secondary Education	3

Minor in Recreation

A minimum of 21 semester units required.

Students contemplating advanced degree work should plan to complete an academic minor as well as this minor.

Lower Division

Physical Education activities	2
Physical Education 53, Physical Education in Elementary Schools	2
Electives selected from Art 61B, Crafts, or from the fields of dance, drama or music	2-4

Upper Division

Physical Education 151, Instructor's Course in First Aid	2
Recreation 165, Administration of Community Recreation	3
Recreation 170A-170B, Recreational Leadership	2-4
Recreation 184A-184B, Field Work in Recreation	3-6
Recreation 199, Special Study in Recreation	1-6

Major in Romance Languages**Lower Division**

Spanish 1, 2, 3, 4, 5, 6, or the equivalents	16
French 1, 2, 3, 4, 5, 6, or the equivalents	16
History 4A-4B, or 8A-8B (recommended)	

Upper Division

Spanish 101A-101B, Conversation and Composition	6
French 101A-101B, Conversation and Composition	6
Spanish 199 or French 199, Comprehensive Reading and Survey Course	3
Courses in Spanish literature, French literature or Spanish-American literature, selected with the approval of the departmental representative	9

NOTE: At least nine units of upper division courses must be taken in each language.

Graduate Year

Any two of the following courses:

French 214, Contemporary French Literature	2
French 220, Explication de Textes	2
Spanish 201, Old Spanish	2
Spanish 204, Seminar in Spanish-American Literature	2

Major in Social Science

This teaching major may be used as a major for the A.B. degree if the lower and upper division requirements listed below are completed and the student has been admitted to candidacy for the general secondary credential and has completed at least eight units of professional courses in education by the date of degree candidacy. Twelve units of social science courses in the major may be counted toward general education requirements in social science.

The major must include six units in United States history and work from at least four of the social science fields listed below.

Lower Division

A student must complete a minimum of six units in each of at least three fields he may select from the departments named below:

Economics
Geography
History
Political Science
Sociology and/or Anthropology

Upper Division

A student must complete a minimum of 30 units with the approval of the departmental representative as follows:

- | | |
|--|----|
| 1. A minimum of 12 units from any field named above | 12 |
| 2. A minimum of six units from each of two fields named above, excluding the field selected for the major upper division concentration | 12 |
| 3. Electives from social science fields | 6 |

Graduate Year

Post-bachelor work selected with approval of the departmental representative

Units

4

Major in Spanish**Lower Division**

- | | |
|--|----|
| Spanish 1, 2, 3, 4, 5, 6, or the equivalents | 16 |
| French 1, 2, or German 1, 2, or Latin 1, 2, or their equivalents | 6 |
| History 4A-4B, or 8A-8B (recommended) | |

Upper Division

- | | |
|--|------|
| Spanish 101A-101B, Conversation and Composition | 6 |
| Spanish 199, Comprehensive Reading and Survey | 3 |
| Upper division courses in Spanish with a maximum of six units which may be selected from related fields with the approval of the departmental representative | 9-15 |

Graduate Year

- | | |
|---|---|
| Spanish 201, Old Spanish | 2 |
| Spanish 204, Seminar in Spanish-American Literature | 2 |

Minor in Spanish

A minimum of 21 semester units required.

Lower Division

- | | |
|--|----|
| Spanish 1, 2, 3, 4, 5, 6, or equivalents | 16 |
| History 4A-4B, or 8A-8B (recommended) | |

Upper Division

- | | |
|---|---|
| Spanish 101A-101B, Conversation and Composition | 6 |
|---|---|

Major in Speech Arts

The requirements for the A.B. degree and the special secondary credential in Speech Arts must be completed simultaneously. Refer to the special secondary credential in Speech Arts. After the above requirements have been met, the candidate for the general secondary credential shall complete a graduate year including the following courses in his major:

Graduate Year

Select four units from the following courses:

- | | |
|---|---|
| Speech Arts 260, Seminar in Oral Interpretation | 2 |
| Speech Arts 221, Seminar in Articulatory Problems in Speech | 2 |
| Speech Arts 245, Seminar in Technical Practice | 2 |
| Speech Arts 259, Seminar in Stage Direction | 2 |
| Speech Arts 200, Seminar in History or Oratory | 2 |

Minor in Speech Arts

A minimum of 21 semester units required.

Lower Division

- | | |
|---|-----|
| Speech Arts 3, Speech for Communication | 2 |
| Speech Arts 4, Oral Communication | 3 |
| Speech Arts 11A-11B, Interpretation | 6 |
| Speech Arts 82, Radio Announcing | 3 |
| Electives in speech from 61 or 63 | 0-1 |

Upper Division

- | | |
|--|-----|
| Speech electives (should be selected in consultation with departmental representative) | 6-7 |
|--|-----|

CURRICULA LEADING TO CREDENTIALS IN ADMINISTRATION AND SUPERVISION

CURRICULA LEADING TO CREDENTIALS IN ELEMENTARY SCHOOL ADMINISTRATION AND SUPERVISION

In addition to the general requirements of the State of California for all degrees, the candidate shall meet the following requirements:

- Possess a valid general elementary credential.
- Present written evidence of two years of successful teaching experience in the elementary schools.
- Complete 30 semester units for the administration credential (24 units for the supervision credential) of upper division or graduate work in addition to the holding of the general elementary credential. These units shall include specific courses designated by the State Department of Education and the college.
- Maintain a grade point average of 1.75 in work taken subsequent to receipt of the general elementary credential.
- Complete a minimum of 15 units of work in residence at San Diego State College.
- Make formal application to the Coordinator of Elementary Education.
- Earn the recommendation of the Division of Education.

Students applying for the elementary administration or supervision credentials should register with the office of the Chairman of the Division of Education and confer with the Coordinator of Elementary Education concerning the courses which may be offered in satisfaction of the requirements. Outlines of pattern requirements for either the elementary supervision or administration credentials may be obtained by writing the Coordinator of Elementary Education.

SPECIAL SUBJECT SUPERVISION CREDENTIAL

This credential is available for persons who wish to supervise in a special subject area. Those desiring this credential should see the Chairman of the Division of Education.

CURRICULA LEADING TO CREDENTIALS IN SECONDARY SCHOOL ADMINISTRATION AND SUPERVISION

In addition to the general requirements of the State of California for all degrees, the candidate shall meet the following requirements:

- Possess a valid general secondary credential.
- Present written evidence of two years of successful teaching experience.
- Complete 18 semester units for the administration credential (15 semester units for the supervision credential) of upper division or graduate work after holding a valid general secondary credential. These units must include a specific pattern of courses designated by the State Department of Education and the college.
- Maintain a grade point average of 1.75 on units under (c).
- Complete a minimum of 12 units of work in residence at San Diego State College after holding the general secondary credential.
- Make formal application to the Coordinator of Secondary Education.
- Earn the recommendation of the Division of Education.

Students applying for the secondary administration or supervision credentials should register with the office of the Chairman of the Division of Education and confer with the Coordinator of Secondary Education concerning the courses which may be offered in satisfaction of the requirements. Outlines of pattern requirements for either the secondary supervision or administration credentials may be obtained by writing the Director of Secondary Education.

THE BACHELOR OF EDUCATION DEGREE AND THE GENERAL ELEMENTARY CREDENTIAL

ELIGIBILITY FOR CANDIDACY

Teachers in California public schools with a minimum of 60 semester units of standard college work are eligible for candidacy for the Bachelor of Education degree. The purpose of this degree is to increase the professional competence of teachers in California public schools who do not hold a bachelor's degree. The educational program of each applicant shall be determined on the basis of his previous preparation and of the services he is to render. In the period of professional preparation the applicant shall be guided into those learning experiences designed to meet his cultural and professional needs.

MINIMUM REQUIREMENTS

An applicant for the general elementary credential and the Bachelor of Education degree shall comply with the procedures for application and with the requirements for personal qualifications and general training and shall have completed a program including the following minimum requirements:

- a. A four-year college course of 124 semester units, or the equivalent.
- b. Eighteen semester units, or the equivalent, of professional work in education, constituting an organized program designed to prepare candidates in the following areas:
 - (1) The evolution of educational thought and practice as to the function of the school in a democratic society, with emphasis on the elementary school.
 - (2) The nature of individual growth and development; the psychological aspects of learning; child study, with emphasis on directed observation of children; mental hygiene and personality development; parent education; guidance practices.
 - (3) The selection and arrangement of learning experiences, instructional materials, learning methods and appraisal techniques related to all statutory requirements for teaching, including reading, writing, spelling, language study, arithmetic, geography, history of the United States and of California, civics including the Constitution of the United States, music, art, physical education, healthful living, morals and manners, safety education, and fire prevention.
 - (4) The use of audio-visual aids in instruction.
- c. Directed teaching in the elementary school, eight semester units, or the equivalent, under the supervision of superior teachers in actual classroom situations of the elementary school level.
- d. Sixty-one semester units or the equivalent in basic subject fields, distributed approximately as follows:
 - (1) *Social Studies.* Twelve semester units, or the equivalent, with emphasis upon current economic, political, and social problems and world history and geography, sociology and anthropology. The legal requirement in United States Constitution and American history, institutions, and ideals shall be included in the social studies program.
 - (2) *Science.* Twelve semester units, or the equivalent, in the fields of physical and biological science, with emphasis upon the study and use of the environment.

- (3) *English*, including speech. Twelve semester units, or the equivalent, including oral and written expression, world literature, children's literature, dramatics, detection and correction of speech defects, and the use of books and libraries.
- (4) *Mathematics.* Three semester units, or the equivalent, including subject matter and techniques essential in the teaching of mathematics in the elementary school.
- (5) *Health and Hygiene.* Three semester units, or the equivalent, including personal hygiene, subject matter and techniques essential in health education to elementary school pupils.
- (6) *Physical Education.* Three semester units, or the equivalent, including subject matter and techniques essential in the teaching of physical education to elementary school pupils.
- (7) *Music.* Eight semester units, or the equivalent, including content and techniques appropriate for the elementary school.
- (8) *Art.* Eight semester units, or the equivalent, in graphic art and industrial arts applicable to learning experiences appropriate for elementary school children.

- e. The remaining units necessary to complete the requirements for the Bachelor of Education degree shall be distributed among those offerings of the institution that best serve the cultural and professional needs of the candidate, except that a course or the equivalent in fire prevention must be included.

EVALUATION OF TEACHING EXPERIENCE AND SUBJECT MATTER FIELDS

- a. A candidate with two or more years' teaching experience may be awarded a maximum of 8 semester units of credit, or the equivalent, in directed teaching provided he demonstrates satisfactory skill to a representative of the institution under whose direction he is completing his degree program, or provided other conditions set by the institution to insure classroom skill are met. This credit shall not be applied until the candidate has completed at least 112 semester units, or the equivalent, of his program.
- b. Credit toward the B. Ed. degree may be secured by passing comprehensive examinations in the fields of study mentioned in paragraphs (b) and (d) above.

INSTITUTION AND RESIDENCE REQUIREMENTS

- a. A minimum of 30 semester units, or the equivalent, must be secured from the college conferring the degree.
- b. A least 12 semester units, or the equivalent, must be earned in campus residence course work at the college conferring the degree and must be secured after completion of at least 90 semester units, or the equivalent.
- c. A maximum of 30 units may be secured by examination.

PREPROFESSIONAL AND VOCATIONAL CURRICULA

Preprofessional and vocational curricula, ranging in length from two to four years of collegiate work, are offered. Curricular outlines of preprofessional study, which are presented on the following pages, meet the typical requirements for admission to professional schools. Students expecting to complete their professional training at other institutions should modify the suggested outlines of study to meet the requirements of the professional schools of their choice. Curricular outlines for complete training leading to vocations are also presented on the following pages.

Curricular outlines are presented for the following:

Preagricultural	Prelegal
Business	Life Science Vocational
Predental	Premedical
Engineering	Personnel Management
Home Arts	Prepharmacy
Inter-American Relations	Public Administration
Journalism	Recreation
Laboratory Technique	Presocial Work

Students planning to enter professional or vocational occupations in forestry, nursing, optometry, or veterinary science may obtain assistance from advisers in these areas in planning lower division courses leading to further education in these fields.

PREAGRICULTURAL CURRICULA

These curricula are provided for students who plan to enter the field of agriculture to enable them to obtain basic science and general education courses before transferring to an agricultural institution. These students should ascertain the lower division requirements of the college to which they expect to transfer and include such requirements in the plan suggested below.

Students in high school preparing to study agriculture should include the following subjects: Elementary algebra, plane geometry, intermediate algebra, trigonometry, chemistry, physics, mechanical drawing, and three years of one foreign language, if required by the college to which the student expects to transfer.

Curriculum in Plant Science: Freshman year, physical education activities, Health Education 21, Chemistry 1A-1B, Botany 2A-2B, Physics 2A-2B, English 1, and Speech Arts 3 (32 units); sophomore year, physical education activities, Economics 1A-1B, English 2A or other literature course, Chemistry 101 and 102, Geology 1A or 2A, Bacteriology 1, Zoology 1A and Psychology 1 (32 units).

Curriculum in Animal Science: Freshman year, physical education activities, Chemistry 1A-1B, Zoology 1A-1B, Physics 2A-2B, English 1, Speech Arts 3, Health Education 21 (32 units); sophomore year, physical education activities, Psychology 1, English 2A or other literature course, Economics 1A-1B, Bacteriology 1, Botany 1, Chemistry 101 and 102, Zoology 20 or 8, and 100 (34 units).

Students should consult with the adviser in the preagricultural curriculum for selection and arrangement of courses.

BUSINESS CURRICULA

The Division of Business consists of three departments: Accounting and Business Management; Marketing; and Business Education, Secretarial and Office Management. Each department offers a major in business with fields of specialization within the department.

The Department of Accounting and Business Management offers specialization in accounting, banking and finance, business management, insurance, and credit management. The Marketing Department offers specialization in marketing and in personnel

management. The Business Education, Secretarial and Office Management Department offers specialization in secretarial and office management and in teacher education leading to the special secondary and general secondary school credentials.

The first two years of the business curricula are introductory. During this period the student acquires a basis for further study and an understanding of the place that business fills in modern economic life. There are some differences in the lower division requirements in the various fields of specialization. A selection of the field of specialization should be made as early as possible by the student. A student may transfer from one field of specialization to another, but with possible loss in time because of the differences in requirements among the various fields. The student follows a program of studies that is designed to provide a vocational ability in at least one area.

Refer to the departments in the Division of Business for specific requirements in the business major with fields of specialization. Students should consult with the departmental adviser in selection and arrangement of courses.

PREDENTAL CURRICULUM

Candidates for a degree in dentistry should ascertain the entrance requirements of the dental college to which they expect to transfer and should make whatever changes in the following typical requirements that may seem desirable in satisfying the requirements of the specific dental college.

The curriculum for dental hygiene is essentially the same as for pre dentistry.

High school students planning to enter dentistry should include in the high school program the following subjects: Elementary algebra, plane geometry, intermediate algebra, chemistry, physics, mechanical drawing, and three units in one foreign language if required by the college to which a student expects to transfer.

Course of Study for Predental Curriculum: Freshman year, physical education activities, Health Education 21, Psychology 1, Speech Arts 3, English 1, English 2A or other literature course, Chemistry 1A-1B, Physics 2A-2B and 3A-3B (32 units); sophomore year, physical education activities, Chemistry 5A, Zoology 1A-1B, Mathematics C and D, social science including courses in U. S. history and Constitution, and electives in general education (32 units).

The following courses for a third year in preparation for dentistry are suggested for students who fail to receive acceptance from a dental college after completing the prescribed 60 units: Chemistry 101 and 102; Zoology 100 and 106; Art 119A, Psychology 11; additional courses in general education.

ENGINEERING CURRICULA

The engineering program is designed to give a student a sound training in the fundamentals of general engineering with a minimum of specialization, and at the same time provide the broad training and experiences which constitute a liberal education. The program leads to the degree of Bachelor of Science in Engineering.

Students graduating in engineering will find employment in various functions of their chosen field. For example, a student who has selected the mechanical engineering option may find employment in the operation of a steam plant, or in the application and sales of construction equipment.

The program is intended to provide the essential training in those functions which are within the scope of a four year program. These, specifically, are the production, operation, maintenance, service, sales, and management functions of engineering. Curricula and individual courses are designed to emphasize these functions. Students who desire training for work in such fields as research, design, and development should plan to complete their education at a University.

FIELDS OF SPECIALIZATION

In the freshman and sophomore years all students are expected to take the courses listed below. In the junior and senior years optional programs are available which provide limited specialization in aeronautical, chemical, civil, electrical, electronic and mechanical engineering, and in engineering economics. Normally, students are expected to elect one of these basic options. In certain cases equivalent programs may be worked out which will better suit the needs of an individual student.

HIGH SCHOOL PREPARATION

The high school program should include the following subjects: Elementary algebra, 1 unit; plane geometry, 1 unit; intermediate algebra, 1 unit; solid geometry, $\frac{1}{2}$ unit; trigonometry, $\frac{1}{2}$ unit; chemistry, 1 unit; physics, 1 unit; mechanical drawing, 1 unit.

GENERAL REQUIREMENTS

Courses must be included to satisfy all requirements for the B.S. degree. See section of the bulletin entitled: Bachelor of Science Degree in Arts and Sciences. The curricula given below specify the requirements for the indicated options and include recommended electives to fulfill the requirements for general education. General education courses are prefixed with a *.

Lower Division Requirements for All Engineering Students

Units			Units		
Freshman Year			Sophomore Year		
1st Sem.	2d Sem.		1st Sem.	2d Sem.	
* P.E. activities	$\frac{1}{2}$	$\frac{1}{2}$	* P.E. activities	$\frac{1}{2}$	$\frac{1}{2}$
Math. 3A-3B	3	3	Math. 4A-4B	3	3
Physics 4A	—	4	Physics 4B-4C	4	4
Chem. 1A-1B	5	5	* Econ. 1A-1B	3	3
* English 1	3	—	Engr. 21 and 23	3	2
* Speech Arts 3	2	—	Restricted electives	3	3-4
* Biology 1	—	3	Aero., Electrical, and		
* Psychology 1	3	—	Mech.: Engr. 1A, 22		
	16 $\frac{1}{2}$	15 $\frac{1}{2}$	Chem.: Chem. 5, 101		
			Civil: Engr. 1A-1B		
			Econ.: Bus. 14A-14B		
			Electron.: * Lit. or Phil.		
			and elective		
				16 $\frac{1}{2}$	15 $\frac{1}{2}$ -16 $\frac{1}{2}$

* General education courses. (Nine additional pattern credits allowed for chemistry and physics to apply toward general education requirements.)

Upper Division Requirements for All Engineering Students

Units			Units		
Junior Year			Senior Year		
1st Sem.	2d Sem.		1st Sem.	2d Sem.	
Engr. 100A-110B	3	3	† * Literature or Philosophy	—	3
Engr. 102A-102B	3	3	* Econ. 170	3	—
Engr. 127, 140	3	3	Engr. 105	—	3
* Health Educ. 21	2	—	Engr. 199	—	2
* Ind. Arts 5	3	—	Engr. 180	—	3
† * Soc. Sci. elective	—	3			
	14	12		3	8-11

† Chemical engineers take social science elective in first semester of senior year. All students should remove U. S. history-Constitution requirement by examination or by taking appropriate social science courses.

† * Electronics engineers take literature or philosophy first semester of sophomore year.

Additional requirements for various fields of specialization:

Aeronautical Engineering

Units			Units		
Junior Year			Senior Year		
1st Sem.	2d Sem.		1st Sem.	2d Sem.	
Engr. 101A	2	—	Math. 118A	3	—
Engr. 141	—	2	Engr. 122	4	—
Engr. 101B	—	2	Engr. 129, 106	2	2
	16	16	Engr. 142, 156	3	3
				15	16

Chemical Engineering

Units			Units		
Junior Year			Senior Year		
1st Sem.	2d Sem.		1st Sem.	2d Sem.	
Engr. 141	—	2	Math. 118A	3	—
Chem. 110A-110B	3	3	Engr. 129, 106	2	2
Elective	—	2	Chem. 144A-144B	3	3
	17	16	Chem. 102	2	—
			* Soc. Sci. electives	3	—
				16	16

Civil Engineering

Units			Units		
Junior Year			Senior Year		
1st Sem.	2d Sem.		1st Sem.	2d Sem.	
Engr. 130	3	—	Math. 118A	3	—
Engr. 141	—	2	Engr. 142, 106	3	2
Elective	—	2	Astronomy 3	3	—
	17	16	Elective	4	3
				16	16

Electrical Engineering

Units			Units		
Junior Year			Senior Year		
1st Sem.	2d Sem.		1st Sem.	2d Sem.	
Engr. 101A-101B	2	2	Math. 118A	3	—
Engr. 141	—	2	Engr. 129	2	—
	16	16	Physics 102	3	—
			Physics 107	2	—
			Elective	3	4
				16	15

Electronics Engineering

Units			Units		
Junior Year			Senior Year		
1st Sem.	2d Sem.		1st Sem.	2d Sem.	
Engr. 104	—	3	Math. 118A	3	—
Physics 102	3	—	Engr. 101A-101B	2	2
	17	15	Engr. 124	—	2
			Engr. 150	—	3
			Physics 107	2	—
			Physics 122	2	—
			Physics 152	2	—
			Elective	3	—
				17	15

Engineering Economics

Units			Units		
Junior Year			Senior Year		
1st Sem.	2d Sem.		1st Sem.	2d Sem.	
Elective (to include at least one of the following laboratory courses: Engr. 101A, 101B, 106, 129, 141)	2	4	Econ. 150, 140	3	3
	16	16	Econ. 133	3	—
			Business 18A	3	—
			Business 121	3	—
			Elective	—	3
				15	17

Mechanical Engineering			
Units		Units	
Junior Year	1st Sem. 2d Sem.	Senior Year	1st Sem. 2d Sem.
Engr. 101A-101B	2 2	Math. 118A	3 -
Engr. 141	- 2	Engr. 122, 106	4 2
	16 16	Engr. 128, 145	3 3
		Engr. 129	2 -
			15 16

HOME ARTS CURRICULUM

The Home Arts curriculum is designed to meet the needs of those students who wish to apply their knowledge to the various problems of home living. This curriculum is based on the *general major* in arts and sciences with a field of concentration in Home Economics combined with two other fields to be selected by the student in consultation with the home arts adviser and the Dean of Instruction. (Refer to the General Major in the section of the bulletin entitled: Bachelor of Arts Degree.) By appropriate selection of courses, the student may prepare for several related fields, such as radio, community recreation, home service in industry, merchandising, and social work.

Summary of unit requirements:

	Units
General education	45
Preparation for the general major	26
General major (upper division)	36
Electives	17

Total units required for graduation 124

Specific requirements for the major: Lower division: Home Economics 1, 5, 10, 55, 61A-61B; Sociology 50 and 51; six lower division units in a third field. Upper division: 15 upper division units to be selected from Home Economics 100, 101, 105, 135, 150, 160A-160B, 170, with the approval of the adviser in home arts; nine upper division units to be selected from a second field; and 12 upper division units to be selected from a third field. A minimum of six lower division units is usually required in each field of the general major as preparation for upper division work.

Students should consult with the adviser in the home arts curriculum for selection and arrangement of courses.

INTER-AMERICAN RELATIONS

This curriculum, designed around the general major, provides (1) a basis for a more effective understanding of the opportunities and problems of international relations in the western hemisphere; (2) facilities for a basic education and training for a business or professional career involving international relations; (3) undergraduate preparation for the comprehensive examinations required for appointment in the Foreign Service, Department of State.

High school students preparing to enter this area of Foreign Service should include in the high school program three years in one foreign language, preferably Spanish.

Students should consult with the adviser in Inter-American Relations regarding an appropriate program of studies.

JOURNALISM CURRICULUM

The purpose of the journalism curriculum is to prepare students for positions on mass communications media and to offer to teacher candidates background for educational work in journalism. The four-year program contemplates that in addition to professional training, majors shall acquire a broad background in such related fields as English, sociology, psychology, political science, economics, and history. All majors are required to take survey courses in newspaper and radio techniques and

photography. Introductory courses in mass communications research are offered. The program is so designed that during the final two years, majors may take specialized work in newspaper reporting and editing, magazine writing, advertising and radio production. Producing the campus newspaper serves as a laboratory for students. Arrangements are made for students to serve internships on daily and weekly newspapers, industrial magazines and radio stations.

Summary of unit requirements:

	Units
General education	45
Preparation for the major	12-15
Major (upper division)	24
Electives	40-43

Total units required for graduation 124

Specific requirements for the major: Lower division: Journalism 51A-51B, Physical Science 10, Speech Arts 81, and Business 2A, or proficiency in typing. Upper division: 24 upper division units in journalism including Journalism 102 and 151. A minor is not required.

LABORATORY TECHNIQUE CURRICULUM

The laboratory technique curriculum is offered with the B.S. degree. This curriculum, with modifications for the types of licensures, is provided to satisfy the academic requirements to qualify for the examinations given by the State of California Public Health Department for Public Health Bacteriologist, Clinical Laboratory Technician, and Medical Technologist. If the curriculum outlined by this College is followed, only six months of apprenticeship are required to complete the qualifications for the licensing examinations for Public Health Bacteriologist and Clinical Laboratory Technician. Five years of experience as a Clinical Laboratory Technician are necessary to qualify for the examination for licensure as a Medical Technologist.

Summary of unit requirements:

	Units
General education	45
Preparation for the major required for State licensure exclusive of General Education courses	23-37
Major (upper division)	36-44
Electives	2-24

Total number of units for graduation 128

Specific requirements for the major: Lower division (including courses in General Education, but required for licensure): Chemistry 1A-1B, * Chemistry 5, Biology 3 and 4 or Zoology 1A-1B, Bacteriology 1 or 101, Physiology, 1A and 1C, * Physics 2A and 3A. Upper division: 36 upper division units, including Chemistry 101, * Chemistry 114, 115, 116, Bacteriology 102, 103 and one or more courses selected from Bacteriology 105, 106 or 107, * Zoology 109, Zoology 128, 104, 126, and 108, and additional electives to complete the major. Twelve units of science courses in the major field may be counted as general education in natural science.

Students should consult with the adviser in the Laboratory Technique Curriculum for selection and arrangement of courses.

* These courses are not required for the Public Health Bacteriologist license.

PRELEGAL CURRICULUM

The entrance requirements of schools of law range from two years to three and four years of prelegal work. The lower division requirements of the arts and sciences curricula should be met in full whether the prelegal curriculum extends over a period of two, three, or four years.

The following curriculum is designed to meet the recommendations of standard American schools of law for a broad and liberal education. For the majority of pre-legal students a general major with concentration in economics, political science, and history, or a major-minor combination in these fields will constitute the most effective preparation for later professional study in law and for later activities in the field of business.

Preparation for the major: Lower division: Business 14A-14B, Economics 1A-1B, Political Science 71A-71B or 1A-1B, and a year-course in history. Recommended: six units from Philosophy 1A-1B, 3A-3B, or 20.

Upper Division

In the junior and senior years the student will plan his course with the counsel of his adviser in terms of the field of law in which he plans to work, but keeping in mind the entrance examinations and other requirements for admission to schools of law. The course selected will be drawn from the preferred and recommended lists below. Optional courses, that is courses not found in the preferred and recommended lists, may be taken to satisfy the general major pattern requirement, but only with the consent of the student's prelegal adviser. These courses are not to be considered as general electives.

The student must complete a master plan approved by the prelegal adviser and filed with the Registrar.

Preferred List

Economics 133, 150, 151, 170.
History 151A-151B, 172A-172B, 175A-175B.
Philosophy 121, 129.
Political Science 139A-139B.
Psychology 145.
Sociology 173, 174.

Recommended List

Economics 102, 110, 111, 128, 131, 135, 142, 171, 172, 185, 190, 195.
English 106, 120, 126A-126B, 129, 131, 192.
History 111A-111B, 121A-121B, 143A-143B, 175A-175B, 179A-179B, 181A-181B.
Philosophy 101, 111A-111B, 130.
Political Science 105, 111A-111B, 120, 121, 122, 140A, 140B, 142, 143, 150A-150B, 152, 153, 154, 158A-158B, 198.
Sociology 152, 170, 174, 187.
Speech Arts 162, 191, 192.

LIFE SCIENCE VOCATIONAL CURRICULA

Vocational curricula are offered for the fields of entomology, fish and game, and wild life. Requirements for these curricula are the same as for the B.S. degree in zoology; the specialization for a particular occupation lies within the upper division electives of the B.S. degree program.

Students in high school planning to enter any of these life science curricula should include in the high school program the following subjects: Elementary algebra, plane geometry, intermediate algebra, trigonometry, chemistry, and physics. Three years of French or German recommended.

Courses in Entomology, Fish and Game, and Wild Life: Courses in the field of specialization may be selected from the following:

Botany 105, Taxonomy of Plants
Chemistry 101, Organic Chemistry
Economics 140 or
Psychology 104, Statistics
Political Science 140A-140B, Public Administration
Zoology 101, General Physiology
Zoology 104, Microtechnique
Zoology 113, Ornithology

Zoology 115, Cold Blooded Vertebrates
Zoology 118, Mammalogy
Zoology 121, General Entomology
Zoology 122, Systematic Entomology
Zoology 125, Economic Entomology
Zoology 126, Medical Entomology
Zoology 128, Parasitology
Zoology 153, Economic Biology

Students should consult with the adviser in the life science curricula for selection and arrangement of courses.

PREMEDICAL CURRICULUM

The entrance requirements of medical colleges ordinarily range from three to four years of premedical work. The lower division requirements of the liberal arts curricula include the general requirements of standard medical colleges and should therefore be met in full whether the curriculum extends over a period of three or of four years. All plans for premedical work should include an arrangement of courses to meet the requirements of the medical college which the student expects to enter.

Students ordinarily elect to concentrate in chemistry and zoology with a major in one and a minor in the other. Requirements for these majors and minors are described under these departments.

High school students planning to enter medicine should include in the high school program the following subjects: Elementary algebra, plane geometry, intermediate algebra, chemistry, physics, two or three years of French or German. Two years of Latin also recommended.

Students should consult with the adviser in the premedical curriculum for selection and arrangement of courses.

PERSONNEL MANAGEMENT CURRICULA

A student desiring to prepare for personnel management may follow one of the three plans outlined below. Emphasis is placed on different areas, depending upon the vocational objective. A student preparing for graduate work in personnel management should consult with the adviser in his selected field in choice and arrangement of courses. Courses in the major are in addition to 45 units in general education courses.

Business Personnel Management: The major is designed around the general major with the three fields of study in business, economics, and psychology. Lower division requirements: Business 14A and 20, Psychology 6, and Economics 1A-1B (15 units). Upper division requirements: Business 121, 153, 154, 198A; Economics 150, 151, 185; Psychology 104A, 105A, 121, 131, 152 (36 units). Other courses in business may be substituted for Business 14A and 198A on the basis of individual counseling. Four additional upper division units must be completed for graduation. It is recommended that these units and additional electives be chosen from the following: Business 186; Psychology 104B, 122, 132; Sociology 110, 170, 185; Political Science 71A, 71B and 143.

Industrial Personnel Management: The major is in the field of psychology with a minor in business, economics, political science, or sociology. Lower division requirements: Psychology 1, 5, and 6; six units in biology, physiology, and/or zoology; three units in philosophy; and six units in anthropology and/or sociology (24 units). Upper division requirements: 24 upper division units to be selected in consultation 131, 132, 145, 152, 160B, and electives in psychology to be selected in consultation with the departmental adviser. Recommended courses in departments other than psychology: Business 103A, 153 and 154; Economics 1A-1B, 100A, 150, 151, 170, and 185; Philosophy 20; Political Science 144 and 145; Sociology 50, 51; and six units selected from Sociology 135, 170, 180, 190; and Speech Arts 4.

Public Personnel Management: The major is designed around the general major with the three fields of study in political science, economics, and psychology. Lower division requirements: Political Science 71A-71B, Economics 1A-1B, and Psychology 152 (36 units). Upper division requirements: Political Science 140A-140B or 147A-147B, 144, 145, 146, 198; Economics 150, 151, 185; Psychology 104A, 105A, 121, 131, 152 (36 units). Another political science course may be substituted for Political Science 198 on the basis of individual counseling. Four additional upper division units must be completed for graduation. It is recommended that these units and additional electives be chosen from the following: Business 121; Economics 131; Political Science 142, 143.

PREPHARMACY CURRICULUM

Some colleges of pharmacy offer a four-year curriculum, others a six-year curriculum of pharmacy. Students should ascertain the extent and requirements of the curriculum of the college of pharmacy they expect to enter. Colleges of pharmacy which offer the four-year curriculum normally permit not more than one year of credit in time for work completed in an institution other than a college of pharmacy. Colleges of pharmacy which offer a six-year curriculum normally permit not more than two years of credit in time for work completed in an institution other than a college of pharmacy. California state law requires that an applicant for the State Board Examination in Pharmacy must be a graduate of a recognized college of pharmacy which requires a resident attendance of not less than four years.

The high school program should include the following subjects: Elementary algebra, 1 unit; plane geometry, 1 unit; intermediate algebra, 1 unit; trigonometry, $\frac{1}{2}$ unit; chemistry, 1 unit; physics, 1 unit; foreign language, 2 units.

At San Diego State College the following prepharmacy curricula are offered:

Course of study for the four-year curriculum: Freshman year, physical education activities, English 1 and a literature course, Chemistry 1A-1B, Zoology 1A-1B, Botany 1, Mathematics 3A or 1, and electives (32 units).

Course of study for the six-year curriculum: Freshman year same as for the four-year curriculum. Sophomore year, physical education activities, foreign language if needed, social science including U. S. history and Constitution courses, Physics 2A-2B and 3A-3B, Psychology 1, Health Education 21, and electives (32 units).

Students should consult with the adviser in the prepharmacy curricula for selection and arrangement of courses.

PUBLIC ADMINISTRATION CURRICULUM

The program of training in public administration can be developed through an adaptation of a general major or through a major in political science. In either case, the student will follow a sequence of work dealing with the principles and problems of organization for the carrying out of the functions of government, and public management. This latter aspect deals primarily with the directing and coordinating of work operations, the staffing of public agencies, the processes of budgeting and financial control, and the dynamics of management, namely planning, research, communications, leadership and human relations in the administrative process.

The public administration curriculum may be adapted to several goals, one being the taking of junior administrative examinations for entrance into the government service at the local, state or federal levels, and preparation for advancement up the governmental ladder. It is designed also to prepare students for graduate work in public administration.

Selected students may participate in an internship program in local government offices. Working under the close supervision of governmental officials and the adviser in public administration, the intern deals with actual administrative procedures and problems in government.

<i>Summary of unit requirements:</i>		<i>Units</i>
General education	-----	45
Preparation for the major	-----	12
Major (upper division)	-----	36
Electives	-----	31
Total units required for graduation	-----	124

Specific requirements for the major: Lower division: Political Science 71A-71B, Economics 1A-1B. Upper division: 36 upper division units, including Political Science 140A-140B, 198, Economics 131, and 140.

Students planning to enter public administrative fields should consult with an adviser in public administration.

Minor

A minor in public administration is offered in arts and sciences for students majoring in fields other than political science or public administration. This minor consists of Political Science 71A-71B, 140A-140B, and three units of upper division work selected from Political Science 198, Internship in Government Administration, or other political science course.

RECREATION CURRICULUM

The curriculum in recreation is arranged under the plan for the general major to provide a program to train for recreation and camp leadership, work with youth groups, and related activities. Refer to the general major in the section of the bulletin entitled: A.B. Degree in Arts and Sciences.

<i>Summary of unit requirements:</i>		<i>Units</i>
General education	-----	45
Preparation for the major	-----	20-22
General major (upper division)	-----	36
Electives	-----	21-23
Total number of units required for graduation	-----	124

Specific requirements for the major: Lower division: Physical Education 2A, 4, 5, 6 (women); Physical Education 63 (men); Physical Education 53, Sociology 50, 51; and 12 units selected from the fields of art, industrial arts, music, physical education, and speech arts, with a maximum of six units in any one field (20-22 units). Upper division: 36 units distributed as follows: 13 units selected from Recreation 110, 173, 174, 165, 170A-170B, 184A-184B, 199; nine units selected from Sociology 110, 173, 174, 185, 187, 190; nine units selected from Psychology 106, 131, 132, 145, 150, 170; Education 174. Physical Education 151. Four additional upper division units in electives are required to complete the 40 upper division units for graduation.

Students should consult with the adviser in the Recreation Curriculum for selection and arrangement of courses.

PRESOCIAL WORK CURRICULUM

The professional curriculum in social service prepares for admission to graduate work in recognized American schools of social work. This curriculum should be pursued by those who plan careers in federal, state and local welfare work; social work in public schools including preparation for a teaching credential; family and children's private case work agencies; social settlement work; county probation work; child welfare agencies; statistical and investigational work in private and public agencies; work in public institutions for the defective and delinquent; medical social service and psychiatric social work in hospitals and clinics; executive positions in social work; and social work in numerous other organizations.

The lower division requirements of the arts and sciences curricula include the general requirements of recognized professional schools of social work and should therefore ordinarily be met in full. The courses indicated below meet the requirements for the general major. For description of the general major, refer to the section in the bulletin on the bachelor of arts degree in arts and sciences.

<i>Summary of unit requirements:</i>		<i>Units</i>
General education	-----	45
Preparation for the major	-----	21
Major (upper division)	-----	38
Electives	-----	20
Total number of units for graduation	-----	124

Specific requirements for the major: Lower division: Sociology 50 and 51, Economics 1A-1B, Political Science 71A-71B or 1A-1B, and Psychology 11 (21 units). Biology 1 or 3 and 4 should be taken as general education courses in natural science. Recommended: courses from anthropology, foreign language, and speech arts. Upper division: Sociology 103, 187, 190, and an upper division elective (12 units); Economics, nine units selected from 102, 131, 150, 170, 185, 195; Political Science, six units selected from 140A, 140B, 142, 143; Psychology 145, 150, 151 (nine units); Zoology 165 or 155 (two units). An additional two units in upper division electives must be taken to complete the 40 upper division units required for graduation. Twelve units of social science in the major field may be counted as general education in social science.

Students should consult with the adviser in the social work curriculum for selection and arrangement of courses.

ANNOUNCEMENT OF COURSES

COURSE NUMBERS

Courses numbered from 1 to 99 are lower division (freshman or sophomore) courses; those numbered 100 to 199 are upper division (junior or senior) courses; those numbered 200 to 299 are graduate courses (see section on Admission and Registration for information concerning eligibility to enroll in these courses) those numbered 300 to 399 are professional education courses to be taken at the graduate level.

CREDIT FOR UPPER DIVISION AND GRADUATE COURSES

A student with lower division standing is not eligible to take upper division courses, with the following exceptions: A student in the last semester of his sophomore year who is approaching upper division standing must carry sufficient lower division units to complete the required minimum of 60 units may carry upper division units for the remainder of his study load. A student with sophomore standing may carry upper division courses for upper division credit provided that he has the written approval of the chairman of the department and the Dean of Instruction. This written approval must be filed in the Office of the Registrar on the form "Adjustment of Academic Record." Blank forms may be obtained by the student at the Office of the Registrar.

Graduate credit for courses numbered 200 to 299 is limited to students with graduate status. (See Admission to Graduate Study in section on Admission and Registration.)

GENERAL EDUCATION COURSES

Course numbers preceded by a "G" in parentheses are general education courses which may apply toward requirements in general education unless specifically required as a part of the major field. Refer to the list of general education courses in the section of the bulletin entitled: General Requirements for the Bachelor of Arts and Bachelor of Science Degrees.

UNITS

Figures in parentheses indicate the unit value of the course.

One "unit" represents 50 minutes of recitation or lecture, together with the required preparation, or three hours laboratory work each week for a semester of 18 weeks.

SEMESTER IN WHICH COURSES ARE OFFERED

Roman numeral I indicates course is offered in Fall semester. Roman numeral II indicates course is offered in Spring semester.

Following the course title are designations of credit and the semester in which course is offered. Examples:

- (3) I Three units. Offered first semester
- (3) I, II Three units. Offered first semester and second semester
- (3-3) Year, I Three units each semester. Year sequence beginning in the first semester
- (3-3) Year, I, II Three units each semester. Year sequence beginning either semester

Although the college fully expects to carry out the arrangements planned in the list of courses, it reserves the right to make changes. Classes in which the enrollment does not come up to the minimum number set by the State Department of Education may not be offered or may be postponed.

PREREQUISITES

Prerequisites for courses are stated. A student should not enroll in a course for which he is not eligible.

Admission to all graduate courses requires graduate status and permission of the instructor.

PROVISIONAL COURSES

Courses number 40 to 45 are open only to students who are in the provisional program. Other students (those not having provisional status) are not eligible to take these courses.

ACCOUNTING AND BUSINESS MANAGEMENT

IN THE DIVISION OF BUSINESS

Major

A *major in arts and sciences* is offered in *business* for the A.B. degree. Students majoring in this department may specialize in one of the following sub-fields: (A) Accounting, (B) Banking and Finance, (C) Business Management, (D) Insurance, and (E) Credit Management. Courses in the major are in addition to 45 units in general education courses. The following courses are required in the lower division for all sub-fields: Business 2, 8, 14A-14B, 18A-18B; and Economics 1A-1B.

Upper division requirements: A minimum of 24 upper division units. The following courses must be included: Economics 111 or 170 or Business 123; Economics 140; Business 121; and 15 units selected from one of the following sub-fields:

- A. *Accounting*: Business 118A-118B, 160A-160B, 161A-161B, 162, 163, 164A-164B, 165A-165B, 167, 169.
- B. *Banking and Finance*: Business 133, 134, 137, 154; Economics 131, 135, 142.
- C. *Business Management*: Business 118A-118B, 123, 125, 126, 127A, 133, 134, 137, 153, 154, 163, 184; Economics 128, 135, 142, 150, 170.
- D. *Insurance*: Business 118A-118B, 125, 126, 127A-127B, 128A-128B, 128C-128D, 128E-128F, 133, 134; Economics 135.
Recommended Economics 170; Sociology 50, 51, 153.
- E. *Credit Management*: Business 123, 125, 133, 134, 137, 153; Economics 131, 135, 142, 170.

A minor in some field other than business is required of all majors.

Minor

A *minor in arts and sciences* is offered in *business* with specialization in one of the sub-fields listed under the major above. The minor consists of a minimum of 15 units, or maximum of 22, six units of which must be in upper division courses selected from one of the sub-fields listed under the major above. Business 14A-14B must be included in the minor.

A *teaching minor* is not offered in business but is offered in *business education* for the general secondary school credential. For statement of requirements, refer to the credential.

Courses in Accounting and Business Management

All business courses in this department for the major or minor are listed in this section of the bulletin under Business.

AESTHETICS

IN THE DIVISION OF FINE ARTS

Major

A major in arts and sciences is not offered in aesthetics; however, certain courses in this field are required as part of the majors in art and in music. For specific information, refer to these departments.

A teaching major is not offered in aesthetics; however, certain courses in this field are required as part of the teaching major in art for the general secondary and the special secondary credentials in these fields. For specific information, refer to the outlines of requirements for these credentials.

Minor

A minor in arts and sciences is not offered in aesthetics.

A teaching minor is not offered in aesthetics; however, certain courses in this field are required as part of the teaching minor in art for the general secondary credential. For specific information, refer to this credential.

Lower Division Courses

(G)2. Introduction to Music (3) I

Practical approach to hearing music with understanding and pleasure, through study of representative compositions of various styles and performance media, great musicians and their art. Music correlated with other arts through lectures, recordings, concerts. Closed to music majors or minors.

(G)5. Art Orientation (2) II

An illustrated lecture course dealing with aesthetic meaning and its relation to the structure of art products. Designed to increase both understanding and appreciation of the visual world in general and of the fine arts in particular.

(G)50. Appreciation and History of Art (2) I

A survey of art development in the painting, sculpture, architecture, and handicrafts from dawn of art to the Renaissance. Illustrated.

(G)51. Survey of Mexican Art (2) I

A study of Mexican and Middle American Art from earliest time to present.

(G)102. Great Music (3) II

Instrumental and vocal music in the larger forms studied through directed listening. Artistic trends and their effect upon music composition and performance. No prerequisite, but completion of Aesthetics 2 recommended. Closed to music majors. Formerly Aesthetics 100.

(G)138. Introduction to Aesthetic Appreciation (1) I

Major forms of expression and aesthetic experience in art, music and literature, presented by an interdepartmental staff through lectures, demonstration, and panel discussions. Not open to students with credit for Comparative Literature 138.

(G)150. Appreciation and History of Art (2) II

The period from the Renaissance through the modern school treated in the same manner as in Aesthetics 50.

160. Techniques and Procedures of the Art Museum Worker (3) I

Designed to acquaint the student with the nature and function of the art museum in the community and to give him experience in the methods by which it serves the public. Prerequisite: Aesthetics 5 or 50 and 150.

(G)162. History and Philosophy of the Dance (2) I

Historical background and appreciation of dance, with special emphasis upon the development of art in America. The justification for dance as an educational and creative art medium and its place in the curriculum. Not open to students with credit for Physical Education 162.

AIR SCIENCE

IN THE DIVISION OF AIR SCIENCE AND TACTICS

Air Force Reserve Officers' Training Corps

The Department and Division of Air Science and Tactics appear for the first time at San Diego State College beginning with the Fall semester, 1951, offering the curriculum prescribed by the Air Force Reserve Officers' Training Corps. This curriculum consists of a four-year course, including a two-year basic course and a two-year advanced course.

The objectives of the Air Force ROTC program are the development of qualities of leadership and character essential to civil and military responsibility and the training of officer reserve personnel. Completion of the four-year course and a bachelor's degree leads to commission in the Air Force Reserve. Students who have demonstrated outstanding qualities of scholarship and leadership may receive regular commissions in the Air Force. A maximum of one-third of the students graduating in the program may be eligible to receive the regular commission.

Flight training is not offered as part of this program; however, Air Force ROTC graduates have a high priority for such training and, if accepted, serve as reserve officers on active duty during the training period.

Eligibility: A regularly enrolled male student is eligible for admission to the basic course if he is a citizen of the United States, not less than 14 years of age and has not reached his 23d birthday (veterans under 25), and is physically qualified for military training. Up to one year of pattern credit may be allowed toward the basic course for high school ROTC training. For admission to the advanced course, the student must not have reached his 27th birthday and must have completed the basic course or its equivalent. At the discretion of the Professor of Air Science and Tactics, up to two years of pattern credit in the basic course may be allowed for prior active service in the armed forces. Normally, a student entering the advanced course must have two years of college work remaining. The applicant must pass required screening tests and be selected by the Professor of Air Science and Tactics and the President of the College.

Attendance at one summer camp is required of each student to qualify for the commission. The summer camp is six weeks in length and is held at an active Air Force base. The student receives \$75 per month during this training period. Uniforms, equipment, subsistence, and transportation are furnished by the Air Force.

Students in the basic and advanced courses are furnished uniforms, equipment, and textbooks. Students in the advanced course are given, in addition, commutation of subsistence allowance of approximately \$27 per month. Upon acceptance of this allowance, the student executes a written agreement with the United States Government and with the President of the College to complete the advanced course, completion of such course becoming a prerequisite to graduation.

Basic and Advanced Courses

The basic course requires three hours of instruction and drill per week each semester. The advanced course requires five hours. In addition, each student in the advanced course must attend one summer camp of six weeks. The advanced course is offered in three separate specialties to prepare the student for one of three distinct career fields in the Air Force. These options are General Technical, Administration and Logistics, and Flight Operations. Student selection of specialty is based primarily on the academic pursuits of the individual and the approval of the Professor of Air Science and Tactics. Students enrolled in the AFROTC program pursue their regular courses of study in fields of their choice. Major work is not offered in air science and tactics, but a minor is offered.

Minor

A minor in arts and sciences is offered in air science and tactics. The minor consists of at least 15 units of work, six units of which must be taken in the advanced courses.

Lower Division Courses

1A-1B. First-Year Basic Air Science (2-2) Year, I

Two hours of classroom instruction and one hour of drill per week. World Political Geography to provide the AFROTC student with a general knowledge of geopolitics and a global viewpoint for use in directing his future studies of subsequent Air Force subjects.

21A-21B. Second-Year Basic Air Science (2-2) Year, I

Two hours of classroom instruction and one hour of drill per week. Maps and aerial photographs, aerial navigation, meteorology, aerodynamics and propulsion, applied air power, organization for the defense of the U. S. A., personal maintenance, and weapons familiarization.

Upper Division Courses**131A-131B. First-Year Advanced: General Technical (3-3) Year, I**

Four hours of classroom instruction and one hour of drill per week. The primary technical fields and the related equipment used in the Air Force.

132A-132B. First-Year Advanced: Administration and Logistics (3-3) Year, I

Four hours of classroom instruction and one hour of drill per week. Individual records, nonappropriated funds, transportation, and supply.

133A-133B. First-Year Advanced: Flight Operations (3-3) Year, I

Four hours of classroom instruction and one hour of drill per week. An augmentation of the academic phases of the training in the Flying Schools of the Air Training Command. (Student must be qualified for and express the desire to undertake flying training upon receipt of commission. Training will be taken as a student officer in grade of 2nd Lieutenant upon completion of the academic and AFOTC programs.)

141A-141B. Second-Year Advanced: General Technical (3-3) Year, I (not offered 1951-52)

Four hours of classroom instruction and one hour of drill per week. A continuation of Air Science 131A and 131B.

142A-142B. Second-Year Advanced: Administration and Logistics (3-3) Year, I (not offered 1951-52)

Four hours of classroom instruction and one hour of drill per week. Purpose and basic functions of the staff, administration of personnel at wing-base level, functions of Comptroller and Food Service Supervisor.

143A-143B. Second Year Advanced: Flight Operations (3-3) Year, I (not offered 1951-52)

Four hours of classroom instruction and one hour of drill per week. Advanced instruction in navigation and bombing and the theory of radar as applied to both.

ANTHROPOLOGY**IN THE DIVISION OF SOCIAL SCIENCES****Major**

A major in arts and sciences is not offered in anthropology; however, upper division units in anthropology may be planned under the *general major* program. Students wishing to use anthropology as a field of concentration in the *general major* should include the following courses in the lower division: Anthropology 1A-1B, 2 or 3; Geography 1, 2 or Geology 1A-1B; Sociology 50, 51; recommended: Spanish or German. The following supplementary fields of study are recommended in the upper division with a view to later specialization in anthropological work: For *archaeology*: Art, geography, geology; for *physical anthropology*: Psychology, statistics, and zoology; for *museum work*: Art, education, and psychology. For further information on the *general major*, refer to the section on the Bachelor of Arts Degree.

A *teaching major* is not offered in anthropology; however, it may be used as part of the *social science major* for the general junior high school credential or the general secondary credential. For specific information, refer to the outlines of the requirements for these credentials.

Minor

A minor in arts and sciences is offered in anthropology. The minor must include at least 15 units of work in anthropology, nine units of which must be from courses carrying upper division credit.

A *teaching minor* is not offered in anthropology for the general secondary credential; however, anthropology may be used as a part of the *social science minor* for the special secondary, the general elementary, and the kindergarten-primary credentials. For specific information, refer to the requirements for the teaching minor for these credentials.

Lower Division Courses**(G)1A-1B. General Anthropology (3-3) I**

Origin and antiquity of man. Theories of human descent. Classification of races. Origin and early development of civilization.

2. Physical Anthropology (3) I

An introduction to the studies of primatology and anthropometry. The comparative anatomy of the monkeys and great apes, the emergence of the anthropoids, the reconstruction of early man from fossil evidence. The landmarks, measures and indices used in the metrical study of the living human body and skeletal material. Sexual differences and growth changes in the skull and skeleton. Medico-legal applications.

3. Survey of Archaeology (3) II

A review of the history of modern archeology and a discussion of its methods. The development of archaeological techniques in reconstructing the ancient cultures of the Mediterranean world. The problems of present day archaeology in the Near East, the Orient and the Americas. The principles and basic techniques used in the excavation of sites and the reporting of findings.

(G)54. Social Anthropology (3) II (Not offered in 1951-52)

An anthropological study of social institutions in primitive and civilized societies. The evolution of family organization, religion, property right, and government traced in elementary and advanced civilization.

Upper Division Courses**151A. The North American Indian (3) I (Not offered in 1951-52)**

Pre-Columbian cultures of the North American Indian. The origin and migration of New World peoples. Industries, arts, crafts, social organization, religion and other phases of American Indian civilization.

151B. Indian Civilization of Middle America (3) II (Not offered in 1951-52)

The development of civilization in Pre-Columbian Mexico and Central America: Aztec, Mayan, and related cultures.

(G)152. World Ethnography (3) I

The cultural patterns of representative aboriginal peoples. Industries, arts, social organization and supernaturalism considered with a view to environmental adjustment, historical development and functional interrelation. Ethnological theories reviewed and applied in interpreting illustrative aboriginal societies.

153. Primitive Religion (3) II

Beliefs and ritual of primitive man. Magic and religion. Forms of animism and polytheism. Primitive mentality and the supernatural.

161. The California Indian (3) Summer

A survey of native California Indian culture with stress on the Indian groups of Southern California. The industries, arts, social organization, folklore and religion will be considered as revealed through the study of living peoples and archaeological evidences.

(G)165. Ethnology and Race Psychology (3) I (Not offered in 1951-52)

The biological basis of race, somatic and serologic typology, racial mentality, tests and their ethnopsychological significance, abnormality in ethnic groups. Race and culture; ethnic aspects of demography.

172. Indian Cultures of the Southwest (3) Summer

Indian cultures of the past and present in the Southwestern states. Arts, crafts, architecture and religion as revealed through archaeology and ethnology.

199. Special Study (1-3) I, II

Maximum of six units may be allowed.

ART

IN THE DIVISION OF FINE ARTS

Major

A major in arts and sciences is offered in art for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. Every student who plans to major in art, whether in arts and sciences or in the teacher education program, should complete the following basic courses: Aesthetics 5 or 51 and 50, Art A-B, 6A-6B, and 14A. In arts and sciences the student majoring in art may choose either a group of courses in which the crafts are emphasized or a group of courses in which the graphic arts are emphasized. One of the following plans should be selected:

Emphasis on crafts: The student should add to the list of basic courses required of all art majors the following courses: Lower division: Art 6D, 7, 61B and two units of art electives; upper division: Aesthetics 150, Art 106A or B or C, 106D, 111A, 117A-117B, 119A-119B, and eight units of art electives. This program leads in the direction of industrial design, interior design, cabinet making, sculpture, weaving, textile design, ceramics, etc.

Emphasis on graphic arts: The student should add to the list of basic courses required of all art majors the following courses: Lower division: Art 15A, 16A, and four units of art electives; upper division: Aesthetics 150, Art 106A or 106B, 112A-112B, 115A-115B, 116A-116B, 117A, and six units of art electives. This program leads in the direction of illustration, portraiture, landscape painting, mural design, poster design, production illustration, advertising design, fashion design, etc.

A teaching major in art is offered for the general secondary and special secondary credentials. For statement of requirements, refer to these credentials.

Minor

A minor in arts and sciences is offered in art. The minor must include at least 15 units of work in art, or maximum of 22, six units of which must be from courses carrying upper division credit.

A teaching minor is offered in art for the general secondary credential. Art may be offered only as a second minor for the general elementary and kindergarten-primary credential. For statement of requirements, refer to these credentials.

Art Appreciation, History and Orientation

For courses in appreciation, history of art, and art orientation, see aesthetics. Many students, regardless of the field in which they may be majoring, recognize the need for an intelligent approach to the subject of art and art appreciation. However, due to the erroneous popular feeling that art is a subject requiring "talent," these students may refrain from enrolling in art courses. For students who desire a better understanding of art, but who do not hope to acquire any of the art skills, the following courses are recommended.

Aesthetics 5, Art Orientation	Units
Aesthetics 50, History and Appreciation of Art	2
Aesthetics 51, Survey of Mexican Art	2
Aesthetics 52A-52B, Survey of Oriental Art	2
Art 8, Costume and Home-furnishing	6
	2
Other courses which require certain skills but which are not beyond the ability of the average college student are:	
Art 61B, Crafts	2
Art 6A, Design	2
Art A, Drawing and Composition	2
Art 94, Costume design	2

Lower Division Courses

Art A. Drawing and Composition (2) I, II
Problems involving perspective to develop ability to draw still life, furniture, exteriors, interiors, and the like. (High school equivalent may excuse the student from this course.)

Art B. Drawing and Composition (2) I, II

Drawing of mechanical and natural forms by the use of line and value. Emphasis on proportion and structure. Some quick sketching, gesture and contour drawing. Prerequisite: Art A.

(G)6A. Design (2) I, II

Fundamentals of design and composition and theory of color. Basic course used as a prerequisite for all advanced work.

6B. Design (2) I, II

Original work in creative design and representation with special stress on modern tendencies. Prerequisite: Art 6A.

6D. Design (2) I, II

Study of the principles of design through the making of furniture. Prerequisite: 6A.

7. Line, Color and Display (2) I, II

The principles of line, color and arrangement applied to store and window display. Study and observation of windows, color and materials used in display. Building models and practical problems in arranging colors, textures, and forms in windows to fit different kinds of merchandise. (Students taking this course for upper division credit, Art 107, will be required to do additional work.)

(G)8. Costume and House Furnishings (2) I, II

An appreciative study of modern architecture and modern house furnishings, with emphasis on the spirit of gracious living and an appreciative study of the modern dress with emphasis on suitability to the figure, the personality and the occasion.

14A. Lettering (2) I

Fundamental art principles applied to lettering. Practice for quick, accurate lettering; original problems using letters as design. Prerequisite: Art 6A.

14B. Posters and Commercial Art (2) II

The application of lettering to posters, newspaper and magazine advertising, and other forms of commercial art. The study of composition combined with lettering and special study of modern tendencies in publicity. Prerequisites: Art 6A, 14A.

15A-15B. Life Drawing (2-2) Year, I, II

Drawing from the nude model. Prerequisite: Art A-B.

16A-16B. Painting (2-2) I, II

Semester I: Composition of still life in oil. Semester II: Landscape and more advanced composition in oil. Prerequisite: Art A-B.

17A-17B. Sculpture (2-2) I, II

Creative design in such materials as clay, wood, stone, concrete, etc. Prerequisites: Art 6A-6B.

61A. Crafts in the Elementary Schools (2) I, II

A foundation course which develops unification of work of the elementary grades through activities and experiences. These experiences grow out of environmental activities. They include study and working of clay, lumber and tools, textiles, and cardboard construction. Prerequisite: Art 6A.

61B. Crafts (2) I, II

Problems involving the application of design principles to various fields—pottery, textiles, weaving, metal work, wood-carving, and book-binding. Prerequisite: Art. 6A.

94A-94B. Costume Design (2-2) Year, I, II

Original designs of modern costumes suitable to the individual or to distinct types; the drawing of fashion figures; the rendering of fabrics and textures. Prerequisite: Art 6A.

95A-95B. Interior Decoration (See Art 195A-195B)

Upper Division Courses

- 106A-106B. Printmaking (2-2) I, II
Study of print crafts which includes the making of linoleum blocks, wood engravings, etchings and lithographs. Prerequisites: Art A, B, 6A.
- 106C. Illustration (2) II
Same as 160A-B except that printmaking is applied to problems of book illustration. Prerequisites: Art A, B, 6A.
- 106D. Advanced Furniture Design (2) I, II
(See Art 6D) Prerequisite: Art 6D.
107. Line, Color and Display (2) I, II
(See course description under Art 7)
- 111A-111B. Industrial Design (2-2) Year, I, II
Design of objects for manufacture with reference to their use, materials, and in accordance with factory practices and machine techniques. Practice in the techniques of presentation, working drawings, renderings in perspective and scale models. Prerequisite: Art 6A-6B.
- 112A. Design and Composition (2) I
Imaginative organization of space by means of color, dark and light, perspective, and textures of various materials. Prerequisites: Art A-B, 6A-6B.
- 112B. Design and Composition (2) II
Continuation of Art 112A. Prerequisite: Art 112A.
- 115A-115B. Life Drawing and Painting (2-2) I, II
Drawing and painting from nude and costume models. Prerequisite: Art A-B.
- 115C-115D. Advanced Life Drawing and Painting (2-2) Year, I, II
Study of human figure in terms of form patterns. Prerequisite: Art 115A-115B.
- 116A-116B. Advanced Painting (2-2) Year, I, II
Painting in oil from still life, landscape, or models, stressing composition. Prerequisite: Art 16A or 16B.
- 117A-117B. Sculpture (2-2) Year, I, II
Creative design in such materials as clay, wood, stone, concrete, etc. Prerequisites: Art 6A-6B and 17A or 17B.
- 119A. Ceramics (2) I
Building of pottery on the basic techniques of coil, slab, mold making, and slip casting. Ceramic sculpture, glazing and kiln operations: Art 6A.
- 119B. Ceramics (2) II
Study of glazes and elementary clay technology. Mold making, slip casting with application to individual creative problems. Prerequisite: Art 119A.
166. Honors Course (Credit to be arranged) I, II
Refer to the Honors Program.
- 194A-194B. Costume Design (2-2) Year, I, II
For description, see Art 94A-94B. Prerequisite: Art 6A.
- 195A-195B. Interior Design (2-2) I, II
The consideration of the house as a unit; the arrangement of garden, house, floor plan, and furniture as functional and decorative problems. Prerequisite: Art A and 6A, 195A is a prerequisite for 195B.
- Art. 199. Special Problems in Art (1-3) I, II
Admission by permission of chairman of department.

Graduate Courses

- 200A-200B. Special Problems (2-2) I, II
A graduate course in which students may carry out projects in various fields of art under the direction of faculty members who are specialists in the field chosen. Students registering for this course must apply for work within a certain field after discussions with the art faculty.

ASTRONOMY

IN THE DIVISION OF PHYSICAL SCIENCES

Major

A *major in arts and sciences* is not offered in astronomy. Students desiring to prepare for advanced work in astronomy should include the following courses: Astronomy 1, 2, 3, 9, and 10; Mathematics 3A-3B, 4A-4B; Physics 4A-4B-4C; a reading knowledge of French and German.

A *teaching major* is not offered in astronomy; however, astronomy may be used as part of the general science major for the general junior high school credential. For specific information, refer to the outline of requirements for the general science teaching major for this credential.

Minor

A *minor in arts and sciences* is offered in astronomy. The minor must include at least 15 units of work in astronomy, nine units of which must be from courses carrying upper division credits.

A *teaching minor* is not offered in astronomy; however, astronomy may be used as part of the *general science minor* for the special secondary, the general elementary, and the kindergarten-primary credentials. For specific information, refer to these credentials.

Lower Division Courses

(G)1. Descriptive Astronomy (3) I, II

A cultural course planned to develop an appreciation of astronomy with emphasis on the solar system. Attention is given to the methods by which astronomical knowledge has been gained. A six-inch refractor and an eight-inch reflecting telescope are available for observation.

(G)2. Modern Astronomy (3) II

A study of the stellar system in the light of modern research, especially photographic and spectrographic. Prerequisite: Astronomy 1 or permission of the instructor.

3. Surveyor's Course in Practical Astronomy (3) II

The principles of spherical astronomy adapted to the needs of engineering students. Computation and observation. Two lectures and one three hour laboratory period each week. Prerequisite: Surveying 1A or permission of the instructor. Astronomy 1 and 9 desirable.

(G)9. Practice in Observing (1) I, II

A course designed to supplement Astronomy 1. The course will include constellation study, use of astronomical coordinates, and descriptive observations of celestial objects with the telescope. One evening laboratory period each week. Recommended: Astronomy 1 or concurrent registration in Astronomy 1.

10. Advanced Observational Astronomy (1) II

A continuation of Astronomy 9. More advanced problems in observing will be taken up such as the determination of azimuth by observations of Polaris, transit observations, astronomical photography, etc. One three-hour evening laboratory period each week. Prerequisite: Astronomy 9.

12. Elementary Navigation (3) I

A study of compass corrections, time, line of position, use of celestial coordinates, etc. A few class hours devoted to the use of tables such as H.O. 214 for the solution of astronomical triangle. One laboratory period each week. Astronomy 1 desirable.

Upper Division Courses

(G)101. Principles of Astronomy (3) I (Not offered 1951-52)

A course designed particularly to provide background for teachers. It consists of two lectures and one laboratory period each week. Students will be required to become familiar with the prominent constellations, brighter stars in the sky, and with the general characteristics of the solar and stellar system.

103. **Astronomical Optics** (2) II

This course aims to acquaint the students with the optics and methods of testing an astronomical telescope. The course consists of one lecture and one laboratory period each week. The student is required to grind a four-inch astronomical mirror. Prerequisite: Astronomy 1 or permission of instructor.

(G)105. **Historic Development of Astronomy** (3) I (Not offered 1951-52)

A study of the more important problems and astronomical concepts in the light of their historical development. Particular attention is given to the biography and contributions of the more important astronomers, such as, Galileo, Kepler, Newton, Herschel, Bessel, etc.

107. **Method of Least Squares and Computing Practices** (3) I (Not offered 1951-52)

Fundamental principles with applications in the fields of astronomy, physics, and engineering. Prerequisite: Math 4A or equivalent.

110. **Introduction to Study of Variable Stars** (3) II (Not offered 1951-52)

A study will be made of the various types of variable stars, their spectra, periods, methods of observing, etc. In the laboratory the light curve of several typical variables will be observed. Two lectures and one laboratory period each week. Prerequisite: Astronomy 2. Astronomy 9 desirable.

112. **Elementary Astrophysics** (3) I (Not offered 1951-52)

A lecture course in the application of physics to astronomy: Much of modern astronomical research is in the field of astrophysics. An occasional laboratory period will be substituted by appointment for the lecture period. Prerequisites: Astronomy 2 or college physics.

199. **Special Problems** (1-3) I, II

Admission by consent of instructor. Credit and hours to be arranged in each case. Open to students who have completed three units in astronomy.

BACTERIOLOGY**IN THE DIVISION OF LIFE SCIENCES**

Major work is not offered in bacteriology. Courses in this field are recommended for students who are preparing to teach science in junior or senior high school, or who are planning to follow a special curriculum in laboratory technique or research in this general field.

Minor

A minor in arts and sciences is offered in bacteriology. The minor consists of a minimum of 15 units, to include the following: Lower division requirements: Bacteriology 1 (or Bacteriology 101 may be substituted). Recommended: Zoology 20, or Physiology 1A and 1C. Upper division requirements: Bacteriology 102, 103, and the remainder of the units chosen from the following courses: Bacteriology 105, 106, 107, and 199. Recommended: Chemistry 102, 114, 115.

A teaching minor is not offered in bacteriology.

Lower Division Courses1. **General Bacteriology** (4) I, II

An introduction to bacteriology. Effects of physical and chemical agencies upon bacteria; biochemical activities of bacteria; microscopic examination and cultivation of bacteria; the bacteria of air, water, soil, milk and dairy products, other foods; industrial applications. Introduction to disease-producing bacteria. Two hours of lecture and six hours of laboratory per week. Prerequisite: Chemistry 1A or 2A. (Chemistry 1A-1B for minor in bacteriology.)

Upper Division Courses101. **General Bacteriology** (4) I, II

Lectures and laboratory work of Bacteriology 1 with additional work to be prescribed by the instructor. Prerequisite: Chemistry 1A or 2A. (Chemistry 1A-1B for minor in bacteriology.)

102. **Advanced Bacteriology** (5) I

A survey of the agents of disease and methods of host resistance. Laboratory experience in diagnosis and immunologic techniques. Two lectures and three laboratories per week. Prerequisites: Bacteriology 1 or 101, and Chemistry 101. Recommended: Biochemistry, physiology.

103. **Serology** (4) II

A survey of the principles and techniques used in serological diagnosis of disease agents. The course is planned for students interested in research or laboratory technology. One lecture and three laboratories per week. Prerequisites: Bacteriology 1 or 101, Bacteriology 102, and Chemistry 101. Recommended: Biochemistry, physiology.

105. **Bacterial Metabolism** (2) I (Not offered in 1951-52)

A course to provide a basic knowledge of the principles by which micro-organisms derive energy to support the life processes. Prerequisites: Bacteriology 1 or 101, Chemistry 101. Recommended: Biochemistry, Bacteriology 102 and 103. This course is offered every third semester.

106. **Immunology** (2) II (Offered in 1951-52)

A lecture course dealing with the factors underlying virulence in microorganisms, and the mechanisms of bacterial infection. Specific and nonspecific antimicrobial immunity; the antigen-antibody reaction; and consideration of the immunochemistry of protein and nonprotein cell substances. Prerequisites: Bacteriology 102, Chemistry 101. Recommended: Bacteriology 107, Chemistry 114. This course is offered every third semester.

107. **Virology** (2) I

A survey of viruses and Rickettsias as agents of disease. An introduction to virological techniques, and routes of infection with further consideration of concepts of epidemiology, diagnosis, pathology, and host-responses. Prerequisite: Bacteriology 102, 103, or equivalent.

199. **Special Study** (1-6) I, II

Work other than is outlined in the regular courses. Admission only by consent of the instructor with whom the work is to be done. Credit and hours to be arranged in each case. Open to students who have completed at least 15 units of work in the life sciences (including courses in bacteriology) with grades of A or B. No more than six units of Bacteriology 199 may apply toward graduation.

BIOLOGY**IN THE DIVISION OF LIFE SCIENCES**

Major and minor work are not offered in biology (see botany and zoology); however, courses in biology may be used as part of the general science major for the general junior high school credential, or the general science minor for the general elementary, kindergarten-primary, and special secondary credentials, or the life science minor for the general secondary credential.

Lower Division CoursesA. **Solution and Dosage** (2) I

Arithmetic review with computing of dosage, percentage of solutions, apothecaries weights. Two hours per week.

(G)1. **Survey of Biology** (3) I, II

A survey of life science with emphasis on the biology of man in relation to modern life. Three lectures per week. If laboratory credit is wanted by the student, Biology 3 should be taken instead of Biology 1; or Biology 1 may be followed by Biology 4. Not open to students with credit for Biology 3, 4, 10A, 10B, 40, Zoology 1A, 1B, Botany 2A, or 2B.

(G)3. Principles of Biology (3) I, II

A consideration of basic biological phenomena. Two hours of lecture and three of laboratory each week. Not open to students with credit for Biology 1, 40, 10A-10B, Botany 1 or 2A-2B, or Zoology 1A-1B.

(G)4. Plant and Animal Types (3) I, II

An introduction to the major groups of plants and animals with emphasis on local forms. Two hours of lecture and three of laboratory each week. Prerequisite: Biology 10A-10B, Botany 1 or 2A-2B, or Zoology 1A-1B.

BOTANY IN THE DIVISION OF LIFE SCIENCES

Major

A major in arts and sciences is offered in botany for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: Botany 1 or 2A-2B, Chemistry 1A-1B or 2A-2B. Recommended: German, French or Spanish, Zoology 1A-1B, Bacteriology 1. Upper division requirements: A minimum of 24 upper division units, at least 18 units of which must be in botany and six of which may be related courses in bacteriology, chemistry, geology, zoology, selected with approval of departmental representative.

A teaching major is not offered in botany.

Minor

A minor in arts and sciences is offered in botany. The minor must include at least 15 units of work in botany, or maximum of 22, six units of which must be from courses carrying upper division credit.

A teaching minor is not offered in botany; however, botany may be used as part of the general science minor for the special secondary, the general elementary, and the kindergarten-primary credentials or as part of the life science minor for the general secondary credential. For specific information, refer to these credentials.

Lower Division Courses

1. Introduction to Botany (4) I, II

Designed primarily for students who desire a general acquaintance with the fundamentals of botany. Not open to students who have credit for Botany 2A or 2B, but may be used as a prerequisite to upper division courses. Three lectures, and one three-hour laboratory per week.

2A-2B. General Botany (4-4) I, II

Year course covering fundamentals of structure, general behavior, morphology and relationship of plants, including an introduction to classification and distribution of seed plants. Two lectures and six hours of laboratory work per week. Botany 2A is a prerequisite for 2B.

4. California Plants (2) II (Not offered in 1951-52)

Classification and ecology of representative orders of wild flowers, trees, and chaparral of San Diego region, including practice in the use of keys. One lecture and three hours laboratory per week. Occasional Saturday field trips.

102. Mycology (4) I

A study of the different groups of fungi. Special attention will be given to the parasitic and economic forms, their life history, structure, and classification. Prerequisite: Botany 2B or Botany 1.

107. Plant Physiology (4) II

The activities of plants, including food manufacture, absorption, conduction, transpiration, respiration, growth and movement. Two lectures and two laboratory periods per week. Prerequisites: Botany 1 or Botany 2A, and Chemistry 2A-2B or equivalent.

112. Cultivated Trees and Shrubs (3) I

Recognition of the common cultivated trees and shrubs of the San Diego region. Trips to local parks and private gardens. One lecture and six hours per week laboratory or field work. Prerequisites: Botany 1, 2A-2B, 4, or equivalent.

114. Plant Taxonomy (3) II

Identification, classification and distribution of representative orders of flowering plants. One hour lecture and six hours per week of laboratory and field work. Prerequisites: Botany 1, 2A-2B, or 4.

119. Field Botany (4) Summer

Study of the local native vegetation with emphasis on ecological units within floristic areas. Field trips to be supplemented with laboratory work in herbarium procedure.

126. Plant Pathology (3) II

A practical course dealing with the principles of disease in plants, control measures, and quarantine procedures. Emphasis is placed on the determination and control measures of those pathogenic organisms which affect crops, trees and shrubs and nursery stock. Two lectures and one laboratory period per week. Prerequisite: Botany 1 or 2A-2B and 102.

(G)150. Readings in Biology (2) II

Reading from a suggested bibliography with informal class discussion of topics. Subjects discussed will include history of biology, biological principles, ecology, economic zoology, zoogeography, breeding habits and animal behavior. Not open to students with credit for Zoology 150.

153. Economic Biology (2) I

Study of the uses of plants and animals to man and the ways in which they injure him and his possessions. Consideration is also given to general methods of control and conservation. Prerequisites: Zoology 1A, Biology 1, Biology 4, Botany 1, or Botany 2A-2B. Not open to students who have credit for Zoology 153.

155. Genetics (3) II

Principles of plant and animal genetics, with experiments and demonstrations illustrating the mechanisms of heredity. Two hours of lecture and three hours of laboratory per week. Not open to students with credit for Zoology 155. Prerequisites: Biology 3 and 4, Zoology 1A-1B, or Botany 2A-2B.

(G)160. Evolution (2) II

The development of theories of evolution. Two lectures per week. Not open to students with credit for Zoology 160.

162. Agricultural Botany (2) I

A study of California crop plants, their general identification, cultural methods, and regional distribution. Field trips to be arranged. Prerequisite: Botany 1 or Botany 2A-2B.

166. Honors Course (Credit to be arranged) I, II

Refer to the Honors Program.

199. Special Problems (1-3) I, II

Work other than is outlined in the above courses. Admission by permission of the instructor with whom the work is to be done. Credit and hours to be arranged in each case. Open only to students who have completed at least 15 units of botany with a grade A or B. No more than six units of Botany 199 may apply toward graduation.

Graduate Courses

298. Special Study (1-6)

An individual study course designed primarily for candidates for advanced degrees.

BUSINESS COURSES**IN THE DIVISION OF BUSINESS**

The Division of Business consists of three departments: Accounting and Business Management; Marketing; and Business Education, Secretarial and Office Management. For complete descriptions of the major in business with the various fields of specialization, refer to these departments or to the business curricula in the section of the bulletin entitled: Preprofessional and Vocational Curricula.

All courses in business offered by the three departments in the Division of Business are listed below.

Lower Division Courses

- A. Business Mathematics (1) I, II**
A practical course in the mathematics of business. A thorough study of interest, compound interest, discount, insurance rates, etc.
- 1A-1B. Typewriting (3-3) Year, I**
Development of a command of a keyboard, acquisition of speed and the artistic arrangement of typewritten material with special reference to commercial forms, tabulation and billing. (1A is a prerequisite for 1B.)
- 2. Mathematics of Finance (3) I, II**
Interest and annuities; amortization; sinking funds; valuation of bonds; depreciation; mathematics of building and loan associations. Prerequisites: Two years of algebra in high school, or equivalents.
- 2A. Personal-Use Typewriting (3) I, II**
A short course designed for those not wishing to enter the business office but desiring a knowledge of or skills in the use of the typewriter. Five hours laboratory practice.
- 3A. Office Machines: Rotary Calculator (1) I, II (1st six weeks of semester)**
A six-weeks course designed to teach students the operation of the rotary calculator. Operations basic to statistics, accounting, and other areas needing this skill will be stressed.
- 3B. Office Machines: Key-Driven Calculator (1) I, II (2d six weeks of semester)**
Same as 3A, except the key-driven calculator is substituted for the rotary calculator.
- 3C. Office Machines: Printing Calculator (1) I, II (3d six weeks of semester)**
Same as 3A, except the printing calculator is substituted for the rotary calculator.
- 4. Introductory Typewriting (1) I, II**
A short, introductory course building the fundamentals of typing in a six-weeks period. Students enroll for the first six weeks, the second six weeks, or the third six weeks in a semester. Not open to Business Education or Secretarial majors.
- 5A-5B. Shorthand (5-5) Year, I**
An intensive course designed for the practical preparation of office secretaries. A thorough study of the Gregg System. Development of the ability to read and write shorthand rapidly and correctly, both literary and commercial. The shorthand speed necessary to pass a civil service examination is attained by the end of the year. (5A is a prerequisite for 5B.)
- 6A-6B. Advanced Shorthand (3-3) Year, I**
Development of speed in writing and transcription. Advanced dictation on letter forms, legal forms, speeches, and literary and technical material. Prerequisite: Business 5A-5B or equivalent. (6A is a prerequisite for 6B.)
- 8. Business Communication (3) I, II**
A course designed to give training in writing as a means of solving modern business problems. Prerequisites: English 1 and Business 2A or its equivalent.

14A-14B. Principles of Accounting (3-3) I, II

The balance sheet; profit and loss statement; the opening, conducting, and closing of books for different kinds of businesses; organizations, reorganizations, dissolutions, and consolidations, etc., keeping in view the best modern accounting practice. Five hours lecture and laboratory. (14A is a prerequisite for 14B.)

18A-18B. Business Law (3-3) I, II

The fundamental principles of business law. Cases showing the actual application of the principles to commercial and business transactions. The subjects covered: Contracts, sales, agency, negotiable instruments, insurance, and wills. Either semester may be taken first.

(G)20. Consumer Problems (3) II

Consumer incomes; bases of consumer choice-making; practical problems of buying food, clothing, shelter, transportation, insurance, etc.; family budgeting; market structure and functions seen from the consumer's point of view. Not open to students with credit for Business 120. A general education course in family life education.

21. Organization and Management of Small Business (3) I

Problems confronting the small business man with regard to finance, organization, management. Reasons for failures and success in small business. Specific study of various kinds of small businesses.

24. Retailing (3) I, II

Study of retail stores, emphasizing the problems of store managers and merchandising executives; store location, organization, personnel, sales promotion, buying and handling of merchandise, inventory, turnover, and control methods. Problems of profitable operation under changing conditions.

25. Salesmanship (3) I, II

Theoretical and psychological backgrounds of salesmanship, newer concepts of selling; the selling of ideas and services; steps in a sale: Attention, interest, desire, closing; the development of clientele and of good will; the personal factor in salesmanship.

26. Applied Salesmanship (2) II

Practice in selling; supervised work in cooperating stores, or outside selling; relationships between theory and practice. Prerequisite: Business 25 and permission of instructor.

27. Advertising Principles (3) I, II

Advertising as a sales promotional tool in marketing activities; consumer, market and product analysis; advertising media; preparation of advertisements; measurement of advertising effectiveness; economic and legal aspects of advertising; public relations; advertising campaigns.

65A-65B. Record Keeping. (1-3 each semester) Year, II

Application of accounting practice and principles to accounting practice; the technical arrangement of accounting forms, records and reports found in business. Prerequisite: Business 14A. Business 65A is a prerequisite for 65B.

Upper Division Courses**103A. Office Management (3) I, II**

A study of the functions of the office, duties of the office manager, organization of the office, communication functions, physical facilities involved, personnel relationships of management and worker, and the controls necessary for efficient output.

105A. Office Systems (3) I, II

A course designed to develop fundamental skills in the figuring and bookkeeping machines used in offices, together with their interrelating functions as these affect office systems.

105B. Office Systems (3) I, II

The relationship of voice-writing, addressing, and duplicating machines to office procedures and routines is studied and skills developed in these areas of use.

108. Records Management (3) I, II

Intensive survey of the various means of preparing, keeping, storing, and disposing of office records to facilitate the efficient management of business. Various systems of records management will be studied together with the equipment and supplies required.

113A-113B. Secretarial Office Practice (5-5) Year, I

Practice in the duties and routines of office work as required of the stenographer and secretary with special emphasis on the shorthand dictation and transcription problems arising in various types of offices. Prerequisite: Business 1A-1B, 5A-5B, or their equivalent.

118A-118B. Advanced Commercial Law (3-3) Year, I, II

An advanced study of the law of personal and real property, partnership, corporation and the laws regulating trade and trade practices and competition. Elective for business majors.

120. Consumer Income Management (3) I

Functions and responsibilities of consumers; problems of choice-making; planning expenditures for housing, household operation, insurance and investments. Economics of installment buying, borrowing procedures, control of frauds, legislation affecting consumers. Not open to students with credit for Business 20.

121. Business Administration (3) I, II

Problems of business administration as an interrelated whole. A discussion of the problems of the business administrator with particular reference to the character of the problems involved and to the control policies and devices of the manager. Prerequisite: Economics 1A-1B.

123. Marketing Principles (3) I, II

Study of marketing functions; activities of producers, wholesalers, retailers and other middlemen; channels of distribution; integration of marketing activities; price policies; government regulation. Prerequisite: Economics 1A-1B.

124. Marketing Administration (3) II

An advanced course dealing with practical aspects of marketing. Solutions of problems faced by producers, wholesalers, retailers and other middlemen in the marketing of their products. Prerequisite: Business 123.

125. General Insurance (3) I

Economic theory of risk; transfer of risk; distribution and prevention of loss; types of insurance carriers; problems of rate making; the insurance contract; coverages; special forms of life, fire, marine and casualty insurance; state supervision.

126. Casualty Insurance (3) II

The nature and reasons for existing practices in compensation and casualty insurance. The social and legal bases of insurance, fundamental principles of rate making, policy provisions, state regulation and state insurance. Prerequisite: Business 125.

127A. Life Insurance—Principles and Practice (3) I

Types of life insurance companies and associations, home office and agency organization, types of contracts, surrender value, policy loans and extended insurance, surplus and dividend policies, reserves, group, industrial and social insurance, and state supervision.

127B. Life Insurance Salesmanship (3) II

Special problems of life insurance selling, with emphasis on the psychological aspects of insurance selling, on specific techniques for finding prospects, for managing the sales interview. For students interested in life insurance selling, and those planning to obtain life underwriter's certification.

128A-128B. Advanced Life Insurance (3-3) Year, I

An advanced course in life insurance. The emphasis is on preparation for the C. L. U. Certificate. 128A is a prerequisite for 128B.

128C-128D. Advanced Life Insurance (3-3) I

Prepares the student for Part D of the Chartered Life Underwriters examination showing how life insurance strengthens banking credit, financial structure of corporations, and partnerships; also, life insurance as an investment. Business 128C is a prerequisite for Business 128D.

128E-128F. Advanced Life Insurance (3-3) Year, I

Prepares for part of the Chartered Life Underwriters examination. Covers the four sections, "Life Insurance Fundamentals," "General Education," "Law, Trust and Taxes," and "Finance"; teaches proficiency in the analysis of cases or problems. Business 128E is a prerequisite for Business 128F.

133. Corporation Finance (3) I

The corporate form of organization, instruments of long-time finance, methods of raising capital, efficient financial management, the financing of reorganizations, and governmental control. Prerequisite: Economics 1A-1B. Not open to students who have credit for Economics 133.

134. Investments (3) II

Investment principles and practices with emphasis upon problems of the small investor, such as tests of a good investment, sources of information, types of stocks and bonds, mechanics of purchase and sale, investment trusts, real estate mortgages, and the like.

137. Credits and Collections (3) I

The credit man and his work, including the instruments with which he works, sources of credit information, the technique of his department, collection methods, legislation for the protection of debtor and creditor, and credit insurance.

153. Personnel Management (4) I, II

Problems in the management of personnel relations, including techniques of selecting, training, supervising and rating employees. Methods used by management in job evaluation; wage and salary payment plans; employee services; health and safety; union relationships; stimulation of interest.

154. Wage and Salary Administration (3) II

Problems of job analysis; major techniques of job evaluation, including ranking, classification, point system, factor comparison; problems of wage and salary administration, incentive pay methods; merit rating plans. Not open to students with credit for Political Science 146.

160A-160B. Advanced Accounting (3-3) Year, I

An intensive study of the corporation, its accounting and financial problems; a thorough study of the balance sheet; depreciation; factory accounting, etc. Prerequisite: Business 14A-14B. (160A is a prerequisite for 160B.)

161A-161B. Cost Accounting (3-3) Year, I

Principles and methods of cost accounting in the mercantile establishment and in the factory. A study of industrial accounting procedure, the forms used, and their application to practical problems. 161A is a prerequisite for 161B.

162. Accounting Systems (3) I

The accounting systems used in various types of business and financial concerns. Some practice in devising and installing systems. Prerequisite: Business 14A-14B.

163. Financial Statements (3) II

The construction, composition, analysis and interpretation of accounting reports with particular emphasis on the form, content and phraseology of reports. Prerequisite: Business 160A-160B.

164A-164B. Income Tax Procedure (3-3) Year, I

A study of the laws and a consideration of the problems arising from state and federal income, inheritance and corporation tax. 164A is a prerequisite for 164B.

165A-165B. Auditing (3-3) Year, I

The fundamental principles of accepted procedures of auditing and related types of accounting engagements. 165A is a prerequisite for 165B.

166. Honors Course (Credit to be arranged) I, II
Refer to the Honors Program.
167. Governmental Accounting (3) II
A comparative study of accounting systems used by municipalities, counties, and the State of California; detailed comparisons with commercial practice; procedures in handling budget accounts, appropriations, and encumbrances; subsidiary records; cost records; internal checks; auditing.
169. C. P. A. Review (3) II
An intensive review of the accounting principles and procedures covered in the accounting theory and accounting practice sections of the uniform C. P. A. examination prepared by the American Institute of Accountants. Prerequisite: Business 160A-160B, 161A-161B, 164A-164B, 165A-165B, 167.
181. Radio Sales and Advertising (3) I, II
A study of advertising trends in radio advertising; time buying, audience survey, and program types in relation to products to be advertised via radio broadcasting. Includes publicity and promotion of radio programming organization of a radio station; relationship between the business and entertainment factors of radio broadcasting. Prerequisite: Consent of the instructor. Not open for credit to students with credit in Speech Arts 181.
184. Sales Management (3) I
Consideration of problems confronting the modern sales executive; selection, training, compensation and control of the sales force; sales analysis; sales quotas; sales costs and budgets; market and product research and analysis; coordination of personal selling with other form of sales effort.
185. Advertising Copy and Layout (2) II
Introduction to principles and techniques of copy writing; types of copy; preparation of layouts; mechanical methods employed by the artist, engraver and printer; legislation and regulations affecting advertising claims. Prerequisite: Business 27, or permission of instructor. Not open to students with credit for Journalism 185.
186. Store Management (2) II
Retail locations, buildings, layouts and fixtures; store supplies and maintenance; receiving, marking, storing, wrapping and delivering merchandise; customer service, adjustments, credit and collections; expense control. Prerequisite: Business 24, or permission of instructor.
- 187A. Buying Techniques (2) I
Buying for department and specialty stores; customer demand; functional bureaus that aid in buying; stock plans; merchandise resources; foreign buying; trading techniques; terms and discounts; credit and shipping terms; the regulation of trade practices. Prerequisite: Business 24, or permission of instructor.
- 187B. Merchandising Techniques (2) II
Methods of dollar and unit control in retail stores; pricing, turnover, inventory methods and control; legislation; budgets; arithmetic of merchandising; profitability of specific methods of merchandising. Prerequisite: Business 24, or permission of instructor.
188. Advertising Media (2) I
A thorough coverage of advertising media. Market characteristics; rates and sources of information; evaluation of media; problems of coverage, duplication, costs and scheduling; advertising salesmanship. Prerequisite: Business 27, or permission of instructor.

189. Advertising Problems (3) I
Principles of advertising applied to the solution of actual advertising problems encountered by business firms. Estimating opportunities for effective use; promotional campaigns; selection of media, retail advertising, national advertising, advertising agencies; advertising services of publishers. Prerequisite: Business 27, or permission of instructor.
190. Objectives and Curricula in Business Education (3) II
A study of the objectives of business education and a detailed analysis of the factors involved in the construction of a business curriculum.
196. Work Experience (2) I, II
Supervised work in cooperating stores or offices; relationship between theory and practice in specific business conditions. Prerequisite: Permission of instructor.
- 198A-198B. Investigation and Report (1 to 3 each semester) I, II
A comprehensive and an original study of a problem connected with business under the direction of one or more members of the business staff. Prerequisite: Senior standing and permission of the instructor. 198A is a prerequisite for 198B.
199. Special Study (1-3) I, II
An individual study course. Maximum credit six units.

Graduate Courses

200. Readings in Current Literature in Business Education (2) I
Specialized reading in one or more phases of business education, followed by a discussion and written report of the value of each article read.
203. Office Management (2)
An intensive study of the problems of office management and their solution. The relation of records, reports, budgets and manuals to managerial control. Prerequisites: Business 14A-14B, 103A.
213. Problems in Business Education (2) II
Designed to fit the needs of individual students and their problems through the writing of research papers, of a term or individual study nature. The studies to be made will cover the principles of good teaching, trends in Business Education, current literature.
221. Basic Business Education (2)
An introduction to the content and methodology of teaching basic Business Education.
223. Problems of Distributive Business (2)
Critical analysis of distributive business problems in the light of changing economic, social and governmental conditions. Prerequisite: Business 121, 123.
233. Administration and Supervision of Business Education (2) I
Designed to provide students who hold, or who expect to hold, administrative positions in Business Education with the techniques necessary for successful executive work.
260. Advanced Problem Analysis (Accounting) (2)
The study of conditions causing various accounting problems with special emphasis upon the theory and practices involved in their solution. Prerequisite: Business 160A-160B, 161, 165.
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 (1-3)
An individual study course designed primarily for candidates for the master's degree.
299. Thesis or Problem (3)
Guidance in the preparation of a project or thesis for the master's degree.

BUSINESS EDUCATION, SECRETARIAL AND OFFICE MANAGEMENT

IN THE DIVISION OF BUSINESS

Major

A major in arts and sciences is offered in business for the A.B. degree. Students majoring in this department, with business as the major, may specialize in one of the following subfields: (A) *Business Education*, (B) *Office Management*, or (C) *Secretarial*. Courses in the major are in addition to 45 units in general education courses. A minor in some field other than business is required of all majors in this department.

The student must complete requirements in one of the following fields of specialization:

A. Business Education: Lower division requirements must include Business 1A-1B, 8, 14A-14B, and 18A-18B, plus the requirements in one of the following subfields: (1) *Accounting*: Nine units selected from Business 2, 21, 24, 25, 27. (2) *Accounting-Secretarial*: Business 5A-5B (If student has the equivalent of 1A-1B or 5A-5B, must select nine units in consultation with adviser). (3) *Merchandising*: Business 24, 25, 27. (4) *Secretarial*: Business 5A-5B (If student has the equivalent of 1A-1B or 5A-5B, must select nine units in consultation with adviser).

Upper division requirements: Business 103A, 105A-105B, 108, and 190, plus the requirements in one of the following subfields: (1) *Accounting*: Business 121, 160A, 164A. (2) *Accounting-Secretarial*: Business 121, 160A, 164A, or 113A-113B. (3) *Merchandising*: Business 121, and seven units selected from Business 185, 186, 187A-187B, Art 107. (4) *Secretarial*: Business 113A-113B.

B. Office Management: Lower division: Business 2, 8, 14A-14B, and 18A-18B. Upper division: Business 103A, 105A-105B, 108, 121, 137, 153, 154, 160A, 161A, and Economics 140.

C. Secretarial: Lower division: Business 1A-1B, 5A-5B, 8, 14A-14B, and 18A-18B. Upper division: Business 103A, 105A-105B, 108, 113A-113B, 153, and 164A.

A teaching major in business education is offered for the special secondary and general secondary school credentials. For statement of requirements, refer to these credentials.

Minor

A minor in arts and sciences is offered in business with specialization in one of the subfields listed under the major above. The minor consists of a minimum of 15 units, or maximum of 22, six units of which must be in upper division courses selected from one of the subfields listed under the major above. Business 1A-1B or Economics 1A-1B and Business 14A-14B.

A teaching minor in business education is offered for the special secondary and general secondary school credentials. For statement of requirements, refer to these credentials.

Courses in Business Education, Secretarial and Office Management

All business courses in this department for the major or minor are listed in this section of the bulletin under Business.

CHEMISTRY

IN THE DIVISION OF PHYSICAL SCIENCES

Major

A major in arts and sciences is offered in chemistry for the A.B. and for the B.S. degrees. Courses in the major are in addition to 45 units in general education courses. These curricula are outlined below.

A teaching major in physical science and general science is offered for the general secondary school credential and a teaching major in general science is offered for the general junior high school credential. For statement of requirements, refer to these credentials.

Minor

A minor in arts and sciences is offered in chemistry. The minor consists of a minimum of 15 units, or maximum of 22, six units of which must be in courses carrying upper division credit. Chemistry 1A-1B, or its equivalent, must be included in the minor.

A teaching minor in physical science and general science is offered for the general secondary, special secondary, general elementary, and kindergarten-primary credentials. For statement of requirements, refer to these credentials.

Curricula for Chemistry Majors in Arts and Sciences

The curriculum outlined below for the B.S. degree is based upon the recommendations of the Committee for Professional Training of Chemists of the American Chemical Society. It qualifies graduates for many types of positions as chemists and provides the training required by most universities for admission to graduate work in chemistry. This department is on the approved list of the American Chemical Society. Students may also arrange a program which leads to the A.B. degree and meet the recommendations of the American Chemical Society and the requirements of most universities for admission to graduate work in chemistry.

The final curriculum outlined below for the A.B. degree is designed for students who do not intend to become professional chemists, but who desire the major in chemistry as part of a general education or in preparation for training in a related profession. By proper choice of electives, graduates can meet the requirements for admission to medical schools. The sequence of courses listed below represents the minimum technical requirement for an A.B. degree with a major in chemistry. A minor is required of chemistry majors taking this degree.

Plan for B.S. Degree and Certificate of the American Chemical Society

	Units			Units	
	1st Sem.	2d Sem.		1st Sem.	2d Sem.
<i>First year</i>			<i>Second year</i>		
Chemistry 1A-1B	5	5	Chemistry 5A-5B	4	4
Physics 4A	—	4	Physics 4B-4C	4	4
Mathematics 3A-3B	3	3	Mathematics 4A-4B	3	3
* Health Education 21	2	—	† German 1, 2	2	—
* Psychology 1	—	3	* Speech Arts 3	—	3
* Biology 1 or 3	3	—	* Social Science	—	—
* English 1	3	—	* P. E. activity	½	½
* P. E. activity	½	½		16½	17½
	16½	15½			
	Units			Units	
	1st Sem.	2d Sem.		1st Sem.	2d Sem.
<i>Third year</i>			<i>Fourth year</i>		
Chemistry 101-102	4	3	Chemistry 111	—	3
Chemistry 103	—	3	‡ Advanced Chemistry	9	8
Chemistry 110A-110B	3	3	* Lit., Phil., and Arts	3	—
† German S3-S4	3	3	Electives	4	4
* Social Science	3	3		16	15
* Lit., Phil., and Arts	3	—			
	16	15			

* General education courses (nine units of chemistry and physics counted toward pattern requirements in general education).

† The B.S. degree may be obtained without the Certificate of the American Chemical Society by substituting for the German courses, six units of general education courses and six units of electives.

‡ Must include four units lecture and one unit laboratory in chemistry courses requiring three full year-courses in chemistry as prerequisites. Remainder may include courses in related subjects by approval of department.

Plan for A.B. Degree and Certificate of the American Chemical Society

	Units			Units	
	1st Sem.	2d Sem.		1st Sem.	2d Sem.
First year			Second year		
Chemistry 1A-1B	5	5	Chemistry 5A-5B	4	4
Physics 4A	—	4	Physics 4B-4C	4	4
Mathematics 3A-3B	3	3	Mathematics 4A-4B	3	3
* Health Education 21	2	—	† * German 1, 2	3	3
* Psychology 1	—	3	* Speech Arts 3	2	—
* Biology 1 or 3	3	—	* Social Science	—	3
* English 1	3	—	* P. E. activity	½	½
* P. E. activity	½	½			
	16½	15½		16½	17½
Third year			Fourth year		
Chemistry 101-102	4	3	Chemistry 111	—	3
Chemistry 103	—	3	‡ Chemistry electives	2	3
Chemistry 110A-110B	3	3	Minor (U. D.)	6	3
† German S3-S4	3	3	* Lit., Phil., and Arts	3	4
* Social Science	3	3			
* Lit., Phil., and Arts	3	—			
	16	15		14	13

* General education courses (nine units of chemistry and physics counted toward pattern requirements in general education).

† The A.B. degree may be obtained without the Certificate of the American Chemical Society by substituting for the German courses, six units of general education courses and six units of electives.

‡ Must include four units lecture and one unit laboratory from courses requiring three full year-courses in chemistry as prerequisites.

Plan for A.B. Degree for Related Professions

	Units			Units	
	1st Sem.	2d Sem.		1st Sem.	2d Sem.
First year			Second year		
Chemistry 1A-1B	5	5	Chemistry 5A-5B	4	4
* Physics 2A-2B	3	3	† * French or German	3	3
* Physics 3A-3B	1	1	* Speech Arts 3	2	—
* Mathematics 7A-7B	3	3	* Health Education 21	—	2
* English 1	3	—	* Biology 1 or 3	3	—
* Psychology 1	—	3	* Lit., Phil., and Arts	—	3
* P. E. activity	½	½	Elective	3	3
	15½	15½	* P. E. activity	½	½
				15½	15½
Third year			Fourth year		
Chemistry 101-102	4	3	Chemistry 111	—	3
Chemistry 103	—	3	Chemistry electives	3	2
Chemistry 110A-110B	3	3	* Social Science	3	—
* Social Science	3	3	Minor	3	3
* Lit., Phil., and Arts	3	—	Electives	7	7
* Elective	3	—			
Minor	—	3			
	16	15		16	15

* General education courses.

† Six units of general education courses may be substituted for the French or German.

Lower Division Courses

1A-1B. General Chemistry (5-5) Year, I, II

General principles of chemistry with emphasis on inorganic materials. Three lectures and six hours of laboratory per week. Qualitative analysis is included in the second semester. Prerequisites: Elementary algebra and plane geometry. Recommended: High school chemistry, physics, and additional mathematics.

(G)2A-2B. Fundamentals of Chemistry (3-3) Year, I

A general course including inorganic, organic, and biological chemistry for students not intending to take further work in chemistry. Emphasis is placed on applications of chemistry to everyday life. Two lectures and one laboratory period per week. Not open to students with credit for Chemistry 1A-1B.

5A. Elementary Quantitative Analysis (4) I

Theoretical consideration of the principles of gravimetric and volumetric analysis. Practice in standardizing reagents and analyzing samples. Two lectures, and two laboratory periods per week. Prerequisite: Chemistry 1A-1B, and facility in the use of logarithms and slide rule.

5B. Quantitative Analysis (4) II

Further work in the theory and practice of volumetric and gravimetric analyses and the study of electro analytical methods. Two lectures and two laboratory periods per week. Prerequisite: Chemistry 5A.

Upper Division Courses

101. Introductory Organic Chemistry (4) I

An introductory study of the chemistry of carbon compounds, both aliphatic and aromatic. The laboratory work illustrates properties and reactions of typical compounds and stresses development of technique. Three lectures and one laboratory period per week. Prerequisite: Chemistry 1A-1B.

102. Organic Chemistry Laboratory (3) II

Synthesis of typical aliphatic and aromatic compounds. Study of the theory and practice of laboratory operations. Approximately the last third of the course is devoted to the systematic qualitative analysis of organic compounds. Three laboratory periods per week. Prerequisite: Chemistry 101.

103. Intermediate Organic Chemistry (3) II

A continuation of Chemistry 101. Further study of types of aliphatic and aromatic compounds, their derivatives and interrelationship. Introduction to mechanisms of organic reactions. Three lectures per week. Prerequisite: Credit or registration in Chemistry 102.

105. Advanced Quantitative Analysis (4) II

Advanced work in the theory and practice of volumetric, gravimetric, and electroanalysis. Prerequisite: Chemistry 5A. Not open to students with credit for Chemistry 5B.

110A-110B. Physical Chemistry (3-3) Year, I

Theoretical principles of chemistry with emphasis on mathematical relations. Three lectures per week, problems and reports. Prerequisites: Physics 2A-2B, or equivalent; Math. 4B, or equivalent; Chemistry 5A-5B.

111. Physical Chemistry Laboratory (3) I, II

Physico-chemical apparatus and measurements, with emphasis on technical report writing. Discussion period and three laboratory periods per week. Prerequisite: Chemistry 110B, or concurrent registration with permission of the instructor.

114. Biochemistry (3) I

The chemistry of carbohydrates, fats, proteins, enzymes, vitamins and hormones. Nutrition, intermediary metabolism and chemotherapy are discussed. Three lectures per week. Prerequisite: Chemistry 103 or by permission of the instructor. Recommended: Elementary biology or zoology.

115. **Biochemistry Laboratory (2) II**
Laboratory work in the testing, synthesis, isolation and analysis of biochemical materials. Chemical rather than biological considerations are emphasized. Two laboratory periods per week. Prerequisites: Chemistry 5A and credit or registration in Chemistry 114. Recommended: Chemistry 155.
116. **Clinical Chemistry (3) II**
Lectures and laboratory work on the chemical composition of blood, urine, milk and body tissues. One lecture per week and two laboratory periods per week. Open primarily to students enrolled in the Laboratory Technician Curriculum. Prerequisite: Chemistry 115.
118. **Colloid Chemistry (2) II** (Offered 1951-52 and alternate years)
The theoretical principles of colloid chemistry and the preparation, properties and practical applications of colloids. Two lectures per week. Prerequisite: Chemistry 101, 110A and 110B.
122. **Glass Blowing (1) II**
Elementary training in the manipulation of glass. Prerequisite: Chemistry 1A-1B. One laboratory period per week.
127. **Advanced Inorganic Chemistry (3) II**
(Offered 1952-53 and alternate years)
A lecture course dealing with such topics as the physical basis of the periodic system, complex inorganic compounds, and the nature of the chemical bond. Three lectures per week. Prerequisite: Three years of chemistry.
- 144A-144B. **Principles of Chemical Engineering (3-3) Year, I**
(Offered 1952-53 and alternate years)
Industrial stoichiometry, flow of fluids, heat transfer, unit processes and types of industrial equipment. Three lectures per week, problems and reports. Prerequisite: Credit or registration in Chemistry 110A-110B.
154. **Organic Qualitative Analysis (3) II**
A systematic study of the identification of organic compounds and mixtures. One lecture and two laboratory periods per week. Prerequisite: Chemistry 5B or 105, 102 and 103.
155. **Instrumental Methods of Analysis (3) I**
Theory and practice of modern methods of instrumental analysis, including use of pH meters, colorimeters, spectro-photometers, and other analytical devices. Discussions, reports, field trips, special individual projects. One lecture and two laboratory periods per week. Prerequisite: Three year-courses in chemistry.
199. **Special Problems (1-3) I, II**
Supervised individual work in specialized branches of chemistry. Admission only by consent of instructor. Hours of credit to be arranged in each case. Open only to students who have shown ability to do A or B work in chemistry. Maximum credit, six units.
- Graduate Courses**
200. **Seminar (2-2) I, II**
An intensive study of some phase of advanced chemistry.
- | | |
|-------------------------------|----------------------------|
| A. Advanced Organic Chemistry | F. Advanced Biochemistry |
| B. Chemical Kinetics | G. Spectrographic Analysis |
| C. Chemical Thermodynamics | H. Photochemistry |
| D. Molecular Structure | I. History of Chemistry |
| E. Electrochemistry | |
290. **Bibliography (1) I, II**
Exercise 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 (1-3) I, II**
An individual study course designed primarily for candidates for the master's degree.
299. **Thesis (3) I, II**
Guidance in the preparation of a project or thesis for the master's degree.

COMPARATIVE LITERATURE IN THE DIVISION OF LANGUAGES AND LITERATURE

Major

A *major in arts and sciences* is not offered in comparative literature; however, courses in this field may be used as part of the English major in arts and sciences. For specific information, refer to English.

A *teaching major* is not offered in comparative literature; however, courses in this field may be used as part of the teaching major in English for the general secondary and general junior high school credentials with the approval of the departmental representative. For specific information, refer to the outlines of requirements for these credentials.

Minor

A *minor in arts and sciences* is offered in comparative literature. The minor must include at least 15 units of work in comparative literature, nine units of which must be from courses carrying upper division credit.

A *teaching minor* is not offered in comparative literature; however, courses in this field may be used as part of the teaching minor in English for the general secondary, the special secondary, the general elementary, and the kindergarten-primary credentials. For specific information, refer to the outlines of requirements for these credentials.

Lower Division Courses

- (G)52A-52B. **Masterpieces of World Literature (3-3) Year, I**
A chronological survey from Homer to modern times. The first semester stresses the classical epic and tragedy. The second semester, beginning with the Renaissance, stresses prose fiction, the drama, and the essay. Not open to students with credit for English 52A-52B.

Upper Division Courses

- (G)101A. **Modern Continental Fiction (3) II**
A survey of leading French, Russian, Scandinavian, Italian, and German novelists and short story writers, from Tolstoy and his associates to the present day.
- (G)115. **The Bible as Literature (3) I**
A study of the narrative, poetry, and prophecy of the King James version of the Bible. Readings, reports, lectures, and discussions.
- (G)138. **Introduction to Aesthetic Appreciation (1) I**
Major forms of expression and aesthetic experience in art, music and literature, presented by an interdepartmental staff through lectures, demonstration, and panel discussions. Not open to students with credit for Aesthetics 138.
- (G)140A-140B. **Masterpieces of French Literature (3-3) Year, I**
(Offered in 1951-52)
A cultural course designed to be given in introduction to the great French works from the Song of Roland through Cyrano de Bergerac, with emphasis on the 16th, 17th, 18th and 19th century authors. The contributions to world thinking of Rabelais, Montaigne, Moliere, Racine, Descartes, Pascal, Montesquieu, Voltaire, Rousseau, Hugo, Balzac, Flaubert, Maupassant, Zola, will be studied through lectures and outside readings.
- (G)142. **The Golden Age of German Literature (3) II**
Masterpieces of German Literature from the 18th and early 19th centuries. English translations read. No knowledge of German required.
- (G)152A-152B. **Survey of Drama (3) Year, I**
Study of selected tragedies and comedies from Asiatic, European, English, and American literature, with emphasis upon the human problems depicted therein and upon the timelessness of certain themes, such as those of Electra and Medea. Lectures, discussions, and reports on readings. Not open to students with credit for English 152A-152B.

159. *The Rise of Romanticism in European Literature* (3) II
Continental origins and growth of the romantic movement. Studies in the works of Rousseau, Goethe, Schiller, Lessing, Chateaubriand, Mme. de Staël, and others.

199. *Special Problems* (1-3) I, II

Students who have demonstrated ability in literary studies may enroll for work other than is outlined in the regular courses. Admission only by consent of the instructor with whom the work is to be done. Maximum credit, six units.

ECONOMICS IN THE DIVISION OF SOCIAL SCIENCES

Major

A major in arts and sciences is offered in *economics* for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: Economics 1A-1B; Business 14A-14B. Upper division requirements: 24 units in economics to include Economics 100A or 100B and 140. Six of the 24 units may be in related fields, selected with the approval of the departmental adviser. A minor is required.

A teaching major in social sciences is offered for the general secondary and general junior high school credentials. For a description of these majors, refer to the credentials. Assistance in selection of economics courses as part of the social science majors may be obtained by consulting with an adviser in the Economics Department.

Minor

A minor in arts and sciences is offered in *economics*. The minor consists of a minimum of 15 units, nine units of which must be in courses carrying upper division credit.

A teaching minor in economics is offered for the general secondary school credential or as part of the social science minor for the special secondary, general elementary, and kindergarten-primary credentials. For a statement of requirements, refer to these credentials.

Lower Division Courses

(G)1A-1B. *Principles of Economics* (3-3) Year, I, II

The basic principles of economics: Business organization and production; money, credit and banking, depression problems; prices, competition, and monopoly; income distribution; public finance; international trade; economic systems. Aims of course: Foundation for further study, business pursuits, and intelligent economic citizenship. Prerequisite: 1A prerequisite for 1B.

Upper Division Courses

100A. *Intermediate Economic Theory* (3) I

Advanced economic theory with special reference to value and distribution, the income approach and full employment policy. Prerequisite: Economics 1A-1B.

100B. *Intermediate Economic Theory* (3) II

Advanced economic theory with special reference to the application of economic theory to national and local economic problems. Prerequisite: Economics 1A-1B.

(G)102. *Comparative Economic Systems* (3) II

The economic aspects of laissez-faire and regulated capitalism, cooperatives, socialism, communism, nazism, fascism. Experience in Russia, Germany, United States, Great Britain. Criteria for evaluating economic systems. The individual and government in each system. Planning in a liberal capitalistic society.

105. *Economics of Consumption* (3) I (Not offered in 1951-52)

An analysis of the determination of consumer demands, the relationship of the consumer to the price system, the effects of consumption and saving upon income and employment, the effects of monopoly and advertising upon consumers' welfare.

110. *Economic History of Europe* (3) I

A general survey of economic development from the Middle Ages to the present. Particular attention is given to the impact of the Industrial Revolution on national economics, particularly on England's commerce and industry.

(G)111. *Economic History of the United States* (3) II

A comprehensive survey of American economic development and of national legislation in the field of industry and commerce.

127. *Agricultural Economics* (3) II (Not offered in 1951-52)

Major problems of finance, markets, conservation, overproduction, economic institutions and governmental policy, in relation to agriculture. Emphasis on regional problems.

128. *Urban Land Economics* (3) I

Real estate in its various aspects: Property rights, transfer of title, valuation, finance, selling, property management, taxation, insurance, city planning, etc., with special emphasis upon problems as they exist in San Diego.

(G)131. *Public Finance* (3) II

Principles and practices of taxation and public expenditures. Economic effects of public spending, debts and taxation. Financing social security and other services. Fiscal policy and prosperity. Relation to inflation and deflation. Special emphasis on social problems involved.

133. *Corporation Finance* (3) I, II

The corporate form of organization; instruments of long-time finance; methods of raising capital, efficient financial management, financing of reorganizations, and government control. Not open to students who have had Business 133.

135. *Money and Banking* (3) I, II

The elements of monetary theory. History and principles of banking with special reference to the banking system of the United States. Prerequisite: Economics 1A-1B.

140. *Statistical Methods* (3) I, II

Statistical method in the social sciences. Tabular and graphical presentation. Frequency and time series analysis. Index numbers and correlation techniques. Prerequisite: Mathematics A-B, and C, or equivalent. Not open to students with credit for Sociology 103, Psychology 104A, 104B.

142. *Business Cycles* (3) I

Fundamental factors in business cycles are analyzed and cycle theories are examined. Study of current business conditions begins early in the course and develops into practical application of forecasting methods to both business and other data. Prerequisite: Economics 1A-1B.

150. *Labor Problems* (3) I

A study of labor organizations and their policies, wages, strikes, unemployment, social insurance, child labor, labor legislation, plans for industrial peace, and other labor problems.

151. *Principles of Labor Legislation* (3) II

Federal, state and local laws and regulations concerning labor problems, industrial relations, and governmental policies with respect to labor; important court decisions; the make-up and functions of commissions and boards; labor union attitudes with respect to legislation and the courts.

166. Honors Course (Credit to be arranged) I, II
Refer to the Honors Program.

(G) 170. Government and Business (3) I, II

General survey of governmental activities affecting business; the state as an entrepreneur and manager; governmental assistance to business; governmental regulation of business in its historical, legal and economic aspects, including recent developments in the United States and abroad; proposed policies.

171. Transportation (3) I

The development of railway transportation; railroad financing; rates and rate making; governmental regulation; government operation of railroads during the war; recent development of motor and air transportation. Prerequisite: Economics 1A-1B.

172. Public Utilities (3) II (Not offered in 1951-52)

The growth of public utilities in the United States; economics of public utility rates; valuation; public regulation and its legal basis; public ownership. Prerequisite: Economics 1A-1B.

185. Social Insurance (3) I (Not offered in 1951-52)

Old age pensions, health insurance, unemployment insurance, and Social Security Act. Strength and weakness of existing systems.

190. International Economics—Principles (3) I

National welfare and foreign trade. Principle of comparative costs, comparative advantages in various nations. Foreign exchange and the balance of payments, financing foreign trade. Regulations over trade and obstructing factors. Techniques of exporting and importing. Doctrines of international trade.

195. International Economics—Problems (3) II

Important aspects of international cooperation and conflict in the economic sphere, conditions essential to future cooperation. The quest for foreign markets, raw materials, investment opportunities and population outlets. Commercial policies, international economic conferences and organizations. Colonial rivalries and postwar problems.

198. Investigation and Report (3) I, II

Designed to stimulate independent study and investigation; to furnish guidance in the collection, organization, and presentation of factual material; to improve the technique of term reports. For economics majors only.

199. Special Study (1-3) I, II

Designed exclusively for seniors with a major in economics. Maximum credit, six units.

Graduate Courses

200A-200B. Seminar in the Development of Economic Thought (2-2) Year I, II
A critical study of the development of economic thought and of contemporary economic thought, in order to provide a clearer understanding of major economic problems of the day.

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 (1-3)

An individual study course designed primarily for candidates for the master's degree.

299. Thesis (3)

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

EDUCATION IN THE DIVISION OF EDUCATION

Major

A major in arts and sciences is not offered in education; however, education is a major for the general elementary and kindergarten-primary credentials. For specific information, refer to the requirements for these credentials.

A teaching major is offered in education for the general elementary and kindergarten-primary credentials.

Minor

A minor in arts and sciences is offered in education. This minor consists of a minimum of 15 upper division units in education selected with approval of the chairman of the Division of Education.

A teaching minor is not offered in education.

Students will be admitted to education courses only when they are admitted to teacher education or have permission from the chairman of the Division of Education. Experienced teachers may take education courses for which they have the prerequisites. Students who take a minor in education must have been regularly admitted to teacher education. (See Admission to Teacher Education.)

Lower Division Courses

- A. Review of Arithmetic (0) I, II
H. Review of Handwriting (0) I, II
R. Review of Reading (0) I, II
S. Review of Spelling (0) I, II

Noncredit courses designed to increase competence in the skill subjects. For students who do not qualify on the respective sections of the Fundamentals Test required of all applicants to teacher education.

Upper Division Courses

- 100B. Methods and Materials of Instruction and Audio-Visual Aids
Major (2) Minor (2) I, II

Professional courses in specific teaching fields taken just prior to or concurrently with the first directed teaching assignment. Each course emphasizes the application of best practice with reference to each subject area named.

Subject fields for sections in 100B are as follows:

Offered in the Fall Semester

- 100B-A.—Methods in Art
100B-B.—Methods in Accounting
100B-E.—Methods in English
100B-HE.—Methods in Home Economics
100B-L.—Methods in Romance Language
100B-Ma.—Methods in Mathematics
100B-Me.—Methods in Merchandising
100B-Mu.—Methods in Music
100B-PE.—Methods in Phys. Ed. (Men)

100B-P.Sc.—Methods in Physical Science

100B-S.—Methods in Shorthand
100B-SA.—Methods in Speech Arts

100B-S.Sc.—Methods in Social Science

100B-SS.—Methods in Secretarial Subjects

100B-T.—Methods in Typing

Offered in the Spring Semester

- 100B-E.—Methods in English
100B-IA.—Methods in Industrial Arts
100B-L.Sc.—Methods in Life Science
100B-PE.—Methods in Phys. Ed. (Women)
100B-S.Sc.—Methods in Social Science

102A. Measurement and Evaluation in Elementary Education (3) I, II

The use of intelligence and achievement tests in the diagnosis and improvement of learning; construction of objective examinations; problems of evaluation in education; the elements of statistical techniques.

102B. Child Growth and Development (3) I, II

Study of the mental, emotional, social, and physical development during childhood and early adolescence. Directed observation required. General education course in family life education.

102C. Growth and Development of the Adolescent (3) I or II

Study of adolescent physiological, psychological, social, and emotional development. Field work with adolescent groups in the community is required.

102D. Measurement and Evaluation in Secondary Education (2) I or II

Problems of evaluation in secondary education, construction of examinations, the elements of statistics, the selection and interpretation of standardized measures, and appraisal of audio-visual instructional materials. Field work required. Prerequisite: Education 130.

105A. Introduction to Psychological Testing (3) I, II

The basic principles of testing. The selection and critical evaluation of group tests of intelligence, personality, aptitude, interest and achievement. Prerequisite: One of the following courses: Psychology 5, 11; Education 102A, 102D. Not open for credit to students with credit for Psychology 105A.

E112A. Methods in Teaching Americanization Classes (2) Extension only

Methods used in teaching the various grade levels found in Americanization classes, including those preparing for their naturalization. Includes discussion of new skills and techniques in learning to speak, read, and write English; aids in organizing and conducting classes; and in helping teachers to understand backgrounds of foreign born.

115A. History and Philosophy of Education (2) I, II

Historical backgrounds and underlying philosophies upon which the public school system has been established. Emphasis on the meaning of education, educational aims and values, and democracy and education. Prerequisite: Senior standing or the equivalent; minimum of 12 units of education.

115B. Secondary Education (3) I or II

An introduction to understanding the development of secondary education and its present status as a social institution. Topics developed include: Curriculum; teaching methods; audio-visual instructional materials; organization and administration; guidance; and objectives. Field work required.

116. Directed Teaching (3-12) I, II

Systematic observation, participation and teaching under supervision in the campus elementary school, the affiliated elementary, junior high and senior high schools. During each semester of student teaching a weekly conference period is required as indicated in the time schedule. Prerequisite: Admission to teacher education; education program approved by Coordinator of Elementary or Secondary Education. Any grade below C is unacceptable for a credential.

117A. Elementary Music Education (2) I, II

Objectives of music teaching; study of the child voice; and organization of song material by grades. Procedure in presenting rote songs, ear training, elementary notation, music reading, and part singing. Prerequisite: Music 7A, or the equivalent. Not open to students who have had Music 7B.

117B. Methods in Instrumental Music (2) I, II

The theory of organizing and conducting school bands and orchestras, and the selection of materials. Provides practical experience in conducting a children's orchestra and teaching sectional groups. Systematic planning for pupils of various ages and abilities.

119. Art in the Elementary School (2) I, II

Discussion of the elements and principles of art and their place in the art expression and appreciation of the elementary school child. Laboratory experience in elementary school problems. Not open to students taking the elementary credential. Prerequisite: Art 6A.

122. Social Studies in Elementary Education (2) I, II

The purpose, scope, organization and development of instructional procedures in the social studies in the elementary school. Development of curriculum units and the analysis of teaching materials.

123. Science in Elementary Education (3) I or II

Elementary science and its relation to instructional units in the social sciences, the construction and use of equipment, the effective use of audio-visual aids, the use of environmental resources, and the use of texts and supplementary material.

125. Curriculum in Elementary Education (3) Irregular

A survey of the following elementary subject areas: The language arts, mathematics, music, science, and the social sciences. Emphasis upon the selection of content, teaching methods, and materials as they relate to social needs, psychological principles, and the nature of the learner.

126. Literature in Elementary Education (3) I, II (Irregular)

Criteria for the selection of children's literature, children's reading interests, the development of units of instruction in the social studies, the use of the verse choir, dramatic readings and similar procedures, and the use of the library.

129. Arithmetic in Elementary Education (2) I or II

For teachers of arithmetic in the elementary and junior high school. Emphasis is placed upon the understanding of the systems of notation and language techniques. Opportunity will be given for the development of instructional materials and procedures.

130. Educational Psychology (2) I, II

To develop understanding of the applications of psychological research for effective classroom teaching. Observation and field work required. Prerequisite: Psychology I. Not open to students with credit for Psychology 130.

134. Behavior Problems in Early Childhood (1) Summer

Lectures and related readings on the typical behavior problems of two to twelve year olds, for teachers and parents.

136. Reading in Elementary Education (3) I or II

Scientifically developed procedures for determining reading readiness, beginning reading, independence in work recognition, vocabulary development, word analysis, standards of attainment, types of reading programs, and the selection, preparation and use of reading materials.

138. Workshop in Family Life Education (3) Summer

Series of lectures, discussions, and laboratory sessions devoted to furthering understanding of the problems of family life education. The student will have an opportunity to develop units suitable for a program of family life education. Community agencies will participate in the workshop.

143. Adult Education (3) (Irregular)

A study of the aims and scope of adult education and its function as a part of the public school system. Individual and group work will be emphasized. Admission by permission of the instructor.

144. Diagnosis and Remedial Treatment of Difficulties in Reading (3) I or II

The causes of reading difficulties and the procedures for diagnosis and remedial treatment. Practical work with children with reading problems. Primarily for principals, supervisors and teachers-in-service. Prerequisite: Education 102B or Education 102A, and Education 136, or one year of successful teaching experience.

145A. Organization and Administration of Music Education (2) I, II

Theory of the general principles of music administration; correlation of music with the various subjects in the public schools; music tests; creative work.

146. Education Practicum (Kindergarten-Primary) (4) I, II

A continuation of Education 148 and will accompany Education 116 in the kindergarten. A study of the theory of early childhood education providing experience with children of nursery school and kindergarten ages. Prerequisite: Education 147, 148.

146B. Interpretation of Early Childhood Behavior (3) Summer

For kindergarten-primary teachers treating the analysis and interpretation of early childhood behavior. Emphasis on understanding and interpreting the causative factors in typical behavior of children to parents, social workers, teachers, and others concerned with the guidance of kindergarten-primary children.

147. Education Practicum (10) I, II

Required of all students who expect to receive a credential which will qualify them to teach in the kindergarten or in the elementary school. Students should take the course during the next semester after admission to teacher education, which is usually the first semester of the junior year. Registration is strictly limited to those who have been approved by the Committee on Admission to Teacher Education.

The content of the Education Practicums include both classroom participation (directed teaching) and the study of the principles of education. The course includes Reading (2); Social Sciences in the Elementary School (2); Language Arts (2); Arithmetic (2); Observation (1) Audio-Visual-Radio Instruction (1) is integrated with the course.

148. Education Practicum (12) I, II

This course is a continuation of Education 147 and is required of all students who are candidates for the general elementary credential or the kindergarten-primary credential. An extended analysis is made of the psychology of education in various fields and application is made through directed teaching in grades 4 to 6. The course includes Elementary Science Education (1); Elementary Art Education (2); Elementary Music Education (2); Educational Psychology (learning process and theory of audio-visual education) (2); Curriculum in Elementary Education (2); Directed Teaching (2); Audio-Visual-Radio Instruction (1). Prerequisite: Education 147.

149A. Laboratory in Elementary Education (3) Summer

A general course in observation and theory, including a study of arithmetic, reading, language, music, science, social studies, art, spelling. Students in this course will observe in the summer demonstration school and discuss with the staff the teaching procedures.

149C. Laboratory in Rural Education (6) Summer

Observation in a one-room multigraded summer demonstration school. Students will observe demonstrations, discuss procedures with the staff, and prepare material for their own schools.

149D. Workshop in Elementary Education (3 or 6) Summer

To meet the needs of individual or groups of teachers who desire to study selected problems in elementary education. The observation of classroom teaching will be provided for members in attendance. Interested persons should correspond with the Coordinator of Elementary Education, San Diego State College.

155. Guidance in Elementary Education (3) Summer

A study of the basic principles of guidance and their function in the educational process as applied in the elementary school.

156. Guidance Conference (1) Summer

A series of lecture and discussion sessions centering on current problems in counseling and guidance. Designed to serve the needs of any person desiring to keep informed of developments in this area. Admission upon permission of the director of this conference.

158. Supervision of Child Welfare and Attendance (3) Summer

Content includes laws relating to children, guidance principles, social case work, agency relationships, conference techniques, home visitation methods, employment supervision, attendance work, child accounting, familiarity with testing techniques.

161. Legal Aspects of Education (3) I or II

A study of the school law of California, important court decisions, rulings of the California State Superintendent of Public Instruction and the Attorney General, historical and current trends, and comparative data from throughout the United States.

171. Audio-Visual Conference (1) Summer

A series of lectures, discussions and demonstrations, centering on problems in the use of audio-visual instructional materials. Designed for teachers, administrators, audio-visual representatives, and others interested in current developments in this area. Course may be taken twice for credit.

174. Audio-Visual-Radio Education (3) I, II

A study of audio-visual-radio aids as they affect learning. Analysis and development of materials of instruction and their presentation; operation of equipment.

174BE. Audio-Visual Business Education (3) Summer

A review of the skills and knowledges necessary to use audio-visual aids, followed by intensive study and research in the literature available and by practice with the materials and techniques that apply to business education.

175. Creating Audio-Visual Materials for Classroom Use (3) I or II

Practice in the creation and evaluation of instructional materials, such as 35 mm. film strips, 16 mm. films, scripts, recordings and other audio-visual materials. Prerequisite: Education 174, or equivalent.

176. Problems of Speech Correction and Articulation (3) (Irregular)

Analysis and discussion of the major articulatory problems as encountered in public school work, particularly in California. Required of all students for the speech correction credential. Not open to students with credit for Speech Arts 176.

177. The Teaching of Lip Reading (2)

History, theory and methods of lip reading. Aids for the classroom teacher; program and materials of instruction for the specialized teacher. Opportunities for practice teaching are offered. Not open to students with credit for Speech Arts 177.

178. Problems of the Hard of Hearing (2)

The adjustment of the hard-of-hearing group with emphasis on the public school child. State and county hearing programs; technique of audiometry; use of hearing aids; educational, classroom, and social problems.

179A-179B. Nervous Speech Disorders (3-3) Year, I

Classification and study of speech defects and disorders. Training in corrective technique for public schools; observation. Required for the Special Secondary Credential in Correction of Speech Defects. Not open to students with credit for Speech Arts 179A-179B.

181. Exceptional Children (3) I

Characteristics and adjustment problems of mental, physical, and emotional deviates; emphasis upon the mentally handicapped.

182. Curriculum and Methods for Mentally Retarded Children (3) II

Selection, organization and presentation of curricular materials for mentally retarded children.

183. Practicum for Teaching Mentally Retarded Children (3) Summer

Analysis and interpretation of educational procedures utilized with the retarded learner. A demonstration class will be available for observation. Education 182 must be taken prior to, or concurrently with, Education 183.

184A. The Secondary School (4) I, II

To orient the student toward his function as a teacher in the public secondary schools, including basic principles, history and philosophy of education, and audio-visual instruction, and to understand the school as a social institution. Field work required.

184B. Development and Learning (4) I, II

To acquaint the student in secondary education with the nature of development and the learning process, with consideration of mental hygiene, guidance and the place of audio-visual aids. Field work required.

184C. The Teaching Process (4) I, II

To develop teacher competency at the secondary level in relationships and planning with the pupil, the community, and the profession, including classroom management, audio-visual education, lesson planning, evaluation, and co-curricular activities. Field work required.

188. Techniques of Pupil Appraisal (3) I or II

A study of, and practice in, techniques of collecting, assembling, and interpreting data about individual pupils for guidance purposes. Field work required. Prerequisite: Education 102D or 102A, or consent of instructor. Not open to students who have credit for Psychology 105A or 105B.

189. Workshop in Secondary Education (3 or 6) Summer

Designed to meet the needs of individual or groups of teachers who wish to develop or continue the study of some problem with the consultation of the College Staff and the San Diego County Curriculum Staff.

191. Driver Education (2) Summer

A workshop type course designed to prepare teachers of the course in high school. Enrollment by permission of the instructor.

199. Educational Problems (1-6) I, II, and Summer

For senior and graduate students in education who have shown ability to work independently. Problem to be chosen after consultation with a staff member. Admission by permission of the staff. Credit and hours to be arranged.

Graduate Courses

For general requirements for admission to graduate courses, see statement on Admission to Graduate Status in section on Admission and Registration. In addition to these general requirements, 12 units of professional education are prerequisite for enrollment in all graduate courses.

207. Educational Sociology (3) Summer

A study of the social, economic, political and moral setting in which present day American education functions. Prerequisite: Education 115A, or equivalent, teaching experience.

220. Advanced Educational Psychology (3) I, II

Advanced study of the research and its application to learning and human growth. Prerequisite: Educational Psych. 130, or equivalent, teaching experience.

230. Guidance Problems in Secondary Education (3) I, II

Individual and group study of the theory and practice of guidance with emphasis upon practical problems of the members of the class.

232. Problems in Vocational Guidance (3) I or II

To prepare teachers for vocational guidance in the secondary schools. Includes occupational information, vocational aptitude measurement, and educational guidance. Prerequisite: Education 230, or equivalent.

233. Guidance Counseling Techniques (3) I, II

Designed for school counselors. To stress the understandings and procedures necessary for effective interviewing. Prerequisite: Education 230, or equivalent.

233B. Guidance Counseling Techniques (3)

Continuation of the work of Education 233. Prerequisite: Education 230 and 233, or equivalents.

237. Research in Guidance Problems (1-3) I, II

Individual study by graduate students who have demonstrated exceptional ability and a need for such work. Admission by permission of the Coordinator of Secondary Education and instructor.

238. Field Work in School Guidance (3) I or II

Application of the principles and procedures in testing, counseling, and related personnel work in the public schools. Weekly seminar sessions with college and cooperating staff. Prerequisite: Permission of instructor and 12 units in guidance and related areas.

239. Workshop in Pupil Personnel Services (3) Summer

Application of principles and procedures to specific situations for improvement of pupil personnel services. Individual problems emphasized. Prerequisite: Teaching experience and permission of director of workshop.

241. Problems in the Teaching of Arithmetic (3) I or II, Summer

A study of research and practice in the methods of teaching and in the curriculum of elementary and junior high school arithmetic. Prerequisite: Education 129 or equivalent.

242. Problems in the Teaching of Reading (3) I, II

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. Prerequisites: Education 136 and 144 or equivalents.

243. Seminar in Social Studies in Elementary Education (3) I or II, Summer

Advanced study of problems in teaching social studies in the elementary school with emphasis on the study of the scientific research in the field. Prerequisite: Permission of instructor.

244. Seminar in Language Arts in Elementary Education (3) I or II, Summer

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. Prerequisite: Permission of instructor.

245. Seminar in Elementary Education (3) I or II

A study of the methodology of research with particular reference to the basic research in the psychology and teaching of the elementary school subjects. Prerequisite: 12 units in elementary education and permission of the instructor.

250. Curricular Problems in Secondary Education (3) I, II

Present status and development of the secondary school curriculum. Emphasis upon individual study and development of solutions of problems of the students. Prerequisite: 12 units in secondary education and permission of the instructor.

252. General Education in the Secondary School (3) Summer

A course designed for teachers in service. A study of the function and implementation of general education in the secondary school. Prerequisite: 12 units in secondary education and permission of the instructor.

254. Advanced Problems in Secondary School Instruction (3) I, Summer

An analysis of the scientific research and philosophical principles in secondary school instruction. Prerequisite: Teaching experience and permission of instructor.

256. Recent Trends in Secondary Curriculum (3) I or II, Summer

Current practices and trends in secondary schools. Extensive individual work on related problems of interest to members of the class. Prerequisite: 12 units in secondary education and permission of the instructor.

257. Workshop in Intercultural Education (4)

A cooperative 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. Enrollment only by application to the Chairman of the Division of Education.

258. Research in Curricular Problems (1-3) I, II

Individual study by graduate students who have demonstrated exceptional ability and a need for such work. Admission by permission of the Coordinator of Secondary Education and instructor.

260. **Federal, State, County and City School Organization and Administration** (3) I, Summer
A study of the federal, state, county and city school organization, administration and supervision, including school law.
262. **The Organization and Administration of Elementary Schools** (3) I or II, Summer
A study will be made of the problems of personnel, local finance, curriculum, plant, community relations, and legal aspects of elementary schools. Required as a prerequisite to Education 266. Prerequisite: Teaching experience, valid General Elementary Credential, and consent of the instructor.
263. **The Organization and Administration of the Secondary School** (3) I or II, Summer
Topics will cover all aspects of the duties of a secondary school administrator, including personnel, finance, curriculum, equipment and supplies, public relations, transportation, and law. Prerequisite: Possession of a valid General Secondary Credential and permission of the instructor.
264. **Elementary School Supervision** (3) I or II, Summer
Principles and practices of supervision and methods of evaluating instruction and the curriculum in elementary education. Prerequisite: General Elementary Credential, teaching experience, Education 260, 262, or equivalents, and permission of the instructor.
265. **Secondary School Supervision** (3) I or II, Summer
For those who will be responsible for the supervision and evaluation of the curriculum and teaching methods in the secondary school. Prerequisite: Possession of a valid General Secondary Credential, teaching experience, and permission of the instructor.
266. **Field Work in Elementary School Administration and Supervision** (2) II
Study of the administration and supervision of an elementary school, for the Elementary School Administration and Supervision Credentials. Field project required of all students under the direction of a college staff. Prerequisite: Education 262 or 264, or equivalent.
267. **Field Work in Secondary School Administration and Supervision** (2) II
Study of practices as they are found in secondary schools relative to administration and supervision; to insure direct contact with existing programs and procedures through faculty guided projects. Prerequisite: Education 263 or 265, or equivalent.
268. **Seminar in School Administration** (3) Summer
An intensive study of selected problems in finance, business administration, and other topics 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) II, Summer
A study of public school finance at state and local levels; an analysis of the business administration of schools; a study of school law as it applies to school finance, administration and other aspects of public education.
271. **Supervision of Student Teaching** (2) I, II
Study of selection, orientation, induction, counseling and evaluation of credential candidates and student teachers; and helping student teachers plan lessons, conduct classroom learning, analyze pupils' difficulties and achievement. Open to experienced teachers interested in the teacher education program.
- 274A. **Utilizing Audio-Visual Materials in the Classroom** (3) I
A critical analysis of research evaluating the use of visual, auditory, and other sensory materials in education. Prerequisite: Education 174, or equivalent.
275. **Administering the Use of Audio-Visual Materials** (3) II, Summer
Organizing, supervising, and coordinating audio-visual centers as an integral part of educational systems. Prerequisite: Education 174, or by permission of the instructor.

278. **Educational Leadership** (3) I, II, Summer
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. Prerequisite: Permission of the instructor.
290. **Procedures of Investigation and Report** (2-3) I, II, Summer
Emphasizes procedures in selecting and writing a project or thesis. Methods of investigation and reporting data. Extensive survey of an area of professional literature to analyze techniques and style. Separate sections for elementary and secondary levels.
298. **Special Study** (1-3)
An individual study course designed primarily for candidates for the master's degree.
299. **Thesis** (3)
Guidance in the preparation of a project or thesis for the master's degree.
316. **Directed Teaching** (3-3) I, II
Systematic observation, participation, and teaching under supervision in an affiliated school. Thirty clock hours of student teaching will usually earn one unit of credit, but the credit finally allowed will depend upon the nature and quality of the teaching done. Any work below a C grade is unacceptable for a credential.
No student can enroll in this course until he has completed at least 10 units of work in education and has been admitted to candidacy for the teaching credential.
During the semesters in which the student takes his assignments in student teaching, he must meet with the college supervisor one hour each week for conference and discussion of problems encountered in his teaching.
Students who have had student teaching in preparation for the junior high school or special secondary credential should confer with their departmental and educational advisers concerning partial fulfillment of this requirement as the result of having completed the student teaching required for the credentials mentioned above.

ENGINEERING

IN THE DIVISION OF PHYSICAL SCIENCES

Major

A *major in arts and sciences* is offered in *engineering* for the B.S. degree. Courses in the major are in addition to 45 units in general education courses. Lower division requirements for all engineering options: Chemistry 1A-1B; Physics 4A-4B-4C; Mathematics 3A-3B, 4A-4B; Engineering 21 and 23, or their equivalents. Refer to Engineering Curricula in section of the bulletin on Preprofessional and Vocational Curricula for additional requirements for various options. Upper division requirements: A minimum of 36 upper division units. Specific requirements for the various engineering options are listed in the Engineering Curricula in section of the bulletin on Preprofessional and Vocational Curricula. A minor is not required of engineering majors.
A *teaching major* is not offered in engineering.

Minor

A *minor in arts and sciences* is offered in engineering. The minor must include at least 15 units in engineering, nine units of which must be from courses carrying upper division credit. The courses selected must be a logical sequence approved by faculty adviser.
A *teaching minor* is not offered in engineering.

Lower Division Courses

- 1A-1B. **Plane Surveying** (3-3) Year, I
Two lectures and one three-hour field period per week. Semester I: Use, care and adjustment of surveying equipment. Introduction to standard procedures and techniques. Prerequisites: Engineering 2, or equivalent, Math. D, and sophomore standing.
Semester II: Computations and map making; land, topographic, and city surveying.
Prerequisite: Engr. 1A.

2. Mechanical Drawing (3) I, II

Freehand lettering, use and care of drafting equipment, simple orthographic projection, introduction to problems of dimensioning. Open to students lacking credit for a year course in senior high school mechanical drawing. Not open to students with credit for Industrial Arts 2.

21. Descriptive Geometry (3) I

Fundamental principles of descriptive geometry and their application to engineering problems. Solutions of point, line and plane problems; curved lines and surfaces; intersections of surfaces. One lecture and two three-hour laboratory periods per week. Prerequisite: Engr. 2, or equivalent, and sophomore standing.

22. Machine Drawing (3) II

Standard drawing methods and procedures, complete sets of working drawings of simple machine parts, gears and cams; includes tolerance dimensioning, sectioning, threads and fasteners. One lecture and two three-hour laboratory periods per week. Prerequisites: Engr. 21, Math. 3A-3B.

23. Materials of Engineering (2) II

A concise presentation of the physical properties of the common materials used in structures and machines, with brief descriptions of their manufacture and fabrication. Two lectures per week. Prerequisite: Sophomore standing.

Upper Division Courses**100A-100B. Elements of Electrical Engineering (3-3) Year, I**

Theory and characteristics of electrical equipment with emphasis on industrial applications. Lectures and problems. Semester I: Direct current circuit analysis. D. C. motors and generators. Introduction to alternating current circuits. Prerequisites: Math. 4A, Physics 4B, or permission of the instructor. Semester II: Alternating current circuit analysis. Transformers, alternators, induction and synchronous motors, conversion apparatus, and transmission lines. Prerequisite: Engr. 100A.

101A. Electrical Engineering Laboratory (2) I

Laboratory determination of the characteristics of direct current machinery and circuits, single phase alternating current circuits. One three-hour lab. and report per week. Prerequisite: Engr. 100A, or taken concurrently.

101B. Electrical Engineering Laboratory (2) II

Laboratory determination of the characteristics of single phase and polyphase circuits, machines, and related equipment. One three-hour laboratory period and report per week. Prerequisite: Engr. 100B, or taken concurrently.

102A-102B. Analytical Mechanics (3-3) Year, I

Lectures and problems. Emphasis on engineering applications. Semester I: Principles of statics which deals with the conditions of equilibrium of bodies acted upon by forces. Prerequisites: Physics 4A-4B, Math. 4A. Semester II: Principles of dynamics which deals with the fundamentals of rectilinear and curvilinear motion of particles and rigid bodies, and the rotation of rigid bodies. Prerequisite: Engr. 102A.

104. Communications (3) II

Power amplifiers, oscillators, modulators and detectors. Radio transmitters and receivers for amplitude modulation and frequency modulation. Television systems. Antennas and radio wave propagation. Prerequisite: Physics 102 or permission of the instructor.

105. Fluid Mechanics (3) II

The statics and dynamics of incompressible and compressible fluids. Viscosity, fluid friction. Dimensional analysis. Fluid measuring instruments. Flow of compressible and incompressible fluids in pipes. Flow of liquids in open channels. Pumps. Prerequisites: Mathematics 4A, Physics 4A, Engineering 102A, and Engineering 127.

106. Fluid Mechanics Laboratory (2) II

Characteristics of fluid measuring instruments. Fluid flow through pumps, etc. One three-hour laboratory and report per week. Prerequisite: Engineering 105 or concurrent registration.

122. Machine Design (4) I

Individual design of a useful machine encompassing fundamental considerations of simple machine parts. Practical design methods utilizing professional literature are stressed. Three lectures and one three-hour laboratory period per week. Prerequisites: Engr. 23, 102A, 140.

124. Radio Measurements (2) II

A laboratory course on measurements of the parameters of resonant circuits at radio frequencies. Study of the properties of oscillators, modulators, detectors and wave guides. Prerequisite: Previous or concurrent enrollment in Engineering 104. Students with credit in Physics 124 may not receive credit for this course.

127. Engineering Thermodynamics (3) I

An introduction to the basic principles of thermodynamics; laws of perfect gases, vapors and mixtures; cycles. Applications to engineering problems such as the analysis of heat, power, and refrigeration systems, and steady-flow processes. Lecture and problems. Prerequisites: Mathematics 4A and Physics 4B.

128. Applied Engineering Thermodynamics (3) I

The study of various types of heat power equipment; steam generation, turbines, reciprocating engines and auxiliaries; fuels and lubricating oils; gas and oil engines, gas turbines, refrigeration and compressors. The practical application of basic theory to proper, efficient operating practices is stressed. Lectures and problems. Prerequisite: Engineering 127.

129. Heat Power Laboratory (2) I

Testing of steam generators and heat balance of same; steam turbine; reciprocating engine; internal combustion engines; flue gases, lubricating oils and boiler feed water. Emphasis upon standardized testing procedures, approved by SAE and ASME, and standard operating procedures. One three-hour laboratory period and report per week. Prerequisite: Engineering 127.

130. Route and Construction Surveying (3) I

Application of surveying to engineering problems. Methods of route surveys for highways, railroads, utilities. Construction surveys for buildings and other structures. Earthwork computations. Two lectures and one three-hour field period per week. Prerequisite: Engr. 1B.

140. Strength of Materials (3) II

Elastic properties and strength of engineering materials. Analysis of types of failures. Stress analysis and deformation of simple structural and machine members. Photoelasticity. Lecture and problems. Prerequisite: Engr. 102A.

141. Materials of Engineering Laboratory (2) II

Theory and operation of testing machines and auxiliary apparatus. Conduct of tests to determine significant characteristics of commonly used engineering materials. Included are heat treatment of metals, metallographic tests, and photoelasticity. One three-hour laboratory and report per week. Prerequisite: Engr. 140, or taken concurrently.

142. Stress Analysis (3) I

Determination of stresses in trusses, beams, and frames. Combined stresses; space structures; general theorems relating to elastic systems; statically indeterminate structures; deflections; analytical and graphical methods of solution. Lectures and problems. Prerequisites: Engr. 102A-102B, 140.

145. Internal Combustion Engines (3) II

Application of theory of thermodynamics to internal combustion engines. Essential features of design, operating characteristics, and application of gasoline, diesel, and gas engines, and the gas turbine. Lectures and problems. Prerequisites: Physics 4C, Math. 4A. Recommended: Engr. 128.

150. Industrial Electronics (3) II

Photoelectricity and its applications; rectification and inversion; theory and applications of thyatrons and ignitrons including welding; radio-frequency heating; electrostatic precipitation; motor control and introduction to servomechanisms. Prerequisite: Physics 102.

156. Aerodynamics (3) II

Mechanics and thermodynamics of air; wing characteristics; drag; wind tunnel testing technique; propellers and power plants; aircraft performance; stability and control. Introduction to compressible aerodynamics. Lectures and problems. Prerequisites: Engr. 102A-102B.

180. Principles of Engineering Economy (3) II

Analysis of the costs of development and promotion, construction, operation, depreciation and depletion. Capital recovery, income, return and yield. Valuations and appraisals, cost analysis and financial analysis. Application to engineering problems. Prerequisite: Senior standing.

199. Senior Report (2) I, II

Investigation of specific problems of advanced nature. Preparation of report. Prerequisite: Advanced senior standing.

NOTE.—In laboratory courses special emphasis is placed upon the preparation of neat, concise, complete and intelligent reports.

ENGLISH**IN THE DIVISION OF LANGUAGES AND LITERATURE****Major**

A *major in arts and sciences* is offered in *English*. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: At least 15 units of work, including English 1 or 41, and 12 units of electives, of which six must be in a year course. Upper division requirements: A minimum of 24 upper division units in English and comparative literature, selected with the approval of a departmental representative; two years of lower division work in a foreign language or the equivalent reading knowledge of a language is strongly recommended. A minor is not required of students majoring in English.

Prospective majors of sophomore standing may, with the consent of the course instructor and subject to general college regulations (see section on Lower Division and Upper Division Courses), substitute six units of upper division electives for six units of lower division work, such upper division units to be selected from the following: English 101A, 116A, 116B, 118A, 118B, 119A, 119B, 126A, 126B, 143A, 143B.

Students of junior or senior standing may substitute for any deficiencies in lower division requirements in English (except English 1 or 41) an equivalent number of units of upper division courses selected from the following: English 101A, 116A, 116B, 118A, 118B, 119A, 119B, 120A, 120B, 126A, 126B, 143A, 143B, 151, 159.

A *teaching major in English* is offered for the general secondary or junior high school credential. For specific information, refer to these credentials.

Minor

A *minor in arts and sciences* is offered in *English*. The minor consists of a minimum of 15 units, nine units of which must be in courses carrying upper division credit.

A *teaching minor* is offered in English for the general secondary, the special secondary, the general elementary, and the kindergarten-primary credentials. For specific information refer to the outlines of requirements for these credentials.

Comparative Literature

For courses in world literature, see Comparative Literature; these courses give credit toward the English major or minor or toward the minor in Comparative Literature.

Credit in Course Sequences

All elective year courses in the department may be begun in either semester, and either semester may be taken singly for credit.

Lower Division Courses**A. English Fundamentals (2) I, II**

The elements of composition, including drill in grammar and usage; exercises in vocabulary building and in fundamental reading skills; theme writing. Credit in this course is equivalent to passing the English A examination and may be counted toward graduation as an elective but not to satisfy lower division English requirements in any curriculum.

R. Reading Laboratory (0) I, II

A semi-tutorial service offered by the English Department to those wishing to improve reading ability, or secure individual help with study problems. Open to all students at any level of college work. Consult department chairman.

W. Writing Laboratory (0) I, II

A semi-tutorial service offered by the English Department to those wishing assistance in writing projects, either remedial or advanced. Open to students at any level of college work. Consult department chairman.

(G)1. Freshman Composition (3) I, II

Study and practice in the expression of ideas and factual materials; principles of organization and of effective style, with emphasis on exposition. Prerequisite: Satisfactory English A examination or credit in English A.

(G)2A. Freshman Literature: Imaginative (3) I, II

Training in reading with insight and vividness.

(G)2B. Freshman Literature: Essays and Articles (3) I, II

Designed to develop college reading skills through practice in the analysis of materials at various levels of difficulty.

10. Recreational Reading (1) I, II

Development of personal tastes for leisure-time reading through lectures and written reports. May be taken a second time with new materials.

20. Latin and Greek Word Derivation (3) I

A general and elementary course in philology. Study of Latin and Greek roots of most frequent occurrence in English, and of the English words derived from them. No prerequisite. Not open to students with credit for General Language 20.

50A-50B. Survey of American Literature (3-3) Year, I

Semester I: Major American writers from the beginning to 1860. Semester II: American literature from 1860 to the present.

(G)52A-52B. Masterpieces of World Literature (3-3) Year, I

A chronological survey from Homer to modern times. The first semester stresses the classical epic and tragedy. The second semester, beginning with the Renaissance, stresses prose fiction, the drama, and the essay. Not open to students with credit for Comparative Literature 52A-52B.

56A-56B. Survey of English Literature (3-3) Year, I

The study of some important works of English literature from the Anglo-Saxon period through the Victorian age, with emphasis upon the literary history of each period.

60A-60B. Literature and Personality (3-3) Year, I

The close study of a limited number of the great creators of literature. The goal of the course is to derive, from markedly different specific works, orderly and generalized methods for the interpretation of great literature.

(G)61. Sophomore Composition (3) I

An elective course designed to give further training to the student who wishes practice in writing beyond the freshman level. Prerequisite: English 1 or equivalent.

62. The Short Story (3) II

A practical course in writing, including a study of short story techniques and purposes, and the writing of complete short stories. Prerequisite: English 1 or equivalent.

63. Foundations of the Language (3) II

An introduction to the study of the changes of form and meaning in English words with special emphasis on semantics.

Upper Division Courses**(G)106. Creative Writing (3) I**

A writing workshop in which students are given opportunity to criticize each other's work. Emphasis on narrative and description, but freedom to pursue whatever writing forms may interest the student most. May be taken a second time with new material. Not open to students with credit for Journalism 106.

110. Recreational Reading (1) I, II

An advanced course in the group reading of modern drama, poetry and fiction.

113. American English (3) I

The development of American English; regional and cultural differences in pronunciation, grammar, and vocabulary.

116A-116B. The Age of Elizabeth (3-3) Year, I

Semester I: Poetry and prose, exclusive of drama. Semester II: The drama to 1642, excluding Shakespeare.

(G)117A-117B. Shakespeare (3-3) Year, I

The first semester gives special emphasis to the histories and comedies; the second, to tragedy and the dramatic romances.

118A-118B. Eighteenth Century English Literature (3-3) Year, I

The first semester emphasizes the social satire of Swift, Pope, Addison, Steele, Dryden, Gay, Prior; and also the first stirrings of the romantic revolt in a number of important poems and prose works. The second semester is devoted to Johnson and Boswell and their circle and to a significant romantic literature antedating the romantic outburst.

(G)119A. English Romantic Poetry (3) I

The culmination of the romantic movement in the poetry of Wordsworth, Coleridge, Byron, Shelley, and Keats, in relation to the thought of the revolutionary period.

119B. The Victorian Poetry (3) II

Tennyson and Browning with their contemporaries and successors, relating English poetry to nineteenth century life and thought.

120A. The Seventeenth Century: Milton (3) II (Alternate years)

The poetry and major prose works of Milton, with stress on the development of his art and mind; the political and religious background and the events in which Milton participated.

120B. The Seventeenth Century: Milton's Contemporaries (3) II (Alternate years)

The seventeenth century poets and prose writers, excluding Milton; the Metaphysical and Cavalier poets; the beginnings of the essay and biography.

126A. Romantic and Victorian Prose (3) I

Romantic and mid-Victorian prose writers, including Coleridge, Hazlitt, Lamb, DeQuincey, Carlyle, Landor, Macaulay, and Mill, related to the literary, political, and social movements of the period.

(G)126B. Late Nineteenth Century British Prose (3) II

The essays of Arnold, Thomas Huxley, Newman, Pater, Ruskin, and Stevenson. Study of scientific, aesthetic, and ethical backgrounds.

129. Contemporary British Literature (3) II

Selected prose and poetry of England and Ireland from 1914 to the present, including Shaw, Yeats, Synge, Joyce, Maugham, Huxley, D. H. Lawrence, Eliot, the Oxford poets, and the principal authors belonging to the two wars.

131. American Literature: 1820-1860 (3) I

The study of the important romantic writers, with emphasis on the New England group.

132. The Frontier and American Literature (3) I, II

The influence of the frontier upon American literature studied through various regions and movements. Examinations of source materials, biographies, and representative writers.

133. American Literature: 1860-1910 (3) II

The rise of realism in American literature. Influences, foreign and native, which promoted the movement. Definition of realism. The literary creed of the realists. The romantic attack and the realist defense.

(G)134. American Literature: 1910 to the Present (3) I, II

Ideas and forms in representative poetry and prose.

135. American Colonial and Revolutionary Literature (3) I

The Puritan system of thought and way of life, and the literary and intellectual movements of the eighteenth century, studied in the works of such representative writers as Mather, Franklin, Paine, Freneau, and Brockden Brown.

143A-143B. The English Novel (3-3) Year, I

The history of the English novel from its beginnings to the present century. Emphasis in the first semester will be on the eighteenth century and in the second semester on the nineteenth century.

(G)149. The Study of Poetry (3) II

A course proceeding from simpler to more complex poetic productions, and designed to bridge the widening chasm between the poet and the ordinary man. Emphasis on current directions in poetry, and on poetry as an oral and auditory art.

151. Chaucer (3) I

A study of Chaucer's works, with emphasis on "The Canterbury Tales" and "Troilus and Criseyde."

(G)152A-152B. Survey of Drama. (3-3) Year, I

Study of selected tragedies and comedies from Asiatic, European, English, and American literature, with emphasis upon the human problems depicted therein and upon the timelessness of certain themes, such as those of Electra and Medea. Lectures, discussions, and reports on readings. Not open to students with credit for Comparative Literature 152A-152B.

162. Magazine Fiction (3) I

Coaching in constructing and writing short stories for commercial publications. Admission by consent of the instructor. Not open to students with credit for Journalism 162.

166. Honors Course (Credit to be arranged) I, II

Refer to the Honors Program.

191. Advanced Composition (3) I

A course designed for prospective teachers of secondary school English. This is not a methods course, but a content course in grammar, composition, and journalism. Required of all teaching majors in English; open to other students as an elective.

192. The English Language (3) II

The study of the history of the English language, of its words and structure, of the changes in inflections, pronunciation, vocabulary, and meaning, and of its use as an instrument of communication and human living. Open only to seniors and graduate students.

195. Literary Criticism (3) I

A historical survey of the principles and practices of literary criticism from Greek times to the nineteenth century. Readings in the works of Aristotle, Horace, Longinus, Sidney, Boileau, Dryden, Lessing, Sainte-Beuve, Coleridge, and Arnold. Open only to senior and graduate students.

199. Special Problems (1-3) I, II

Students who have demonstrated ability in literary studies may enroll for work other than that outlined in the regular courses. Admission only by permission of the instructor with whom the work is to be done. Maximum credit, six units.

Graduate Courses

203A-B-C-D. The Critical Study of a Major Author (2-2-2-2) I, II
A seminar in (A) Shakespeare, (B) Arnold, (C) Mark Twain, or (D) Dickens.

213A-B-C-D. The Study of a Cultural Period Through Its Literature (2-2-2-2) I, II
A seminar in (A) the Renaissance, 1500-1660, (B) the Enlightenment, 1660-1780, (C) The Romantic Revolution, 1780-1830, or (D) Industrialism and Democracy, 1830-1914.

223A-B-C-D. The Study of a Literary Problem (2-2-2-2) I, II
A seminar in (A) Regionalism in American Literature, (B) the Utopian Theme in Literature, (C) the Idea of the "Gentleman," or (D) European Influences in American Literature.

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 (1-3)
An individual study course designed primarily for candidates for the master's degree.

299. Thesis (3)
Guidance in the preparation of a project or thesis for the master's degree.

FRENCH

IN THE DIVISION OF LANGUAGES AND LITERATURE

Major

A major in arts and sciences is offered in French for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: French 1, 2, 3, 4, 5, 6; German 1, 2, or Spanish 1, 2, or Latin 1, 2. Recommended: History 4A-4B. Upper division requirements: A minimum of 24 upper division units, at least 21 units of which must be in French, including French 199. The remaining three units may be selected from French 115, 116; Geography 118; History 121A-121B, 131A-131B, 141, 142, 143A-143B, 144A-144B; or Comparative Literature 101A, 140A-140B, 152A-152B, 155, 158, 159, in consultation with the chairman of the department.

A person majoring in French must have a minor to be decided upon in consultation with his major adviser.

A major in arts and sciences is offered in Romance Languages. For specific information on this major, refer to the section on Romance Languages.

A teaching major is offered in French or in Romance Languages for the junior high school and general secondary credentials. For specific information, refer to these credentials.

Minor

A minor in arts and sciences is offered in French. The minor consists of a minimum of 15 units to a maximum of 22 units of work in French, six units of which must be in courses carrying upper division credit.

A teaching minor is offered in French for the general secondary credentials, the special secondary, the general elementary, and the kindergarten-primary credentials. For specific information, refer to these credentials.

Lower Division Courses

(G)1. Elementary (3) I, II
Pronunciation, oral practice, readings on French culture and civilization, minimum essentials of grammar.

(G)2. Elementary (3) I, II
Continuation of French 1. Prerequisite: French 1 or one year of high school French.

(G)3. Intermediate (3) I, II

Reading in French of cultural material, short stories, novels or plays; oral practice; outside reading with oral and written reports. Prerequisite: French 2 or two years of high school French.

(G)4. Intermediate (3) II

Continuation of French 3. Prerequisite: French 3 or three years of high school French.

5. Intermediate (2) I, II

A practical application of the fundamental principles of grammar by means of oral and written work based on French texts. Prerequisite: French 2 or two years of high school French.

6. Intermediate (2) II

Continuation of French 5. Prerequisite: French 5 or three years of high school French.

10. Conversation (2) I

Practice in the spoken language; practical vocabulary, conversation on assigned topics; simple dialogues and plays. Prerequisite: French 2 or two years of high school French.

11. Conversation (2) II

Continuation of French 10. Prerequisite: French 10 or French 3, or three years of high school French.

(G)15. French Civilization (2) I

The major currents and characteristics of French culture, as expressed through the centuries in literature, art, philosophy, music and science. Conducted in English. No prerequisite.

(G)16. French Civilization (2) II

Continuation of French 15. No prerequisite.

D. Intermediate (3) I (Offered for last time in Fall of 1951)
Reading and composition; study of standard prose as a basis for class work, collateral reading with résumés and written reports; dictation. Prerequisite: French C or four years of high school French.

8A. Scientific Reading (3) II

Reading taken from the fields of chemistry, physics, medicine, zoology, biology, etc. Outside readings of books and periodicals, with written reports. Prerequisite: French 2 with a grade of C or two years of high school French.

Upper Division Courses

101A-101B. Conversation and Composition (3-3) Year, I (Offered 1952-53)
Translation into French from moderately difficult English prose. Outside reading of modern French prose, with written reports in French monthly. Readings and oral discussions in French of various facets of French life and culture. Prerequisite: French 4 and 6, or French D, or their equivalent, with a grade of C.

105A-105B. Modern French Drama (3-3) Year, I (Offered in 1953-54)
Plays of Victor Hugo, de Vigny, de Musset, Scribe, Augier, Dumas fils, Pailleron, Brieux, Hervieu, Maeterlinck, Rostand, and others read and discussed as to subject matter and technique. Outside reading and reports. Prerequisite: French 4 and 6, or their equivalent, with a grade of C.

107A-107B. Eighteenth Century Literature (3-3) Year, I (Offered in 1952-53)
The works of Montesquieu, Voltaire, Rousseau, the Encyclopédistes, and others. Prerequisite: French 4 and 6, or their equivalent, with a grade of C.

110A-110B. Modern French Novel (3-3) Year, I (Offered in 1951-52)
The French novel from Victor Hugo to the present day, including such authors as: Hugo, Dumas, Stendahl, Balzac, Flaubert, Loti, Anatole France, Bourget, Boreaux, Bazin, Barrès, Romain Rolland, A. Gide, Marcel Proust, and others. Class reading, outside reading, and reports. Prerequisite: French 4 and 6, or their equivalent, with a grade of C.

111A-111B. Seventeenth Century Dramatic Literature (3-3) Year, I
(Offered in 1954-55)

Reading in class of plays of Molière, Corneille, and Racine. Outside readings and lectures on the background of the seventeenth century in France. Prerequisite: French 4 and 6, or their equivalent, with a grade of C.

(G)115. French Civilization (2) I

An advanced course in French of the past and present, with emphasis on the arts, philosophy, and literature. Lectures, class discussions, outside readings, written reports on individual topics. Conducted in English. Prerequisite: Sophomore standing.

(G)116. French Civilization (2) II

Continuation of French 115. Prerequisite: Sophomore standing.

166. Honors Course (Credit to be arranged) I, II
Refer to the Honors Program.

199. Comprehensive Reading and Survey Course (3) II

Designed to fill up the gaps in the reading done in courses. Class meeting once a week for guidance, reports, and quizzes. Required of all seniors majoring in French.

Graduate Courses

214. Contemporary French Literature (2) I

An intensive study of the current movements and techniques in the novel, poetry, and theatre in France from 1900 to the present day. Class discussion, outside readings, written reports. Prerequisite: Nine units of upper division French and graduate status.

220. Explication de Textes (2) II

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. Prerequisite: Nine units of upper division French and graduate status.

290. Bibliography (1) See Romance Languages

298. Special Study (1-3)

An individual study course designed primarily for candidates for the master's degree.

299. Thesis (3)

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

GENERAL CULTURE

IN THE DIVISION OF FOREIGN LANGUAGES

Major and minor work are not offered in general culture courses. These courses are carried as part of the offerings of the Foreign Languages Department. They are conducted in English and are open to all students. A knowledge of foreign language is not required.

Lower Division Courses

(G)15. French Civilization (2) I

The major currents and characteristics of French culture, as expressed through the centuries in literature, art, philosophy, music and science. Conducted in English. No prerequisite.

(G)16. French Civilization (2) II

Continuation of French 15. No prerequisite.

(G)15. German Civilization (2) I

The major currents and characteristics of German culture, as expressed through the centuries in literature, art, philosophy, music and science. Conducted in English. No prerequisite.

(G)16. German Civilization (2) II

Continuation of German 15. No prerequisite.

(G)15. Spanish Civilization (2) I

The major currents and characteristics of Hispanic life and culture, as expressed through the centuries in literature, art, philosophy, music and science. Conducted in English. No prerequisite.

(G)16. Spanish Civilization (2) II

Continuation of Spanish 15. No prerequisite.

Upper Division Courses

(G)115. French Civilization (2) I

An advanced course in French culture of the past and present, with emphasis on the arts, philosophy, and literature. Lectures, class discussions, outside readings, written reports on individual topics. Conducted in English. Prerequisite: Sophomore standing.

(G)116. French Civilization (2) II

Continuation of French 115. Prerequisite: Sophomore standing.

(G)115. German Civilization (2) I

An advanced course in German culture of the past and present, with emphasis on the arts, philosophy, and literature. Lectures, class discussions, outside readings, written reports on individual topics. Conducted in English. Prerequisite: Sophomore standing.

(G)116. German Civilization (2) II

Continuation of German 115. Prerequisite: Sophomore standing.

(G)115. Spanish Civilization (2) I

An advanced course in Hispanic culture of the past and present, with emphasis on the arts, philosophy, and literature. Lectures, class discussions, outside readings, written reports on individual topics. Conducted in English. Prerequisite: Sophomore standing.

(G)116. Spanish Civilization (2) II

Continuation of Spanish 115. Prerequisite: Sophomore standing.

GENERAL LANGUAGE

IN THE DIVISION OF LANGUAGES AND LITERATURE

Major and minor work are not offered in general language.

Lower Division Courses

20. Latin and Greek Word Derivation (3) I

A general and elementary course in philology. A study of Latin and Greek roots of most frequent occurrence in English, and of the English words derived from them. No prerequisite. Not open to students with credit for English 20.

30. Pronunciation of French, Italian and German (1-3) II

A course designed especially for the use of singers, radio announcers, etc. No prerequisite. This course may be taken for one, two or three units of credit depending on the individual student's need.

GEOGRAPHY IN THE DIVISION OF SOCIAL SCIENCES

Major

A major in arts and sciences is offered in *geography* for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: Geography 1, 2; Geology 1A-1B. Recommended: A reading knowledge of German and French. Upper division requirements: A minimum of 24 upper division units in geography, or 18 units in geography and six units selected from related fields with approval of the chairman of the department. A minor is not required; however, students are urged to complete one minor.

A teaching major is not offered in geography; however, courses in geography may be used as part of the *social science major* for the general junior high school credential or the general secondary credential. For specific information, refer to these credentials.

Minor

A minor in arts and sciences is offered in *geography*. The minor consists of a minimum of 15 units of work in geography, or maximum of 22, six units of which must be in courses carrying upper division credit.

A teaching minor is not offered in geography for the general secondary credential; however, it may be used as a part of the *social science minor* for the special secondary, the general elementary, and the kindergarten-primary credentials. For specific information, refer to these credentials.

Lower Division Courses

- (G)1. **Introduction to Geography: Physical Elements** (3) I, II
The nature of maps, weather and climates of the world; natural vegetation; land forms and their associated soils, with reference to their climatic relationships; the seas and their coasts. One field trip. This course is classified as a natural science. (See general education requirements.)
- (G)2. **Introduction to Geography: Natural and Cultural Regions** (3) I, II
The regional differentiation of the world by human activity; areal bases of economy and nationality. Prerequisite: Geography 1.
3. **Elementary Meteorology** (3) I, II
An elementary study of the earth's atmosphere and changes in it which produce our weather and influence human affairs. Special attention given to local conditions, instruments, and records.
- (G)10. **Economic Geography** (3) I, II
Beginning course in economic geography designed for commerce and economic majors. Prerequisite: Geography 1.

Upper Division Courses

112. **Geography of California** (3) II
The physiographic regions of California and the cultural landscapes developed by the successive cultural groups. Prerequisite: Geography 1 or consent of instructor.
113. **Climatology** (3) I (Not offered in 1951-52)
A survey of the principal classifications of climates of the world; regional characteristics of climate; relations to soils, vegetation, and human activities. Prerequisite: Geography 1 or consent of instructor.
117. **Geography of Northern and Eastern Europe** (3) I
A study of the cultural development of the countries of northern and eastern Europe in relation to physical background and historical evolution. Prerequisite: Geography 1 or consent of instructor.

118. **Geography of the Mediterranean Area** (3) II
A study of the cultural development of the countries of Southern Europe, Western Asia, and North Africa in relation to physical background and resources. Prerequisite: Geography 1 or consent of instructor.
119. **Geography of South America** (3) II
A study of the physical regions and human geography of South America, including a review of the history of colonization and the exploitation of resources. Prerequisite: Geography 1 or consent of instructor.
120. **Geography of Middle America** (3) I
A study of the physical and human geography of Mexico, Central America, and the islands of the Caribbean, including a review of the history of colonization and the exploitation of resources. Prerequisite: Geography 1 or consent of instructor.
121. **Geography of North America** (3) II
The natural regions of North America, their formation and economic and historical development. Prerequisite: Geography 1 or consent of instructor.
124. **Geography of Asia** (3) I
The cultural regions of Asia, their physical environment, and historical development. Prerequisite: Geography 1 or consent of instructor.
125. **Geography of the Pacific Basin** (3) II
A geo-political approach to the study of the islands in, and the lands marginal to, the Pacific Ocean. Prerequisite: Geography 1, or consent of the instructor.
135. **Geography of the San Diego Area** (3) II
Directed individual urban and rural field work in the San Diego area; the mapping of a small area and making its geographic interpretations. Prerequisite: Geography 1 and 2 or consent of instructor.
- (G)145. **Conservation of Natural Resources** (3) II
Nature and extent of mineral, soil, water, forest, and wild life resources and their conservation; with particular emphasis on the United States, against a general background of world resources. Conservation philosophies and practices, and their geographic bases. Prerequisite: Geography 1 or consent of instructor.
166. **Honors Course** (Credit to be arranged) I, II
To be arranged after consultation with the chairman of the department. Refer to the Honors program.
199. **Special Study** (1-3) I, II
A special study course offered either semester for one to three units. May be taken for a maximum of six units by arrangement with the chairman of the department. Open only to majors in geography.

Graduate Courses

- 200A-200B. **Seminar** (2-2) Year, I
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** (1-3)
An individual study course designed primarily for candidates for the master's degree.
299. **Thesis** (3)
Guidance in the preparation of a project or thesis for the master's degree.

GEOLOGY**IN THE DIVISION OF PHYSICAL SCIENCES****Major**

A *major in arts and sciences* is not offered in geology. Students preparing for later professional training in geology should plan on completing Chemistry 1A-1B; Physics 4A-4B-4C; Mathematics 3A-3B; Engineering 1A-1B, 21A; and Geology 1A-1B, 21 and 22.

A *teaching major* is not offered in geology; however, courses in this field may be used as part of the *general science major* for the general junior high school credential. For specific information, refer to this credential.

Minor

A *minor in arts and sciences* is offered in geology. The minor must include at least 15 units of work in geology, six units of which must be from courses carrying upper division credit.

A *teaching minor* is not offered in geology; however, courses in this field may be used as part of the *general science minor* for the special secondary, the general elementary, and the kindergarten-primary credentials. For specific information, refer to these credentials.

Lower Division Courses**1A. Physical (4) I**

The composition, origin, and distribution of earth materials, and their modification through mechanical and chemical process of change. Three lectures and one three-hour laboratory period weekly with related field study during the semester. (Not open to students who have had Geology 2.)

1B. Historical (4) II

Theories of earth origin, and the evolutionary history of the earth as traced through rock and fossil records. Consideration of the Paleontologic Sequence. Three lectures and one three-hour laboratory period weekly, with arrangement for field study and conference during the semester. Prerequisite: Geology 1A or equivalent.

(G)2. General Geology (3) I, II

Earth materials and processes, the development of land forms, and a brief consideration of the history of the earth. Open to all students except those with previous credit in geology. No prerequisites.

(G)3. General Geology Laboratory (1) I, II

Recognition of common earth materials with experience in both field and map relationships. Designed to accompany Geology 2, but entirely separate and complete in itself. One three-hour laboratory period weekly. Open to all students except those with previous laboratory credit in geology. No prerequisites.

(G)4. Physiography of United States (3) II

Geologic history and present features of the main physiographic provinces of United States. Prerequisite: Geology 1A or 2.

21. Elementary Mineralogy (4) I

Practice in the determination of common minerals and rocks, their geologic environment, utilization and economic significance. Two lectures and two three-hour laboratory periods weekly. No prerequisite.

22. Advanced Mineralogy (4) II

The application of the polarizing microscope and other techniques to the identification of minerals and rocks. Two lectures and two three-hour laboratory periods weekly. Prerequisite: Geology 21.

Upper Division Courses**100. Structural Geology (3) I**

The evolution and description of the structural and topographical features of the earth. Faulting, folding, and orogenic forces with practical illustrations from the North American Continent and California geologic conditions. Lectures, discussions, and occasional field trips. Prerequisite: Geology 1A-1B or equivalent.

101. Museum Work (1-2) I, II

Selection and preparation of materials for the college museum collections. Emphasis upon creation of self instructive displays for use on the elementary and secondary as well as the collegiate level. Prerequisite: Geology 1A-1B, and consent of the instructor.

102. Geology of California (2) II

Directed reading and group discussion of California geologic literature. Designed to acquaint the student not only with the important structural and geomorphic units of the State but with the variety of important source materials of geologic literature as well. Use of bibliographies, state and federal surveys, research publications, etc. Prerequisite: Geology 1A-1B, and consent of the instructor.

108. Field Geology (1-4) I, II

Field instruction in geologic methods. Reconnaissance of adjacent unmapped areas with preparation of a geologic map and accompanying report. Work accomplished primarily on week-ends with minimum classroom activity during the week for organizational details. Prerequisite: Geology 1A-1B, and consent of the instructor.

166. Honors Course (Credit to be arranged) I, II

Special work in any of several phases of geologic science for students of demonstrated ability. Refer to the Honors Program.

199. Special Study (1-3) I, II

Individual work in field, library, laboratory, or museum under staff supervision. Open only to qualified students upon consultation. Maximum credit, six units.

GERMAN**IN THE DIVISION OF LANGUAGES AND LITERATURE**

Major and *minor* work are not offered in German; however, students desiring to carry advanced work in German should consult with the Chairman of the Department of Foreign Languages.

Lower Division Courses**(G)1. Elementary (3) I, II**

Pronunciation, oral practice, readings on German culture and civilization, minimum essentials of grammar.

(G)2. Elementary (3) I, II

Continuation of German 1. Prerequisite: German 1 or one year of high school German.

(G)3. Intermediate (3) I, II

Reading in German of cultural material, short stories, novels or plays; oral practice; outside reading with oral and written reports. Prerequisite: German 2 or two years of high school German.

(G)4. Intermediate (3) II

Continuation of German 3. Prerequisite: German 3 or three years of high school German.

5. Intermediate (2) I, II

A practical application of the fundamental principles of grammar by means of oral and written work based on German texts. Prerequisite: German 2 or two years of high school German.

6. Intermediate (2) II

Continuation of German 5. Prerequisite: German 5 or three years of high school German.

10. Conversation (2) I

Practice in the spoken language; practical vocabulary; conversation on assigned topics; simple dialogues and plays. Prerequisite: German 2 or two years of high school German.

11. Conversation (2) II

Continuation of German 10. Prerequisite: German 10, or German 3, or three years of high school German.

(G)15. German Civilization (2) I

The major currents and characteristics of German culture, as expressed through the centuries in literature, art, philosophy, music and science. Conducted in English. No prerequisite.

(G)16. German Civilization (2) II

Continuation of German 15. No prerequisite.

D. Intermediate Review and Reading (3) I

(Offered for last time in fall of 1951)

Reading and composition; study of standard prose as basis for class work; collateral reading with written reports; German conversation, with texts read as a basis; dictation. Prerequisite: German C or four years of high school German.

8A-8B. Scientific Reading (3-3) I

First semester, readings in scientific reader on chemistry, physics, etc.; occasional written reports on scientific subjects read outside of class; sight reading. Second semester, readings in special scientific or technical works; weekly written reports required; sight reading. Prerequisite for 8A: German 2 with a grade of C or two years of high school German; for 8B: German 8A or German 3, with a grade of C, or three years of high school German.

Upper Division

101A-101B. Advanced Conversation and Composition (3-3) Year, I

(Not offered 1951-52)

Translation into German of moderately difficult English prose. Free composition in German, written and oral. Outside reading of modern German plays and prose, dealing with various aspects of German life and culture, with written reports and oral discussions in German. Oral and written practice in conversational German. Prerequisite: German 4 and 6, or their equivalent, with a grade of C.

(G)115. German Civilization (2) I

An advanced course in German culture of the past and present, with emphasis on the arts, philosophy, and literature. Lectures, class discussions, outside readings, written reports on individual topics. Conducted in English. Prerequisite: Sophomore standing.

(G)116. German Civilization (2) II

Continuation of German 115. Prerequisite: Sophomore standing.

HEALTH EDUCATION

IN THE DIVISION OF HEALTH, PHYSICAL EDUCATION
AND RECREATION

Major

Work in health education leading to the general secondary credential is offered in connection with the general major. For a statement of requirements, refer to the general secondary credential.

Minor

A minor in arts and sciences is offered in health education. The minor consists of a minimum of 15 units, or maximum of 22, nine units of which must be in courses carrying upper division credit. Courses will be determined in consultation between student and departmental representative.

A teaching minor in health education is offered for the general secondary and credential. For a statement of requirements, refer to the

Lower Division Courses

(G)21. Principles of Healthful Living (2) I, II

An approach to the personal health problems of college students. Scientific health information is provided, and an attempt is made to promote wholesome attitudes and desirable practices relating to healthful living. Required of all freshmen.

65. Community Health (3) I, II

Community health problems; the role of the citizen, of the public, and of community health agencies in promoting and protecting the health of the community.

(G)90. Physiology of Reproduction (1) I, II

A series of lectures and discussions dealing with normal and abnormal physiology and anatomy of reproduction; facts and frauds in sex hygiene, and related topics. Not open to students with credit for Home Economics 90.

Upper Division Courses

145. Safety Education and Accident Prevention (3) II

Highway safety, the fundamentals of safety programs and techniques in home, school and industry. Partially satisfies the requirements for state credential in driver education.

151. Health Education for Teachers (2) I, II

The teacher's function in the different aspects of the school health program; environment, services, and instruction. Special attention is given to materials and material sources, and to community relationships and resources. Separate elementary and secondary sections.

152. Health Education Programs (3) I

The construction of the health education program including objectives, scope and sequence of instruction, teaching methods, source materials and evaluation procedures; practice in building instructional units.

153. Administration of the School Health Program (3) II

Administrative responsibilities and procedures in organizing and conducting the school health program. Principles, policies, and practices involved in instruction, service, environment, and community relationships. Partially fulfills Health and Development Credential requirement for nurses.

199. Special Study in Health Education (1-3) I, II

Extensive review of pertinent literature, individual research, and advanced study of problems in the profession. Credit will range from one to three units according to the type and amount of work. Approval of the Department Chairman required. Maximum credit, 6 units.

Graduate Courses

200. Evaluation Procedures in Health, Physical Education and Recreation (2) I

A study of tests and measurements in the profession with practice in their use, construction and interpretation of results.

202. Problems in Health Education (2) I, II

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.

298. Special Study (1-3) I, II

An individual study course designed primarily for candidates for the master's degree

HISTORY

IN THE DIVISION OF SOCIAL SCIENCES

Major

A major in arts and sciences is offered in history for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. Lower division requirements History 4A-4B, or 8A-8B, or 9A-9B, and either Political Science 1A-1B, or 71A-71B, or Economics 1A-1B. Two of the above history courses are recommended for students planning to major in history, and it is suggested that History 4A-4B be included as one of them. No freshman shall enroll in more than one lower division course in history during any one semester without the permission of the department. Upper division requirements: A minimum of 24 upper division units in history, including History 199, and a minimum of a year of concentration in each of three of the following fields: (a) Ancient and Medieval; (b) Modern Europe; (c) United States; (d) Latin America; (e) Pacific Area and the Far East. These courses must be selected under the guidance of the chairman of the department. A reading knowledge of one foreign language is strongly recommended.

A teaching major is not offered in history; however, courses in history may be used as part of the teaching major in social sciences for the general secondary and general junior high school credentials. For statement of requirements, refer to these credentials.

Minor

A minor in arts and sciences is offered in history. The minor must include at least 15 units of work in history, or maximum of 22, six units of which must be in courses carrying upper division credit, including a year-course.

A teaching minor in history is offered for the general secondary credential. Courses in history may be used as part of the social teaching science minor for the special secondary, general elementary, and kindergarten-primary credentials. For statement of requirements, refer to these credentials.

Explanation of Courses

NOTE: History 17A-17B does not count toward credit for a major in history. Any history course, with the exception of History 270A-270B, may be taken either semester, the A part not being a prerequisite to the B part.

Lower Division Courses

(G)4A-4B. History of Modern Europe (3-3) Year, I, II
A survey of European society, institutions and politics from about 1500 to the present. Fall semester: 1500-1799. Spring semester: 1799 to the present.

(G)8A-8B. History of the Americas (3-3) Year, I
Survey of the history of the western hemisphere from its discovery to the present time.

9A-9B. History of the Pacific Ocean Area (3-3) Year, I
A general survey of the history and civilization of the peoples of the Pacific, with special emphasis upon exploration, trade, international rivalries, and social evolution of the island areas.

(G)17A-17B. History of American Civilization (3-3) Year, I
Survey of the political and social development of the United States, with emphasis upon the rise of American civilization and ideals.

Upper Division Courses

111A-111B. Ancient History (3-3) Year, I
Fall semester: Greek history to the Roman conquest. Spring semester: Roman history to the fifth century A.D.

(G)121A-121B. Medieval History (3-3) Year, I
(Offered in 1952-53 and alternate years)
Survey of the main events of European social, cultural, religious, political and economic history, between 500 and 1400 A.D.

131A-131B. Renaissance, Reformation and Counter-reformation (3-3) Year, I
(Offered in 1951-52 and alternate years)
A history of personalities and events connected with the social, political, cultural, economic and religious change between 1300 and 1600.

141. Europe in the Seventeenth and Eighteenth Centuries (3) I
(Not offered in 1951-52)
European thought, politics and international relations from the Thirty Years' War and Louis XIV to the Seven Years' War.

142. The French Revolution and Napoleonic Era (3) II
(Not offered in 1951-52)
Study of conditions in France prior to 1789, the Revolution, 1789-1799, the organization of France and Europe under Napoleon, character of his empire, and the reorganization of Europe at the Congress of Vienna.

143A-143B. Europe in the Nineteenth Century (3-3) Year, I
Reaction in Europe, the development of nationalism, the impact of industrialism, and the background of World War I. Covers period 1815-1914.

144A-144B. The World Wars (3-3) Year, I
(Offered in 1952-53 and alternate years)
Developments from 1914 to the present. Semester I: World War I, the peace settlements, and the background of World War II. Semester II: World War II and its aftermath.

151A-151B. History of England (3-3) Year, I
Political, constitutional, social and economic developments since 1066. Designed for prelegal students, majors in English, and as a background for American History.

156A-156B. History of British Expansion (3-3) Year, I
(Not offered in 1951-52)
Study of the growth and development of the British Empire from the first overseas empire to the present. History 156B not open to students with credit for Political Science 160.

161. Mexico and Caribbean Countries (3) I
Special attention to relations between the United States and these countries, and to recent developments in Mexico.

162. South America Since Independence (3) II
Republics of South America. Development of nationality, struggles for political stability, exploitation, diplomatic and commercial relations with the United States, and other international problems of South America. Survey of present-day conditions.

171A-171B. Rise of the American Nation (3-3) Year, I
(Offered in 1952-53 and alternate years)
Semester I: English colonization in North America, development of colonial institutions and political customs, and areas of international conflict during 18th century. Semester II: The Revolution and establishment of the government under the Constitution of 1787. Covers period to 1814.

(G)172A-172B. Constitutional History of the United States (3-3) Year, I
Colonial governments, formation of the national Constitution, historical development of constitutional government, and significant phases of American constitutional law. Not open to students with credit for Political Science 139A and 139B.

173A-173B. The Expansion of the United States (3-3) Year, I
(Offered in 1951-52 and alternate years)
Lectures and readings on Jacksonian democracy, territorial expansion and the Mexican War, the slavery controversy, Civil War and Reconstruction, and attention to the growth and progress of the United States to the close of the nineteenth century.

175A-175B. The United States in the Twentieth Century (3-3) Year, I

The rise of the United States to the position of a world power; social and economic problems posed by the machine age; political action and adjustment, actual and proposed, intended as solutions for these problems.

176A-176B. History of American Foreign Policy (3-3) Year, I

Lectures and readings in the field of American foreign relations since 1776, with special emphasis, in the second semester, upon affairs since 1900. A general survey course. Not open to students with credit for Political Science 158A-158B.

(G)179A-179B. Intellectual History of the American People (3-3) Year, I

A study of the ebb and flow of ideas in the United States since the founding of the English colonies, with special attention devoted to social and political thought.

181A-181B. History of the West (3-3) Year, I

The American frontier: Expansion, exploration, settlement and building of the new states, with emphasis upon frontier problems of defense, communications, finance, etc.; the development of cultural institutions. A critical examination of the causes, effects and results of the frontier experiences of the American people.

189. History of California (3) I, II

The economic, social, intellectual, and political development of California from the earliest times. Emphasis will be on the founding of California, international struggles for California; American conquest and Gold Rush Era; development of California as a state.

191A-191B. History of the Far East (3-3) Year, I

Particular emphasis during the first semester upon the history, both internal and international, of the Far East through the nineteenth century. The second semester will be devoted to a consideration of developments in the twentieth century.

192. History of Russia (3) II

A general survey emphasizing the period since Peter the Great; the Russian Empire's relations with its national minorities; Tsarist experiments in political and social reform; revolutionary socialism; the development of the U. S. S. R.

193. History of China (3) I (Offered in 1952-53)

A survey of Chinese history and institutions from antiquity to the present.

194. History of Japan (3) I (Offered in 1951-52 and alternate years)

A general survey of the political, economic and social development from the foundation of the empire to contemporary times. Special attention will be given to religious, philosophy, literature, and the arts.

199. Special Course for Advanced Students (3) II

Required of all students with a history major in liberal arts and those working toward a General Secondary credential with a history major. To be attended during the senior year. Open to social science majors.

Graduate Courses**270A-270B. Seminar (2-2) Year, I**

Required of all candidates for the General Secondary credential with a history major, and for the M.A. degree in history. Prerequisites: 16 to 18 units in upper division history, including 199, or permission of instructor. 270A is a prerequisite for 270B. Open to candidates for the M.A. degree in social science, with consent of instructor.

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.

299. Thesis (3)

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

**HOME ECONOMICS
IN THE DIVISION OF FINE ARTS****Major**

A major in arts and sciences is not offered in home economics at this time; however, all lower division requirements for a major can be met during a two-year period. Upper division courses are also offered and are being added to the program as rapidly as facilities permit.

Students may elect a general major with one of the fields of concentration in home economics. For specific information, refer to the Home Arts Curriculum in the section of the bulletin entitled: Preprofessional and Vocational Curricula.

A teaching major is not offered in home economics; however, students planning to complete requirements for a special secondary credential in home economics should take the following courses in addition to courses in home economics: Chemistry 2A-2B. Recommended: Physics 2A-2B, Biology 1 or 3, Zoology 165, English 2A, History 17A-17B or Political Science 71A-71B, Health Education 90, Art 6A, 8, and 61B, Business 20, and Sociology 135.

Minor

A minor in arts and sciences is offered in home economics. The minor consists of a minimum of 15 units, or maximum of 22, nine units of which must be in courses carrying upper division credit. Lower division requirements: Home Economics 5 or 62 and 10 or 11. Upper division requirements: Home Economics 105 or 100, 150 and 170. Electives may be chosen from Home Economics 1, 55, 61A, 101, 135, and 160A.

A teaching minor in home economics is offered for the general secondary, general junior high, and special secondary school credentials. For statement of requirements, refer to these credentials. A student with a minor in home economics may teach home economics in junior high school with a general junior high school credential. Through counseling with the adviser in home economics, a student may so extend the minor in home economics that the special secondary credential in home economics may be obtained with a minimum amount of additional work in the field.

Lower Division Courses**(G)1. Home and Family Life (3) I, II**

A general education course in family life education. Consideration of necessary preparation for marriage with emphasis on a stable, happy democratic family life; family budgets and money management; finding a home to buy, build or rent; child care, proper training and guidance; home safety. Open to men and women.

(G)2. Foods (3) I

A general education course in practical arts. Deals with the problems faced in planning meals in which the foods are well cooked and appetizing and serving meals in ways suited to the family situation; safety in the kitchen. Nutrition, economic and management problems are stressed. One lecture and two laboratory sections per week.

(G)10. Clothing Fundamentals (3) II

A general education course in practical arts. Selection of clothing with self-analysis as a basis; wardrobe planning and buying procedures. Commercial patterns and their adaptation; fitting and construction principles applied to cottons.

11. Advanced Clothing (3) I

Fitting and construction processes applied to wool, silk, and synthetics, emphasizing fundamental principles of handling. Prerequisite: Home Economics 10 or equivalent.

55. Household Equipment (2) II

Selection, methods of operation and care of household appliances. Equipment of various types used and tested for safety, efficiency and cost of operation. Efficient kitchen arrangement and storage space in relation to the well-being of the family.

61A. Nutrition (2) II

Practical problems of nutrition including food requirements, food selection, and food habits. (For men and women.)

61B. Nutrition Laboratory (1) II

Nutrition principles applied to food preparation, meal preparation and special diets. Open to prenursing students. One three-hour laboratory section per week.

62. Food and Nutrition (3) II

Selection, purchase, and service of meals with a consideration of nutritional needs of family groups, food habits and social customs. Open to all students except prenursing students.

90. Physiology of Reproduction (1) I, II

A series of lectures and discussions dealing with normal and abnormal physiology and anatomy of reproduction; facts and frauds in sex hygiene, and related topics. Not open to students with credit for Health Education 90.

Upper Division Courses**100. Advanced Clothing Design (Tailoring) (3) II**

Principles of tailoring; planning and construction of coats and suits. Prerequisite: Home Economics 11.

101. Clothing Selection (3) I

Aims to develop taste in dress through a better understanding of the relation of art principles, psychology, fashion trends, personality and physical characteristics to individuals. History of costume is studied briefly as an aid in understanding recurring cycles in fashion. A consideration of buymanship information necessary in wardrobe selection to insure satisfaction and economy.

105. Family Meals (3) II

This course deals with the planning, preparing, and serving of attractive, well-balanced meals for different income levels, and for various occasions. The student will have responsibility for menu making, food purchasing, and meal management.

120. Demonstration Methods (1) Irregular

Class discussions and demonstrations with emphasis upon individual experience in organizing demonstration materials and in acquiring demonstration techniques. Observation and evaluation of professional demonstrations. Prerequisite: Nine units in Home Economics courses.

(G)135. Marriage and the Family (3) I, II

Preparation for marriage. Prediction scales for evaluating success or failure in marriage. Parent-child relationships; factors in successful and unsuccessful marriages; higher education and the birth rate; married women in industry and professions; desertion and divorce. Not open to students who have credit for Sociology 45 or 135. A general education course in social science or in family life education.

(G)150. Home Management (3) I, II

A general education course in family life education. Integration of the learning activity around a living situation with emphasis on cooperation and establishment of family goals. Management for more successful use of the resources of time, energy, and money to enrich personal and family life; use of credit, value of insurance and balancing budgets. Open to men and women.

160A. Merchandise Analysis—Textiles (2) I

Properties, uses, selection and care of textile fibers and fabrics. The aim is to develop judgment in the evaluation involved in the selection of textiles. (Open to men and women.)

160B. Merchandise Analysis—Nontextiles (2) II

Properties, uses, selection and care of metals, glass, rubber, fur, enamels and plastics. (Open to men and women.)

161. General Textiles (2) II

Factors involved in fundamental weaves, fabrics, color, and finishes with reference to selection of fabrics for home decoration and clothing. Relationships to durability and cost are emphasized. Open to all students except merchandising majors.

(G)170. Child Care and Development (3) I

A general education course in family life education. A study of the prenatal and preschool periods of child development; particular emphasis is given to the nutrition and physical development of the young child. Directed observation and participation in the nursery school.

INDUSTRIAL ARTS IN THE DIVISION OF PHYSICAL SCIENCES

Major

A *major in arts and sciences* is not offered in industrial arts at this time; however, all the lower division requirements can be met during a two-year period. Upper division courses are also offered as facilities will permit and other courses are planned and will be added as soon as possible. Courses are designed for two objectives: (1) leading toward professional education with a special secondary credential, and (2) for general education. The General Shop courses are designed to contribute to better family living and in them special emphasis is given to individual interests and objectives. Some of the other courses, while designed for prospective teachers, should also prove valuable to students desiring practical shop training on an elective basis.

A *teaching major* is not offered in industrial arts at this time; however, students planning to complete the special secondary credential in industrial arts should take the following courses in the lower division in addition to the general education requirements: Mathematics C, D, and E, unless completed in high school; Chemistry 2A, or a year of high school chemistry; Physics 2A-2B; Art 2; Speech Arts 4; Industrial Arts 2 or 21 and 51 or 52; Industrial Arts 31 or 32, 61 and 71.

Minor

A *minor in arts and sciences* is offered in industrial arts. The minor must include at least 15 units of work in industrial arts, nine units of which must be from courses carrying upper division credit.

A *teaching minor* in industrial arts is offered for the general junior high, special secondary, and general secondary credentials. Industrial arts may also be used as a second minor for the general elementary credential. For specific information, refer to the outline of requirements for these credentials.

Lower Division Courses**2. Mechanical Drawing (3) I, II, Summer**

Use and care of drafting equipment, freehand lettering, technique of the finished drawing including inking, simple orthographic projection, introduction to dimensioning problems, simple section and auxiliary views, fundamentals of pictorial drawing in isometric, oblique, and cabinet projection. One lecture and two laboratory sections per week. Not open to students with credit for Engineering 2.

(G)5. Introductory General Shop (3) I

A general education course in practical arts utilizing tools and material of industrial arts to gain understanding of the industrial age. Students will explore their abilities by solving practical problems. Activities include individual and group problems, field trips, and audio-visual aids.

(G)6. Intermediate General Shop (2) II

A general education course in practical arts. An approach similar to that of Industrial Arts 5 will be used. Students may select problems to meet their needs, interests, and objectives. Safety consciousness and good work habits will be emphasized.

21. Industrial Drafting (3) II

Introduction to industrial drafting procedures. Principles of orthographic projection as applied to aeronautical and machine drawings, sheet metal, furniture and related production drawings, and electrical and pipe layouts. One lecture and two laboratory sections per week. Prerequisite: Industrial Arts 2 or one year of high school mechanical drawing.

31. Elements of Metalwork (3) I

Demonstration and practice in the use of hand tools commonly used in bench and sheet metal including fundamentals of pipe fitting and welding. Discussion of the principles and techniques of metalworking for the prospective shop teacher. One lecture and two laboratory sections per week. (Required for the Special Secondary credential in Industrial Arts.)

32. Elements of Machine Operation (3) I, II

Demonstration and practice in the safe operation of machine shop equipment including drill, milling machine, shaper, and precision grinder for the shop teacher. May be substituted for Industrial Arts 41 to meet requirements for the Special Secondary credential in Industrial Arts. One lecture and two laboratory sections per week.

51. Elements of Woodwork (3) II

Training in the use of hand tools commonly used in the woodshop. Discussion and demonstration of the principles and techniques of woodwork and woodworking machines for the teacher. One lecture and two laboratory sections per week. (Required for the Special Secondary credential in Industrial Arts.)

52. Advanced Woodwork (3) I

Demonstration and practice in the safe operation of woodworking machines including the lathe and in the fundamentals of furniture joinery. Training in setting up and maintaining machines. One lecture and two laboratory sections per week. Prerequisites: Industrial Arts 51 or one year of high school woodwork.

61. Elements of Electricity (3) II

Demonstration of the basic principles of electricity as related to the home and to industry; practice in the use of tools, meters and materials in the laboratory and as applied to home appliances and the design and construction of simple devices suitable to the high school shop. One lecture and two laboratory sections per week. (Required for the Special Secondary credential in Industrial Arts.)

62A-62B. Applied Electronics Laboratory (3-3) Year, I

(May not be offered in 1951-52)

Practice in the construction and testing of electronic devices, such as radio receivers, television receivers, photocell systems, vacuum tube voltmeters, special control, and testing devices. Two hours of discussion and six hours of laboratory per week. Prerequisite: Industrial Arts 61 or permission of instructor.

71. Elements of Transportation Machinery (3) I

Demonstration and study of the theory of internal combustion engines as applied to transportation. Practice in maintenance, tune up and minor repair of automobiles. Consideration of the problems of safe driving and the development of the necessary habits and attitudes. Two lectures and one laboratory section per week. (Required for the Special Secondary credential in Industrial Arts.)

Upper Division Courses**121. Advanced Mechanical Drawing (3) I, II, Summer**

Lettering practice, orthographic and isometric projection of machines and parts and of furniture. Theory and practice of dimensioning, working and production drawings, reproduction and principles of perspective. Intended for the prospective teacher. One lecture and two laboratory sections per week. Prerequisite: Industrial Arts 21.

131. Advanced Metalwork (2) I, II

Additional demonstration and practice on metalworking machines including press work, welding and forging, sheet metal forming, metal spinning and pipe layout and fitting. Two laboratory sections per week. Prerequisite: Industrial Arts 5 or 31.

133A-133B. Advanced Machine Shop Practice (3-3) Year, I, II

A year course in the principles and practice of machine tool operation stressing tool making, instrument work and modelmaking. One lecture and two laboratory sections per week. Prerequisite: Industrial Arts 32 or permission of instructor.

136. Forging and Welding (2) (May not be offered in 1951-52)

Principles and techniques of forging and welding including oxy-acetylene and electrical as applied to repair work and the fabrication of ornamental metal work. Two laboratory sections per week. Prerequisite: Industrial Arts 5 or 31.

151A-151B. Furniture and Cabinet Making (2-2)

(May not be offered in 1951-52)

A year course in advanced woodwork problems. Design and construction of furniture and mill cabinet work. Two laboratory sections per week. Prerequisite: Industrial Arts 51 or 52.

152. Finishing and Painting (2) I

Theory, demonstration and practice of a wide variety of wood and metal finishing processes, including fillers, stains, varnishes, enamels and lacquers. Two laboratory sections per week. Prerequisite: Industrial Arts 5 or 51 or 52.

153. Patternmaking and Woodturning (3) II

Demonstration and practice of the principles of patternmaking and woodturning. Development of skill in woodturning operations. One lecture and two laboratory sections per week. Prerequisite: Industrial Arts 51 and 52 or equivalent.

190. Experimental Shop (1 or 2) I, II

Individual shop work on complex projects on an experimental basis. Prerequisite: Permission of the instructor.

193. Industrial Arts Organization and Management (2) II

(May not be offered in 1951-52)

Study of the organization of Industrial Arts in secondary schools, review of project requirements and methods of developing student participation in shop management. Two lectures per week.

194. Recent Trends in Industrial Arts Education (2) I

(May not be offered in 1951-52)

Survey of current trends and practices in the field of Industrial Arts in Secondary Education. There will be opportunity for individual work on related problems of interest to member of the class. Two lectures per week.

JOURNALISM**IN THE DIVISION OF LANGUAGES AND LITERATURE****Major**

A major in arts and sciences is offered in journalism for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: Journalism 51A-51B, Physical Science 10, Speech Arts 81, Business requirements: Journalism 51A-51B, Physical Science 10, Speech Arts 81, Business 27, Economics 1A-2A, or equivalent performance in typing. Recommended: Business 27, Economics 1A-1B, General Language 20, English 61. Upper division requirements: 24 upper division units in journalism to include Journalism 102 and 151. A minor is not required.

Minor

A minor in arts and sciences is offered in journalism. The minor must include at least 15 units of work in journalism, nine units of which must be from courses carrying upper division credit.

A teaching minor is not offered in journalism.

Lower Division Courses**51A. Elements of Journalism (3) I**

Theory of news writing; introduction to the newspaper as an institution in modern society. Prerequisites: Sophomore standing and grade of B in freshman composition, or consent of instructor; and Business 2A (may be taken concurrently) or equivalent, with 30-word-per-minute performance.

51B. News Gathering and Reporting (3) II

Practice in writing news copy, both for class criticism and for publication in *The Aztec*. Prerequisite: Grade of C or better in Journalism 51A.

92. Special Projects (1-3) I, II

Special work in journalism by arrangement with instructor. Work on *The Aztec*, yearbook, other publications, with consent of instructor. (NOTE.—A maximum of six units of Special Projects allowable toward the major or minor in journalism. As elective credit, such units not limited except at instructor's discretion.)

Upper Division Courses

101. **Writing for the Business Press** (3) II
Practice in gathering material and writing articles for the business press. Production of eight articles and marketing of at least one article required. Prerequisite: junior standing, plus consent of instructor.
102. **Law of the Press** (3) II
Understanding of the law as it affects the privileges and defines the duties and responsibilities of the press. Problems of constitutional law, libel, privacy, and postal regulations pertinent to the press, with emphasis on the covering of public affairs.
106. **Creative Writing** (3) I
A writing workshop in which students are given opportunity to criticize each other's work. Emphasis on narrative and description, but freedom to pursue whatever writing forms may interest the student most. May be taken a second time with new material. Not open to students with credit for English 106.
122. **Public Opinion Measurement** (3) II
The history, methods, and problems of public opinion and attitude measurement. Emphasis will be placed upon the polling of consumers and voters. Students will be given field experience. Not open to students with credit for Psychology 122.
132. **Propaganda and Public Opinion** (3) II
A study of the forces which mold the American public mind, the practice of propaganda, a description and analysis of public relations, pressure groups and their effect in American public life. Not open to students with credit for Political Science 122.
151. **Advanced Editing and Reporting Techniques** (3) I
Editing copy, writing headlines, making up pages, handling telegraph copy. Practice in specialized forms of journalistic writing. Prerequisite: Journalism 51A-51B.
162. **Magazine Fiction** (3) I
Coaching in constructing and writing short stories for commercial publications. Admission with consent of instructor. Not open to students with credit for English 162.
166. **Honors Course** (Credit to be arranged) I, II
Special study open to members of the Honors Program in journalism. Refer to the Honors Program.
183. **Radio Continuity and News Writing** (3) II
Correlates news editing and writing with announcing styles. Radio news procedure and organization of a radio news staff; analysis of repertorial and commentary styles. Includes production techniques of "on-the-spot" and multiple point pickup broadcasts. Registration with consent of the instructor. Not open to students with credit for Speech Arts 183.
185. **Advertising Copy and Layout** (2) I
Introduction to principles and techniques of copy writing; types of copy; preparation of layouts; mechanical methods employed by the artist, engraver and printer; legislation and regulations affecting advertising claims. Prerequisite: Business 27, or consent of instructor. Not open to students with credit for Business 185.
- 191A-191B. **City and County Newspaper Practice** (1 to 3-1 to 3) Year, I, II
A special course in applied journalism during which students work on nearby daily and weekly newspapers by special arrangement with editors. Prerequisite: Journalism 51A and 51B with grade of B, plus permission of instructor.
192. **Special Projects** (1-3) I, II
Special work in journalism by arrangement with instructor. Work on *The Aztec*, yearbook and other publications, with consent of instructor. (See "Note" under Jour. 92, above.)
199. **Special Study** (1-3) I, II
Students who have demonstrated ability in journalism studies may enroll for work other than that outlined in the regular courses. Admission only with consent of the instructor with whom the work is to be done. Maximum credit, six units.

LATIN

IN THE DIVISION OF LANGUAGES AND LITERATURE

Major and minor work are not offered in Latin.

Lower Division Courses

- (G)1. **Elementary** (3) I, II
Study of the Latin language and Roman culture, with reading of selected prose passages.
- (G)2. **Elementary** (3) I, II
Continuation of Latin 1. Prerequisite: Latin 1 or one year of high school Latin.
- (G)3. **Intermediate** (3) I
Reading of selected passages emphasizing the contribution of the ancient culture to our own. Prerequisite: Latin 2 or two years of high school Latin.
- (G)4. **Intermediate** (3) II
Continuation of Latin 3. Prerequisite: Latin 3 or three years of high school Latin.

LIBRARY SCIENCE

IN THE DIVISION OF SOCIAL SCIENCES

Major and minor work are not offered in library science.

Lower Division Courses

- (G)10. **Use of the Library** (2) I, II
The chief object is to give a working knowledge of some of the resources of the library which every teacher and student should understand—the decimal classification, the card catalog, periodical indexes, and the most important reference books, together with some instruction in the preparation of bibliographies. The course will be a requirement of those students added to the library's staff of student assistants, although it will not prepare the student to become a librarian. A general education course in practical arts.

LIFE SCIENCE

IN THE DIVISION OF LIFE SCIENCES

Major

A major in arts and sciences is offered in life science for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: Zoology 1A-1B or Biology 3 and 4; Zoology 20 or Physiology 1A; Botany 2A-2B or 1 or Bacteriology 1; Chemistry 1A-1B or 2A-2B; Physics 2A-2B. Upper division requirements: A minimum of 24 upper division units in zoology, bacteriology and botany of which six units may be from a related field. The plan for this major must be with the approval of the Chairman of the Division of Life Sciences. A minor is not required of students majoring in life science.

A major in arts and sciences is offered in life science for the B.S. degree. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: Bacteriology 1 or 101, Botany 2A-2B, Zoology 1A-1B, Chemistry 1A-1B or 2A-2B, Physics 2A-2B. Upper division requirements: 36 upper division units in zoology, bacteriology and botany or 27 units in these fields with nine units in a related field. The plan for this major must be with the approval of the Chairman of the Division of Life Sciences. A minor is not required of students majoring in life science.

Note: Twelve units in natural science courses in the major for the A.B. or B.S. degree may be counted toward pattern requirements in general education natural science courses.

A *teaching major in life science and general science* is offered for the general secondary school credential and a *teaching major in general science* is offered for the general junior high school credential. For statement of requirements, refer to these credentials.

Minor

A *minor in arts and sciences* is offered in *life science*. Lower division requirements: Biology 3 and 4 or equivalent; Physical Science 1 and 2; Physiology 1C. Upper division requirements: Botany 114 and 150; Zoology 119 and 160.

A *teaching minor in life science and general science* is offered for the general secondary, special secondary, general elementary, and kindergarten-primary credentials. For statement of requirements, refer to these credentials.

MARKETING

IN THE DIVISION OF BUSINESS

Major

A *major in arts and sciences* is offered in *business* for the A.B. degree with specialization in marketing. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: Business 8, 14A-14B, 18A-18B, 20, 24, 25, 27, and Art 7. If the student does not elect a minor in economics, Economics 1A-1B should be taken as an elective or as part of his program in general education.

Upper division requirements: 24 upper division units to include Business 121, Economics 140, one of the following courses: Business 123, 153, Economics 111, 170; and 15 units chosen from Business 120, 123, 124, 137, 153, 154, 181, 184, 185, 186, 187A, 187B, 188, 189, 196, 198A, 198B, Home Economics 160A-160B, Art 107. (If Business 20 and Art 7 are not taken in the lower division, Business 120 and Art 107 are required in the upper division.) A minor is not required, but the student is encouraged to complete a minor in one field other than business.

A *teaching major* is not offered in the marketing field, but is offered in *business education*. Marketing may be included as the areas of specialization.

Minor

A *minor in arts and sciences* is offered in *business* with specialization in marketing. The minor consists of a minimum of 15 units, or maximum of 22, six units of which must be in courses carrying upper division credit. Students electing business as a minor with specialization in marketing should consult with the adviser in marketing for selection of courses.

A *teaching minor* is not offered in business, but is offered in *business education* for the general secondary school credential. For statement of requirements, refer to the credential.

Courses in Marketing

All business courses in this department for the major or minor are listed in this section of the bulletin under Business.

MATHEMATICS

IN THE DIVISION OF PHYSICAL SCIENCES

Major

A *major in arts and sciences* is offered in *mathematics* for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: Mathematics 1, or equivalent (unless exempted by examination); Mathematics 3A-3B and 4A. Recommended: Business 2, Engineering 1A, 21; Physics 4A-4B or Physics 2A-2B, 3A-3B. A reading knowledge of French or German is desirable. Upper division requirements: A minimum of 24 upper division units in mathematics to include Mathematics 117 (unless taken as Mathematics 4B in the lower division); 111, 119, 121, and either 105 or 106. Six units of the remaining nine units may be selected from upper division courses in related areas with the approval of the department. A minor is not required, but is recommended.

A *teaching major* is offered in mathematics for the general junior high school credential and for the general secondary credential. For specific information, refer to the outline of requirements for these credentials.

Minor

A *minor in arts and sciences* is offered in *mathematics*. The minor consists of a minimum of 15 units, or a maximum of 22, six units of which must be in courses carrying upper division credit. The selection of courses must be approved by the department.

A *teaching minor* is offered in mathematics for the general secondary, the special secondary, the general elementary, and the kindergarten-primary credentials. For specific information, refer to the outlines of requirements for these credentials.

Lower Division Courses

X. Basic Mathematics (3) I, II

Fundamentals of mathematics with applications to everyday problems. Required of all students failing the competency examination in mathematics. Not open for credit to students passing this examination.

A. Elementary Algebra (3) I, II

Fundamentals of algebra. Not open for credit to students who have credit for one year of high school algebra.

(G)B. Plane Geometry (3) I, II

Fundamentals of plane geometry. Not open for credit to students who have credit for one year of high school geometry. May be counted toward general education in mathematics.

C. Intermediate Algebra (3) I, II

An extensive review of elementary algebra followed by quadratic equations, simultaneous equations, ratio and proportion, variation, progressions, etc. Prerequisite: Elementary algebra and geometry or Mathematics A-B.

D. Trigonometry (3) I, II

Plane trigonometry with special attention to logarithms and those aspects needed in analytic geometry and the calculus. Prerequisite: Mathematics C or its equivalent.

E. Solid Geometry (2) II

Properties of lines and planes. Calculation of areas and volumes. Prerequisite: Mathematics C or its equivalent.

(G)G. Mathematics for General Education (3) I, II

Basic concepts of arithmetic, algebra, and geometry with applications. Recommended for students whose scores on the competency examination, while exempting them from Mathematics X, indicate a need for further training in mathematics. A general education course in mathematics.

S. Slide Rule (1) I, II

Theory and use of the slide rule. Practice in performing the fundamental operations of arithmetic. Some attention is given to more involved computations. Prerequisite: Trigonometry or Mathematics A-B or equivalents.

1. Algebra and Trigonometry (3) I, II

Review of algebra and trigonometry. Further study of identities, graphs, solution of algebraic and trigonometric equations, determinants, and mathematical proofs. Prerequisite: Two years of high school algebra and trigonometry.

3A. Analytic Geometry (3) I, II

Equations and loci, conic sections, coordinate transformations, Cartesian and polar coordinates, and parametric representation. Prerequisite: Mathematics 1 or trigonometry and passing of qualifying examination. (Qualifying examination will be given during the first week of the semester.)

3B. First Course in Calculus (3) I, II

Introduction to differential and integral calculus with applications. Prerequisite: Mathematics 3A.

4A. Second Course in Calculus (3) I, II

Differentiation, integration, infinite series, and applications. Prerequisite: Mathematics 3B.

4B. Third Course in Calculus (3) I, II

Partial differentiation, successive integration and applications. Prerequisite: Mathematics 4A. (Solid geometry is recommended.) Not open to students with credit for Math. 117.

(G)7A. Mathematical Analysis (3) I

Designed for students who do not intend to prepare for a professional career in physical science or in engineering. Consideration is given to the processes and applications of algebra and trigonometry. Prerequisite: High school algebra and plane geometry. Students with credit for Mathematics 1 will not receive credit for Mathematics 7A. This course may be counted toward general education in mathematics.

(G)7B. Mathematical Analysis (3) II

A continuation of Mathematics 7A including the concepts and applications of analytic geometry and an introduction to the calculus. Prerequisite: Mathematics 7A. Students with credit for Mathematics 3B will not receive credit for Mathematics 7B. This course may be counted toward general education in mathematics.

Upper Division Courses**(G)104. History of Mathematics (3) II**

History of mathematics down to early modern times. This course may be counted toward general education in mathematics.

105. College Geometry (3) I

A synthetic treatment of the points and lines associated with triangles and quadrilaterals, similarity, inversion, ruler and compass construction, etc. Highly recommended for all teachers of high school geometry. Prerequisite: Mathematics 3B or 7B.

106. Projective Geometry (3) I

Concurrence of lines, collinearity of points and other properties of figures not altered by projections; construction and study of ellipses, hyperbolas, and parabolas by means of projections. Prerequisites: Mathematics 3B or 7B and permission of instructor.

111. Theory of Algebraic Equations (3) I, II

Determinants, complex numbers, and theory of algebraic equations. Prerequisite: Mathematics 3B or 7B.

112. Analytic Geometry of Space (3) II

The coordinate systems in space; lines, planes, and quadric surfaces; applications. Prerequisite: Mathematics 4A.

117. Intermediate Calculus (3) I, II

Essentially the same as Mathematics 4B. Additional special work for advanced students may be assigned. Prerequisite: Mathematics 4A. Not open for credit to students with credit for Math. 4B.

118A. Advanced Mathematics for Engineering Students (3) I

Introduction to differential equations, vector analysis, Fourier series, hyperbolic, elliptic, and Bessel functions. Prerequisite: Mathematics 117 or its equivalent.

118B. Advanced Mathematics for Engineering Students (3) II

Introduction to partial differentiation, partial differential equations, line and surface integrals, complex variables, etc. Prerequisite: Mathematics 118A.

119. Differential Equations (3) I, II

Ordinary differential equations with applications to geometry, physics, and chemistry. Prerequisite: Mathematics 117 or its equivalent.

121. Advanced Calculus (3) II

Review of the fundamental concepts of the calculus, partial differentiation, series, line and surface integrals, etc. Prerequisite: Mathematics 118A or Mathematics 119.

124. Vector Analysis (3) I

Vector algebra, differentiation of vectors, gradient, divergence, and curl. Applications to geometry and physics. Prerequisite: Mathematics 117 or its equivalent.

140A. Mathematical Statistics (3) I

Graphical and arithmetical characterization of observed frequency distributions, moments, use of normal curve, curve fitting, correlation, etc. Prerequisite: Mathematics 3B.

140B. Mathematical Statistics (3) II

Theoretical discrete and continuous distributions, multiple and partial correlation, large and small sample theory including student's *T*, Chi-square, and the *F* distributions with applications. Prerequisites: Mathematics 140A and 117 or their equivalents.

199. Special Study (1-3) I, II

Supervised individual study in selected mathematical topics. Maximum of six units allowed. Prerequisite: Consent of the instructor.

Graduate Courses**201. Concepts of Geometry From an Advanced Viewpoint (2) I**

An introduction to the fundamental concepts of geometry and the processes of mathematical thinking in this area. Recommended for candidates for the general secondary credential. Prerequisite: One upper division course in geometry.

202. Concepts of Algebra From an Advanced Viewpoint (2) II

An introduction to the fundamental concepts of algebra and the processes of mathematical thinking in this area. Recommended for candidates for the general secondary credential. Prerequisite: One upper division course in algebra.

204. Advanced Work in the History of Mathematics (2) I

Intensive study of specific phases of the history of mathematics with attention to implications for teaching mathematics. Prerequisite: Mathematics 104.

224. Functions of a Complex Variable (3) I

Operations on complex numbers, limits, convergence, continuity, differentiation, integration, Cauchy's Theorem, power series, elementary functions, etc. Prerequisite: Mathematics 118A or 119 and consent of the instructor.

MUSIC**IN THE DIVISION OF FINE ARTS****Major**

A *major in arts and sciences* is offered in music for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. Several plans of study are available with varying degrees of emphasis on performance, history and literature, creative activity, and teaching.

The music curricula are designed to fulfill the needs of all students: (1) Those who have professional ambitions in musical performance, or seek a foundation for graduate study leading to college or university teaching, (2) those who are preparing for one of the several state teaching credentials with music as either a major or minor, (3) those whose major professional interest is in another department and are seeking musical study as a minor, and (4) those who are interested in music as an elective study area for the enrichment of their cultural background.

General basic requirements for the degree with a major in music to be met by all music students, are as follows: Demonstration of proficiency in vocal or instrumental *performance* at a level of difficulty comparable to the Bach two-part inventions or the easier Haydn sonatas for the piano before admission to the major may be granted; development, through class or individual instruction, of *performance ability* and appearance as soloist in at least one student recital during each of the last four semesters; elementary keyboard technique (the student's attention is directed to the prerequisites for certain courses, to the Music 10A-B-C-D requirement and to the credential requirements listed earlier in the bulletin under Professional Curricula in Teacher Education); as laboratory experience participation in one vocal and one instrumental activity

each semester excepting the semesters in which the credential candidate is enrolled in cadet teaching (in special cases this requirement may be waived by the chairman of the Music Department); during the semesters of cadet teaching the student is required to enroll in one music activity. A maximum of eight units of credit from music activities may be used toward graduation. The maximum credit permitted toward graduation from any combination of intermediate class, advanced class and individual instruction in solo performance is eight units. Attention is directed to the statement following the course descriptions in which the conditions for receiving credit from private instruction are given.

Lower division basic requirements for all music majors: Music 8A-8B, 10A-B-C-D (may be omitted in part or in full upon evidence of satisfactory piano technique), 51A-51B, 58A-58B, four music activities selected from music courses numbered 70 to 87 (see activity requirement above). Upper division basic requirements for all music majors: Music 101A-101B, 108A-108B, 109A, 146A-B-C, four music activities selected from music courses numbered 170 to 187 (see activity requirement above).

One of the following areas may be elected by the students for major emphasis:

Performance: Add the following courses to the basic requirements: Lower division: Four units selected from Music 11, 16, 21, 26, 31, or 50. Upper division: Four units selected from Music 111, 112, 116, 117, 121, 122, 127, 131, 132, or 150ABCD; four units of electives chosen from Music 109B and/or 199 (special studies in music history and literature or composition). The student emphasizing performance must appear in a joint public recital during the junior year and must present an entire solo public recital during the senior year; such students must pass a preliminary audition of the compositions to be performed at the public recital before the music faculty during the semester preceding the recital appearance.

Music History and Literature: Add the following courses to the list of requirements: Upper Division: Four units selected from Music 111, 112, 116, 117, 121, 122, 126, 127, 131, 132 or 150ABCD; six units selected from Music 109B and 199 (special studies in history and literature or composition). During his senior year the student emphasizing history and literature is required to organize, prepare program notes and present two recitals consisting of recorded or "live" performances each of which will deal with representative works of a certain period or composer or with certain periods, composers, works or styles to be compared; such students must pass a preliminary audition of the material to be presented before the music faculty at least one month in advance of each performance.

Creative Activity: Add the following courses to the list of requirements: Upper division: Four units selected from Music 111, 112, 116, 117, 121, 122, 126, 127, 131, 132, or 150ABCD; six units selected from Music 109B and 199 (special studies in history and literature or composition). The student emphasizing creative activity is required to present a concert of his compositions during the senior year; such students must present the scores of works to be performed to the music faculty one month in advance of the performance.

Students are required to consult with the chairman of the department for selection of the field of emphasis.

A *teaching major in music* is offered for the special secondary credential and for the general secondary credential. For statement of requirements, refer to these credentials.

Minor

A *minor in arts and sciences* is offered in *music*. General basic requirements for the minor are as follows: Demonstration of vocal or instrumental performing ability before admission to the minor program may be granted; as laboratory experience participation in one music activity each semester (in special cases this requirement may be waived by the chairman of the department); a maximum of four units received from music activities may be used toward the total graduation requirement. Lower division: 14 to 18 units: Music 8A-8B, 10A-B-C-D (may be omitted in part or in full on evidence of satisfactory piano technique); six units selected from 51A-51B or 58A-58B; two units from courses numbered 70 to 87 (see activity requirements for the minor). Upper division: Six units selected from Music 101A-101B or 108A-108B; two units of music activities from music courses numbered 170 to 187 (see activity requirements for the minor).

ELECTIVES IN MUSIC

The Music Department offers certain courses which fulfill the needs of students who do not have music as a major or minor subject but who are interested in music as an elective study area for the enrichment of their cultural background. Courses

particularly suited to these needs are Aesthetics 2 and 102 and the music courses numbered 70 to 88 and from 170 to 188; such courses are designated as general education courses and may be taken as partial fulfillment of the Literature, Philosophy, and the Arts requirement in general education.

Some students will be musically prepared to elect courses in music which may or may not be included in the general education group. Enrollment by qualified students who wish to elect these courses is encouraged.

Lower Division Courses

(G)7A. Musicianship—For General Elementary Teachers (3) I, II

Elementary music theory and skills including notation, meter, rhythm, scales, intervals, triads, sight singing, ear training, dictation, elementary keyboard facility and other rudiments. State adopted elementary music texts used. A general elementary credential requirement. Closed to music majors or minors. Formerly Music 1A.

7B. Music Materials for the Elementary School (3) I, II

Study of all phases of elementary school music: Singing, listening, reading, creative music, instruments, repertoire of songs and records, music projects. Required of all general elementary credential candidates. Prerequisite: Music 7A or consent of instructor.

8A. Music Fundamentals (3) I

Preparation for study of music structure. Designed to equip the student to sing, play at the keyboard, write and recognize aurally scales, intervals, triads and basic rhythms. (Note: Students lacking keyboard facility must enroll concurrently for piano study.) For majors and minors.

8B. Elementary Harmony (3) I, II

Diatonic usage studied through written exercises, keyboard harmony, analysis, dictation and sight-singing. Prerequisites: Ability to play Bach chorales at the keyboard; Music 8A or equivalent.

(G)10A-10B. Piano—Elementary Class Instruction (1-1) I, II

Fundamental playing and reading techniques for the pianoforte. Emphasis upon playing by ear, and the development of interpretative ability. Music majors or minors are required to start these courses on admission unless competence of 10D level is demonstrated. Formerly Music 28ABCD.

10C-10D. Piano—Elementary Class Instruction (1-1) I, II

Continuation of Music 10A-10B.

11ABCD. Piano—Intermediate Class Instruction (1-1-1-1) I, II

Materials and techniques of intermediate level are studied in detail. Satisfactory audition before the instructor is required for admission.

15A. Voice—Elementary Class Instruction (1) I, II

A class for beginners in the vocal field taking up the problems of breath control, tone placement, articulation and enunciation. Frequent classroom performance of simple songs. Formerly Music 29AB.

15B. Class Voice—Continuation First Semester Voice (1) I, II

Study of more advanced songs with attention being given to interpretation, as well as continued work on tone, articulation and placement. Frequent performance before class required. Prerequisite: Music 15A or equivalent. Formerly Music 29CD.

16ABCD. Voice—Intermediate Class Instruction (1-1-1-1) I, II

(Not offered 1951-52)

Materials and techniques of intermediate level are studied in detail. Satisfactory audition before the instructor is required for admission.

20AB. Strings—Elementary Class Instruction (1-1) I, II

Open to all students but primarily for those whose major instrument is not one of the stringed instruments and who are preparing for a teaching credential in music. Formerly Music 2A.

21ABCD. Strings—Intermediate Class Instruction (1-1-1-1) I, II

Materials and techniques of intermediate level are studied in detail. Satisfactory audition before the instructor is required for admission. Sections are offered in violin, viola, cello, bass.

25AB. Woodwinds—Elementary Class Instruction (1-1) I, II

Open to all students but primarily for those whose major instrument is not one of the woodwind instruments and who are preparing for a teaching credential in music. Formerly Music 3A.

26ABCD. Woodwinds—Intermediate Class Instruction (1-1-1-1) I, II

Materials and techniques of intermediate level are studied in detail. Satisfactory audition before the instructor is required for admission. Sections are offered in flute, oboe, clarinet, and bassoon.

30AB. Brass—Elementary Class Instruction (1-1) I, II

Open to all students but primarily for those whose major instrument is not one of the brass instruments and who are preparing for a teaching credential in music. Formerly Music 6A.

31ABCD. Brass—Intermediate Class Instruction (1-1-1-1) I, II

Materials and techniques of intermediate level are studied in detail. Satisfactory audition before the instructor is required for admission. Sections are offered in horn, trumpet, trombone, tuba, and baritone.

35. Percussion—Elementary Class Instruction (1) I, II

Open to all students but primarily for those who are preparing for a teaching credential in music. Formerly Music 5AB.

50ABCD. Intermediate Individual Study (1-1-1-1) I, II

For the teaching credential performance requirement or for the requirements of the major emphasis curricula leading to the A.B. degree with a major in music. See explanation below for conditions under which credit may be given for music study under private instructors.

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

51A-51B. Survey of Music (2-2) Year, 1

Elements and structure of music, instrumental and vocal timbre. Folk music of various countries and music of representative composers. Lectures, study of scores and recordings. Outside concert attendance required. Designed for nonmusic majors and minors.

53. Opera Technique (2) I, II

Training in the interpretation and characterization of light and grand opera. Specific work in coordination of operatic ensemble. Formerly Music 31.

58A. Intermediate Harmony and Two-part Counterpoint (3) II

Continuation of Music 5B including simple harmonic alteration. Strict species counterpoint in two parts. Prerequisite: Music 5B.

58B. Advanced Harmony and Three-part Counterpoint (3)

(Not offered 1951-52)
Chromatic alteration with emphasis on analysis of 19th century chromatic usage and construction of examples in corresponding idioms. Strict species counterpoint in three parts. Prerequisite: Music 58A.

ACTIVITY COURSES

The activity courses are designed to afford opportunity for observation of rehearsal techniques and laboratory experience in the study and performance of a wide range of representative literature of various periods.

(G)70A-70B. Chamber Music (1-1) I, II

Sections for string, woodwind, brass, piano, and mixed ensemble groups. Permission of the instructor required. Formerly Music 30AB.

70C-70D. Chamber Music (1-1) I, II

Continuation of Music 70A-70B.

72A. Beginning Instrumental Ensemble (½) I, II (Not offered 1951-52)

Open to all instrumental students. Group performance of simple orchestral and band scores. Prerequisite: Music 20A, 25A, 30A, or equivalents, one or more. Formerly Music 24A.

72B. Intermediate Instrumental Ensemble (½) I, II (Not offered 1951-52)

Group performance of orchestral and band scores of more advanced grade. Materials covered will prepare the student for minor parts in either the symphony orchestra or the symphony band. Prerequisites: Music 72A or equivalent. Formerly Music 24B.

(G)75ABCD. Symphony and Marching Band (2-2-2-2) I, II

Permission of the instructor required. Formerly Music 26ABCD.

(G)80ABCD. Symphony Orchestra (1-1-1-1) I, II

Permission of the instructor required. Formerly Music 13ABCD.

(G)85ABCD. Chorus (1-1-1-1) I, II

Permission of the instructor required. Formerly Music 15ABCD.

(G)86ABCD. Treble Clef (1-1-1-1) I, II

Permission of the instructor required. Formerly Music 10ABCD.

(G)87ABCD. Men's Glee Club (1-1-1-1) I, II

Permission of the instructor required. Formerly Music 12ABCD.

(G)88ABCD. Workshop Chorus (½-½-½-½) I, II

Open to students who do not have music as a major or minor field and who are interested in singing standard choral works. No entrance examination required. Designed for nonmusic majors and minors. Formerly Music 20ABCD.

Upper Division Courses

(For description of courses in the field of music appreciation, see Aesthetics)

101A-101B. History of Music (3-3) Year, 1

Detailed study of chronological development of musical art and forms from the age of Bach to the present. Analytical score study and assigned recordings. Familiarity with musicological resources through individual assignments. Prerequisite: Music 51A-51B. Music majors and minors only.

105A-105B. Advanced Harmony and Composition (3-3) Year, 1

Study of the possible types of modulation and chromatic harmonies: Continuation of harmonic analysis and original composition. Prerequisite: Music 4A-4B. 105A is a prerequisite for 105B. To be discontinued after 1951-52.

106A. Counterpoint (2) I

Study of the five species of counterpoint with much practice in writing in such forms. Application of contrapuntal style to modern composition. Prerequisite: Music 4B. To be discontinued after 1952-53.

106B. Counterpoint (2) II

Species counterpoint in four parts. Analysis of contrapuntal usage in musical composition. Continuation of Music 106A. Prerequisite: Music 106A. To be discontinued after 1952-53.

108A. Twentieth Century Harmonic Practice and Four-part Counterpoint (3) (Not offered 1951-52)

Study of harmonic usages and trends since Debussy. Strict species counterpoint in four parts. Prerequisite: Music 58B.

108B. Strict Composition (3) (Not offered 1951-52)

Problems of composition in the shorter forms. Prerequisite: Music 108A.

109A-109B. Instrumentation and Arranging (2-2) Year, 1
Arranging of music for full orchestra. Selected works of students to be performed by standard orchestras. Prerequisites: Music 58B or 4B; 109A for 109B. Formerly Music 121A-121B.

111ABCD. Piano—Intermediate Class Instruction (1-1-1-1) I, II
Materials and techniques of intermediate level are studied in detail. Satisfactory audition before the instructor is required for admission.

112ABCD. Piano—Advanced Class Instruction (1-1-1-1) I, II
Materials and techniques of the advanced level are studied in detail. Satisfactory audition before the instructor required for admission.

116ABCD. Voice—Intermediate Class Instruction (1-1-1-1) I, II (Not offered 1951-52)
Materials and techniques of intermediate level are studied in detail. Satisfactory audition before the instructor is required for admission.

117ABCD. Voice—Advanced Voice Instruction (1-1-1-1) I, II
Materials and techniques of advanced level are studied in detail. Satisfactory audition before the instructor is required for admission.

121ABCD. Strings—Intermediate Class Instruction (1-1-1-1) I, II
Materials and techniques of intermediate level are studied in detail. Satisfactory audition before the instructor is required for admission. Sections are offered in violin, viola, cello, and bass.

122ABCD. Strings—Advanced Class Instruction (1-1-1-1) I, II
Repertoire includes study of standard orchestral parts, solos, sonatas, suites and concerti. Satisfactory auditions before the instructor are required for admission. Sections are offered in violin, viola, cello, and bass.

126ABCD. Woodwinds—Intermediate Class Instruction (1-1-1-1) I, II
Materials and techniques of intermediate level are studied in detail. Satisfactory audition before the instructor is required for admission. Sections are offered in flute, oboe, clarinet, and bassoon.

127ABCD. Woodwinds—Advanced Class Instruction (1-1-1-1) I, II
Repertoire includes study of standard orchestral parts, solos, sonatas, suites and concerti. Satisfactory auditions before the instructor are required for admission. Sections are offered in flute, oboe, clarinet, and bassoon.

131ABCD. Brass—Intermediate Class Instruction (1-1-1-1) I, II
Materials and techniques of intermediate level are studied in detail. Satisfactory audition before the instructor is required for admission. Sections are offered in horn, trumpet, trombone, tuba, and baritone.

132ABCD. Brass—Advanced Class Instruction (1-1-1-1) I, II
Repertoire includes study of standard orchestral parts, solos, sonatas, suites and concerti. Satisfactory auditions before the instructor are required for admission. Sections are offered in horn, trumpet, trombone, tuba, and baritone.

141. Methods in Teaching Piano (3) Summer
Teaching of beginning and intermediate piano. Survey of materials available for child and adult classes. Special consideration of the problems of the adult beginner. Supervised teaching of beginning students in individual lessons and class groups. Formerly Music 128.

142. Survey of Harmony and Musical Form (2) (Irregular)
A review of diatonic and chromatic harmony, modulation and musical form. The material covered will serve as refresher study for the Colleague Examination under the California Plan of the Music Teachers Association of California. Not open to music majors or minors. Formerly Music 101.

146A. Fundamentals of Conducting (1) I
Elements of baton technique and development of basic skills common to choral and instrumental conducting.

146B. Instrumental Conducting (1) II
Study of orchestra and band scores of graduated levels of advancement. The class will prepare and conduct instrumental works in public performances. Prerequisite: Mus. 146. (Formerly Ed. 145B.)

146C. Choral Conducting (1) I
Representative literature and techniques for choral organizations will be studied and performed. Practical experience in typical conducting situations will be emphasized in various grade levels. Prerequisite: Mus. 146A. (Formerly Music 120A.)

150ABCD. Advanced Individual Study (1-1-1-1) I, II
For the teaching credential performance requirement or for the requirements of the major emphasis curricula leading to the A.B. degree with a major in music. See explanation below for conditions under which credit may be given for music study under private instructors.

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

153. Opera Technique (2) I, II
Training in interpretation and characterization of light and grand opera. Specific work in coordination of opera ensemble. Formerly Music 131.

166. Honors Course I, II (Credit to be arranged)
To be arranged after consultation with the chairman of the department. Refer to the Honors Program.

199. Special Studies (1-3) I, II
Special studies in music. Prerequisite: Consent of the chairman of the department. Maximum, six units.

ACTIVITY COURSES

The activity courses are designed to afford opportunity for observation of rehearsal techniques and laboratory experience in the study and performance of a wide range of representative literature of various periods.

(G)170A-170B. Chamber Music (1-1) I, II
Sections for string, woodwind, brass and piano ensemble groups. Permission of the instructor required. Formerly Music 130ABCD.

170C-170D. Chamber Music (1-1) I, II
Continuation of Music 170A-170B.

172. Beginning Instrumental Ensemble (1) I, II (Not offered 1951-52)
Open to all instrumental students. Group performance of simple orchestral parts and band scores. Prerequisites: Music 20A, 25A, 30A, or equivalents, one or more. Formerly Music 124A.

172B. Intermediate Instrumental Ensemble (1) I, II (Not offered 1951-52)
Group performance of orchestral and band scores of more advanced grade. Materials covered will prepare the student for minor parts in either the symphony orchestra or the symphony band. Prerequisites: Music 72A or equivalent. Formerly Music 124B.

(G)175ABCD. Symphony and Marching Band (2-2-2-2) I, II
Permission of the instructor required. Formerly Music 126ABCD.

(G)180ABCD. Symphony Orchestra (1-1-1-1) I, II
Permission of the instructor required. Formerly Music 113ABCD.

(G)185ABCD. Chorus (1-1-1-1) I, II
Permission of the instructor required. Formerly Music 115ABCD.

(G)186ABCD. Treble Clef (1-1-1-1) I, II
Permission of the instructor required.

(G)187ABCD. Men's Glee Club (1-1-1-1)

Permission of the instructor required. Formerly Music 112ABCD.

(G)188ABCD. Workshop Chorus (1-1-1-1) I, II

Open to students who do not have music as a major or minor field and who are interested in singing standard choral works. No entrance examination required. Closed to music majors and minors. Formerly Music 120ABCD.

Graduate Courses**200A-200B. Special Problems in Music (2-2) Year, I**

A graduate course in which students may carry out projects in various fields of music under the direction of faculty members who are specialists in the field chosen. Students registering for this course must apply for work within a certain field after conference with the music faculty.

203. Musicology (2) I

Survey of bibliography and methods of research in music history and literature. Emphasis upon interrelationship of musical developments and trends in other arts. Completion of an acceptable thesis in fields of investigation chosen by the student. Prerequisites: Music 101A-101B and permission of the instructor. Advanced courses in Harmony, Composition, and Form and Analysis are desirable.

206. Composition (2) II

Music composition in the larger forms. Students will be required to submit a complete work in one of the larger musical forms as thesis in the course. Prerequisites: Music 105A-105B, 106A, 107A, 121A and permission of the instructor.

**CONDITIONS UNDER WHICH CREDIT MAY BE GIVEN FOR
MUSIC STUDY UNDER PRIVATE INSTRUCTORS**

Credit may be allowed for private instruction in music under the following conditions:

1. The applicant for such credit must be a regularly enrolled student in the music department of the college.
2. The instructor giving such private work must be approved by the music department. All private work and the names of all such teachers must be registered in the office of the music department chairman at the beginning of the semester.
3. In the case of first semester private study, a placement examination conducted by the music department faculty at the beginning of the semester will show the status of the student at the beginning of his work.
4. Evidence that the standards of the music department have been met will be shown by an examination conducted by the music department faculty at the end of the semester.
5. Ten clock-hours of lessons, and 100 hours of practice per semester are required for one unit of credit.

PHILOSOPHY**IN THE DIVISION OF SOCIAL SCIENCES**

Major work is not offered in philosophy.

Minor

A minor in arts and sciences is offered in philosophy. The minor must include at least 15 units of work in philosophy, nine units of which must be from courses carrying upper division credit.

A teaching minor is not offered in philosophy.

Lower Division Courses**(G)1A. Introduction to Philosophy (3) I, II**

The place of philosophy in intelligent living. The methods, values, and areas of philosophical inquiry. Through discussion procedures, each student is encouraged to think independently on issues in ethics and religion.

(G)1B. Introduction to Philosophy (3) I, II

The nature of philosophical inquiry as applied to problems of knowledge and reality. Through discussion procedures, the student has opportunity and is encouraged to formulate his own tentative conclusions.

(G)3A-3B. History of Philosophy (3-3) Year, I

The development of the major concepts of philosophers in the western tradition. Relations of philosophy to science, art, religion, and social and political conditions. 3A covers the ancient and medieval period, 3B the modern. 3A is not prerequisite for 3B.

20. Logic (3) I

The use of logic in science and practical life. Analysis of fallacies. Logic and language. Formation and validation of hypotheses. Interpretations of probability. The logic of experimentation.

Upper Division Courses**(G)101. Contemporary Philosophy (3) II**

The major philosophical issues, movements, and figures in American and European philosophy of the twentieth century. Prerequisite: 3 units selected from Philosophy 1A, 1B, 3A, or 3B.

110. The Philosophy of John Dewey (2) I

(Offered in 1951-52 and alternate years)

The background, development, and influence of John Dewey's thought. His philosophy of education as related to his logical, epistemological, metaphysical, psychological, ethical, and esthetic theories.

111A-111B. Theory of the State (3-3) Year, I

The nature of the state, its organization and activities, and its relation to the individual and to other states. Special attention is given to recent developments in the field of political thought. Not open to students with credit for Political Science 111A-111B.

121. Deductive Logic (3) II (Offered in 1952-53 and alternate years)
Definition, classification, and division. The forms of reasoning. Analysis of propositions. Immediate inference. The syllogism. Dilemmas. Modern symbolic logic.

(G)129. Social Ethics (3) I

Ethical issues of contemporary life. Individualism vs. collectivism; democracy vs. dictatorship; ethical problems arising in law, medicine, business, government, and interpersonal relationships.

130. Theory of Ethics (3) II

A study of significant and typical value theories and systems and of the concrete problems such theories seek to explain. The emphasis will be placed on moral values. The student will be encouraged to examine critically his own system of values.

136. Philosophy of Art (3) II

The nature of esthetic experience. The principal theories of art, both traditional and contemporary, are studied at length, both in relation to actual artistic production and to the role of art in society.

137. Philosophy of Science (3) I (Offered in 1952-53 and alternate years)

A critical examination of the basic concepts and methods underlying contemporary scientific thought. Contributions of the special sciences to a view of the universe as a whole. Prerequisite: 3 lower division units in philosophy.

PHYSICAL EDUCATION IN THE DIVISION OF HEALTH, PHYSICAL EDUCATION AND RECREATION

Major

A major in arts and sciences is offered in physical education for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. A minor in a field other than physical education is required.

Major for Men: Lower division requirements: Two units of physical education activity courses in general education; Physical Education 53, 63, 64, 74; Zoology 8. Upper division requirements: 26 upper division units to include seven units from physical education courses numbered 141 to 148, inclusive; Physical Education 155, 168, 170A-170B, 177; and eight units selected from courses in health, physical education, or recreation.

Major for Women: Lower division requirements: Four units of physical education activity courses to include Physical Education 1A, 2A-2B, 3A-3B, 4, 5, and 6 (two of these units may be counted as general education); Physical Education 53, 72, and Zoology 8. Upper division requirements: 26 upper division units to include Physical Education 155, 156A-156B, 160, 161, 168, 170A-170B, 177; and seven units selected from courses in health, physical education, or recreation.

A teaching major is offered in physical education for the general secondary and special secondary school credentials. For statement of requirements, refer to these credentials.

Minor

A minor in arts and sciences is offered in physical education. The minor consists of a minimum of 15 units of work in physical education, nine units of which must be in courses carrying upper division credit. The plan for this minor must be approved by the chairman of the department.

A teaching minor is offered in physical education for the general secondary, and the special secondary credentials. It may be offered only as a second teaching minor for the general elementary and the kindergarten-primary credentials. For statement of requirements, refer to these credentials.

Required Activities

All lower division students must elect one or more activity course each semester. Two units of activity credit must be offered for graduation, but no more than one activity course in any one semester may be counted toward this requirement. Students carrying fewer than 12 units during any semester may obtain permission from the Dean of Instruction to postpone taking physical education, but not be exempted therefrom. No permanent excuses from required activity courses will be granted. The college physician, in conjunction with the chairman of the department, will consider stringent cases on an individual basis and recommend.

A medical examination is given each student when entering college and recommendation is made as to type of activity most beneficial. Individually adapted physical education classes to care for special needs are offered. The content of the required courses is planned to give each student an opportunity to participate in many activities of carry-over value, developmental nature, and recreational interest. An opportunity is afforded for students to participate in competitive sports and intramural programs.

MEN'S DEPARTMENT

Freshmen are required to choose from courses numbered 1-10. Sophomores and upper division students may choose from all courses offered. An activity course may be taken for credit once only.

Lower Division Courses

ACTIVITY COURSES

All activity courses are general education courses.

- | | |
|--|---------------------------------------|
| 1A-1B-1C-1D. Individual Adaptation ($\frac{1}{2}$) I, II | 10. Wrestling ($\frac{1}{2}$) I, II |
| 2. Basketball ($\frac{1}{2}$) I, II | 13. Archery ($\frac{1}{2}$) I, II |
| 3. Boxing ($\frac{1}{2}$) I, II | 14. Badminton ($\frac{1}{2}$) I, II |
| 4. Gymnastics ($\frac{1}{2}$) I, II | 15. Fencing ($\frac{1}{2}$) I, II |
| 5. Soccer ($\frac{1}{2}$) I | 16. Golf ($\frac{1}{2}$) I, II |
| 6. Softball ($\frac{1}{2}$) II | 17. Handball ($\frac{1}{2}$) I, II |
| 7. Touch Football ($\frac{1}{2}$) I | 18. Tennis ($\frac{1}{2}$) I, II |
| 8. Track and Field ($\frac{1}{2}$) I, II | 19. Bowling ($\frac{1}{2}$) I, II |
| 9. Volleyball ($\frac{1}{2}$) I, II | 20. Swimming ($\frac{1}{2}$) I, II |
| | 23. Sailing ($\frac{1}{2}$) I, II |
| | 24. Hiking ($\frac{1}{2}$) I, II |

INTERCOLLEGIATE SPORTS

- | | |
|---------------------------------------|-------------------------------------|
| 30. Baseball ($\frac{1}{2}$) II | 35. Gymnastics ($\frac{1}{2}$) II |
| 31. Basketball ($\frac{1}{2}$) I | 36. Tennis ($\frac{1}{2}$) II |
| 32. Cross Country ($\frac{1}{2}$) I | 37. Track ($\frac{1}{2}$) II |
| 33. Football ($\frac{1}{2}$) I | 38. Wrestling ($\frac{1}{2}$) II |
| 34. Golf ($\frac{1}{2}$) II | |

WOMEN'S DEPARTMENT

Freshmen are required to choose from courses numbered 1-11. Sophomores may choose from all courses offered. An activity course may be taken for credit once only.

The individual activities, tennis, golf, archery, badminton, swimming, and dancing are offered through the year. Candidates for the special secondary credential in physical education must select one as a major activity and two others as minors. Skills in the activities must be maintained as prerequisite to the senior course, Physical Education 185.

Lower Division

ACTIVITY COURSES

All activity courses are general education courses.

- 1A-1B. Fundamental Skills ($\frac{1}{2}$) I, II
Practice in efficient fundamental body movements.
- 2A-2B. Folk Dancing (Men and Women) ($\frac{1}{2}$) I, II
2A is a prerequisite for 2B.
- 3A-3B. Modern Dance (Men and Women) ($\frac{1}{2}$) I, II
Practice in dance techniques and rhythms. 3A is a prerequisite for 3B.

TEAM SPORTS

All courses in team sports are general education courses with the exception of Physical Education 22.

4. Fieldball, Soccer, Speedball ($\frac{1}{2}$) I, II
5. Softball, Volleyball, Hockey ($\frac{1}{2}$) I, II
6. Basketball ($\frac{1}{2}$) I, II
- 11A-11B. Ballroom Dancing (Men and Women) ($\frac{1}{2}$) I, II
11A is a prerequisite for 11B.

12A-12B. Advanced Modern Dance (Men and Women) (1-1) Year, I
Laboratory experiments in advanced choreography and percussion accompaniment.
Prerequisites: 3A and 3B.

13A-13B. Archery ($\frac{1}{2}$) Year, I, II

14A-14B. Badminton ($\frac{1}{2}$) Year, I, II

16A-16B. Golf ($\frac{1}{2}$) I, II

18A-18B-18C. Tennis (Beginning, Intermediate, Advanced) ($\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$) I, II
18A is a prerequisite for 18B; 18B is a prerequisite for 18C.

19A-19B. Bowling ($\frac{1}{2}$) I, II

20A. Swimming (For non-swimmers only) ($\frac{1}{2}$) I, II

20B. Swimming (Intermediate) ($\frac{1}{2}$) I, II

21. Life Saving (1) I, II

Learning of safety in and on the water and the ability to assist or rescue a person in danger of drowning. Course content qualifies for the American Red Cross Life Saving Certificate.

22. Water Safety Instruction (1) II

Methods and materials for teaching swimming. Course qualifies for American Red Cross Swimming Instructors Certificate. Prerequisite: P.E. 20B, or equivalent, and American Red Cross Senior Life Saving Certificate.

23. Sailing ($\frac{1}{2}$) I, II

24. Hiking ($\frac{1}{2}$) I, II

MEN AND WOMEN

PROFESSIONAL THEORY COURSES

Lower Division Courses

53. Physical Education in the Elementary School (2 $\frac{1}{2}$) I, II

The State program in physical education for the elementary school forms the basis of the course. Candidates for the Elementary Credential are required to take the course section which includes two lectures and two laboratory periods per week. Candidates for the Special Secondary Credential in physical education may take the course section which includes two lectures without laboratory periods.

63. Professional Activities (Men) (2) I

Presents an opportunity for majors to develop the skills and techniques of the dance. Organization and presentation of materials are emphasized. (Formerly Physical Education 43.)

64. Professional Activities (Men) (2) II

Emphasis is placed on acquiring the skills, teaching techniques, and development of knowledge and interest in tumbling, apparatus, stunts, free exercise and self-testing activities. (Formerly Physical Education 44.)

72. Introduction to Physical Education (2) I, II

History and principles of physical education and sports movements of the world. Objectives of the modern school program are studied and an effort is made to give to the student a basic philosophy and background for professional education.

Upper Division Courses

141. Professional Activities: Gymnastics (Men) (2) I

The skills and teaching techniques in gymnastics. The place of tumbling, apparatus, self-testing and calisthenics in the school program. Knowledge of the rules for competition in gymnastics.

142. Professional Activities: Swimming (Men) (1) II

The development of skills in swimming with emphasis on the teaching techniques. Scope of course is from beginning swimming to life saving techniques.

145. Professional Activities: Team Sports (Men) (2) I

The skills, rules, teaching techniques, officiating, and organization of materials in such sports as soccer, touch football, softball, hockey, basketball, and others are emphasized.

146. Professional Activities: Individual Sports (Men) (2) II

The skills, rules, teaching techniques, officiating, and organization of materials in such sports as handball, tennis, badminton, archery, golf, and others are emphasized.

147. Professional Activities: Coaching Baseball and Track (Men) (1-2) II

Organization of practice sessions, drills for developing fundamental skills and special abilities. Problems of scheduling, handling teams and game strategy are taken up. Rules, sessions, and officiating techniques are given attention.

148. Professional Activities: Coaching Football and Basketball (Men) (1-2) I

Organization of practice sessions, drills for developing fundamental skills and special abilities. Problems of scheduling, handling teams, and game strategy are taken up. Rules, sessions, and officiating techniques are given attention.

151. Instructor's Course in First Aid (2) I, II

Instructor's course in first aid, as outlined by The American Red Cross. Standard first aid techniques, care of injured, certification and record keeping, and practical work in first aid.

155. Applied Anatomy and Kinesiology (3) I

Anatomical and kinesiological analysis of human structure and movement. Application of analysis relative to mechanical principles as influenced by efficiency factors of body functions. Prerequisite: Zoology 8.

156A-156B. Sports Methods (Women) (2-2) Year, I

Analysis of skills in basketball, hockey, soccer, speedball, volleyball, and softball; methods of presenting sports to large groups; study of rules and officiating. Prerequisites: Physical Education 4, 5, and 6.

160. Teaching of Body Mechanics (Women) (2) I

Efficient use of the body in daily living; evaluation and classification of exercises, methods, and practice in planning and presenting material.

161. Folk Dancing Materials and Advanced Techniques (Women) (2) I

Folk customs, festivals, and costumes. Selection of dance materials for various age groups. Practice in advanced techniques. Prerequisite: Physical Education 2A.

162. History and Philosophy of the Dance (2) I

Historical background and appreciation of dance, with special emphasis upon development of art in America. The justification for dance as an educational and creative art medium and its place in the curriculum. Not open to students with credit for Aesthetics 162. A general education course in Literature, Philosophy, and the Arts.

164A-164B. Methods in Modern Dance (2-2) Year, I

Methods in the teaching of modern dance techniques and choreography. Selection of materials and course planning for the secondary school. Prerequisite: Physical Education 12A-12B, or satisfactory examination in dance skills.

168. Physiology of Exercise (3) II

A nonlaboratory course emphasizing the relation of physiology to muscular exercise in physical activities. Prerequisites: Physiology 1A and Zoology 8 or equivalent.

170A-170B. Recreational Leadership (2-2) Year, I

Principles and practices in recreational leadership. Methods of instruction and special techniques in the activities of the recreation program. Attention to crafts, music, social programs, drama, special projects, dance, sports, campcraft, and outdoor education. Not open to students with credit for Recreation 170A-170B.

177. Individual Program Adaptation (3) II

The adaptation of programs for the typical individual, including physical examinations, training and prescribed exercises, follow-up, instructional problems, and evaluation.

185. Techniques of Individual Sports (Women) (1) I

Rules and teaching methods and testing individual playing techniques and knowledge in tennis, archery, badminton, and swimming. Prerequisite: Senior standing.

190. Administration of Physical Education in the Secondary School (3) I, II

Problems and practices in the organization and administration of the secondary school activity program. Study, selection and adaptation of activities, examination, and grouping of pupils, use and evaluation of tests. Selection and maintenance of equipment and facilities.

199. Special Study in Physical Education (1-3) I, II

An opportunity is presented for extensive review of pertinent literature, individual research and advanced study of problems in the profession. Prerequisite: Approval of the chairman of the division. Maximum credit, six units.

Graduate Courses**200. Evaluation Procedures in Health, Physical Education and Recreation (2)**

A study of tests and measurements in the profession with practice in their use, construction and interpretation of results.

201. Developmental Physical Education (2)

Intensive study of postural divergencies, lack of physical development, and methods of correcting such conditions through exercise are studied. Practice in making physical examinations, constructing individual exercise programs, teaching remedial exercises, as well as ethical procedures and limitations are considered. Prerequisite: Applied Anatomy and Kinesiology.

203. Problems in Physical Education (2)

A survey of current problems facing the Physical Education profession is 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 are required.

204. Problems in Recreation (2)

A survey of current problems facing the recreation profession is 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 are required. Not open to students with credit for Recreation 204.

298. Special Study (1-3)

An individual study course designed primarily for candidates for the master's degree.

299. Thesis (3)

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

PHYSICAL SCIENCE IN THE DIVISION OF PHYSICAL SCIENCES

Major

A *physical science major in arts and sciences* may be used for the A.B. degree by students who have been admitted to the teacher education program if eight units in professional education courses are completed by the date of degree candidacy. Lower division requirements: Chemistry 1A-1B, Physics 4A-4B-4C (or 2A-2B-3A-3B), Mathematics 3A-3B, 4A (recommended 4B). Upper division requirements: 24 units to include a minimum of seven units in each of chemistry and physics. Chemistry must include Chemistry 101. Physics must include Physics 107 and 158 (or 148 if physics preparation is 2A-2B). Recommended: Physical Science 110. Other courses to be selected with approval of the departmental adviser.

A *teaching major in physical science and general science* is offered for the general secondary and general junior high school credentials. For a statement of requirements, refer to these credentials.

Minor

A *teaching minor in physical science and general science* is offered for the general secondary, special secondary, general elementary, and kindergarten-primary credentials. For statement of requirements, refer to these credentials.

Lower Division Courses**(G)1. Introduction to Physical Science (3) I, II**

A general course presenting the nature of man's physical universe with materials chosen from astronomy and physics. Not open to students who have had a college course in physics or astronomy, or Physical Science 40.

(G)2. Introduction to Physical Science (3) I, II

Emphasis will be upon materials chosen from geology and chemistry to show the origins of natural materials and their use. Not open to students who have had a college course in chemistry or geology.

(G)10. Introduction to Photography (3) I, II

A consideration of photographic optics and chemistry; nature of light and image formation; photographic emulsions, exposure and development. Composition and lighting. Two lectures and one three-hour laboratory per week. Will not satisfy laboratory requirements in physical science but may be counted toward general education under practical arts.

Upper Division Courses**110. Photography for Teachers (3)**

Designed for more mature students to learn photographic skills useful in teaching.

130. Advanced Photography (3) I

A consideration of advanced negative control, projection printing techniques, composition and editorial content, architectural and illustrative photography, and flood photoflash techniques. Two lectures and three hours of laboratory per week. Prerequisite: Physical Science 10.

(G)150. Readings in the Physical Sciences (2)

Reading from selected materials with informal class discussion of topics.

PHYSICS IN THE DIVISION OF PHYSICAL SCIENCES

Major

A *major in arts and sciences* is offered in *physics* for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: Physics 4A-4B-4C, Chemistry 1A-1B, or their equivalents. Recommended: 24 upper division units in physics to include Physics 105A-105B, 107, 110, 158; three units a reading knowledge of French or German. Upper division requirements: 24 upper division units in physics to include Physics 102, 160, or 170; two units chosen from Physics 120, 122, or 124; and two units of Physics 199. A minor in mathematics is required, consisting chosen from Physics 102, 160, or 170; two units chosen from Mathematics 118A-118B, 124; and two units of Physics 199. A minor in mathematics, and Mathematics 104, 111, 119, 121, or 124. Nine units of chemistry, physics, and mathematics may be counted toward general education requirements.

A *major in arts and sciences* is offered in *physics* for the B.S. degree. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: Physics 4A-4B-4C, Chemistry 1A-1B, Mathematics 3A-3B, and 4A-4B, or their equivalents. Upper division requirements: A minimum of 36 upper division units including Physics 102, 105A-105B, 107, 110, 158; two units of upper division laboratory; two additional units of Physics 199; and Mathematics 118A-118B. The program, planned in consultation with the departmental adviser for this degree, must be designed to provide a four-year terminal program for the student. A minor is not

required. Nine units of chemistry, physics, and mathematics may be counted toward general education requirements.

The following additional courses are required as a part of two options approved under this degree: *Applied Physics*: Physics 106, 112 and four units of Physics 120. Recommended: Physics 114, 160, 170 and Astronomy 107. *Electronics*: Physics 104, 122, 124, 160 and either Physics 152 or Engineering 150. Recommended: Physics 114, 170 and Astronomy 107.

A *teaching major in physical science and general science* is offered for the general secondary school credential and a *teaching major in general science* is offered for the general junior high school credential. For statement of requirements, refer to these credentials.

Minor

A *minor in physics* is offered in arts and sciences. The minor must include at least 15 units, or maximum of 22, six units of which must be in courses carrying upper division credit.

A *teaching minor in physical science and general science* is offered for the general secondary, special secondary, general elementary, and kindergarten-primary credentials. For statement of requirements, refer to these credentials.

Lower Division Courses

NOTE: A maximum of 12 units of lower division physics credit may be applied toward the A.B. or B.S. degrees.

(G)2A-2B. General Physics (3-3) Year, I

This course is for liberal arts and certain pre-professional students who do not desire intensive physics preparation. Lectures, demonstrations and discussions. 2A, Properties of Matter, Mechanics and Heat. 2B, Electricity, Magnetism, Sound and Light. Prerequisite: Two years of high school mathematics.

(G)3A-3B. Physical Measurements (1-1) Year, I

A laboratory course to accompany Physics 2A-2B. 3A: Properties of Matter, Mechanics and Heat. 3B: Electricity, Magnetism, Sound and Light. One three-hour laboratory per week. Prerequisite for 3A: Concurrent or previous registration in Physics 2A. Prerequisite for 3B: Concurrent or previous registration in Physics 2B.

4A-4B-4C. Principles of Physics

The following sequence of three courses is designed to give a thorough background in the fundamental principles of physics, with applications to practical problems. Each course three lectures and one three-hour laboratory per week.

4A. Mechanics (4) I, II

The mechanics of solids and fluids. Prerequisites: Credit for Mathematics 3A, or concurrent registration with permission of instructor. Not open to first semester freshmen.

4B. Electricity (4) I, II

Magnetism, electricity and elementary electronics. Prerequisite: Physics 4A.

4C. Heat, Sound and Light (4) I, II

Heat and elementary thermodynamics, sound and light. Prerequisite: Physics 4B.

14. Acoustics of Music (3) II

Fundamentals of acoustics and audition underlying musical phenomena presented in descriptive and nonmathematical terms. Prerequisite: A technical understanding of music.

22. General Radio (2) I

Theory of vacuum tubes and their applications to communication, television, and industry. This course may be taken for credit in addition to the maximum 12 units of lower division physics toward the A.B. or B.S. degree.

Upper Division Courses

102. Basic Electronics (3) I

Principles of electron tubes and resistance loaded amplifiers. Negative feedback, and its application to regulated power supplies, cathode followers and direct coupled amplifiers. Prerequisite: Physics 4B.

104. Communications (3) II

Power amplifiers, oscillators, modulators and detectors. Radio transmitters and receivers for amplitude modulation and frequency modulation. Television systems. Antennas and radio wave propagation. Prerequisite: Physics 102 or permission of the instructor.

105A-105B. Analytical Mechanics (3-3) Year, I

Fundamental principles of Newtonian mechanics by elementary vector methods. 105A: Statics and kinematics of rigid bodies. 105B: Dynamical principles underlying linear and rotary motion of rigid bodies, with additional work in vibration and impact. Prerequisite: Physics 2A-2B or 4A and a working knowledge of calculus.

106. Optics (3) II

A study of reflection, refraction, dispersion, interference, diffraction, double refraction and polarization, with applications to optical instruments. Also wave propagation, radiation, spectra and the nature of light. Prerequisite: Physics 2B-3B or 4C.

107. Electrical Measurements (2) I

The theory and application of electrical measurements, including the measurements of current, voltage, power, resistance, capacitance and inductance. Stress on determination of probable errors of measurements. An hour lecture and a three-hour laboratory per week. Prerequisite: Physics 2B-3B or 4B and a working knowledge of calculus.

110. Alternating Current Circuits (3) I

The operator j applied to circuits containing resistance, capacitance and inductance; series and parallel resonance; coupled circuits; transients; practical circuit elements, networks. Prerequisite: Physics 4B and Mathematics 4A.

112. Heat and Thermodynamics (3) II

A study of the thermal properties of matter with an introduction into the kinetic theory of gases and the laws of thermodynamics. Prerequisites: Eight units in physics and a working knowledge of calculus.

114. Acoustics (3) II

A study of wave motion and its application to the production, transmission and reception of sound. Material in architectural acoustics, speech and hearing, and acoustical instruments is presented. Prerequisites: Physics 2B-3B or 4C.

120. Advanced Laboratory (2) I, II

Advanced experimental measurements in a branch of physics listed below. The course may be repeated for each subject. With the consent of the instructor and adviser, the course may be repeated in the same subject but with new material. Prerequisite: Consent of the instructor.

A. Acoustics

B. Atomic Physics

C. Electricity

D. Heat and Pyrometry

E. Mechanics

F. Optics

122. Electronics Laboratory (2) I

An experimental study of electron tubes and their associated circuits. Study of cathode ray oscilloscope, vacuum tube voltmeter, characteristics of power supplies, amplifiers and filter systems. An hour lecture and a three-hour laboratory per week. Prerequisite: Previous or concurrent registration in Physics 102, or permission of instructor.

124. Radio Measurements (2) II

Laboratory measurements of the parameters of resonant circuits at radio frequencies. Study of the properties of oscillators, modulators, detectors and wave guides. An hour lecture and a three-hour laboratory per week. Prerequisite: Previous or concurrent registration in Physics 104.

(G)148. Introduction to Modern Physics (3) II

A nonmathematical course covering recent developments in the field of physics, including X-rays, radio-activity, cosmic rays, atomic and nuclear energy. Prerequisite: Upper division standing. Not open to students who have credit for Physics 4A-4B-4C, or equivalent.

152. **Advanced Electronics (2) I**
Theory of vacuum tubes, ultra-high frequency systems and selected topics from contemporary electronics. Prerequisite: Physics 104.
158. **Atomic Particles (3) I**
A study of experimental evidence for the existence and properties of the elemental atomic and nuclear particles. Introduction to the fields of atomic and nuclear physics. Prerequisite: Physics 4A-4B-4C, or equivalent.
160. **Circuit Analysis (3) II**
A study of filter design, transmission lines, and network analysis. Prerequisite: Physics 110.
166. **Honors Course (Credit to be arranged) I, II**
An individual study arrangement for students admitted to the Honors Program. Enrollment through the department chairman, subject to the approval by the Committee on Honors. Refer to the Honors Program.

170. **Electromagnetic Theory (3) II**
Electrostatics and magnetostatics treated by vector methods; chemical and thermal effects; motion of ions in electric and magnetic fields; magnetic field of a current; electromagnetic induction and radiation. Prerequisites: Physics 110, and a working knowledge of vector analysis and differential equations.
199. **Special Study (1-2) I, II**
Reading and laboratory work on a special problem in physics selected by the student. Each student will be assigned a member of the staff who will supervise his work. All candidates for the A.B. or B.S. Degree in physics are required to enroll for 2 units of this course during the upper division work. Credit, hours and topics to be arranged in each case.

Graduate Courses

200. **Seminar (2-2) I, II**
An intensive study of some phase of advanced physics.
- | | |
|---|------------------------------|
| A. Mathematical Physics | F. Electromagnetic Radiation |
| B. Theoretical Mechanics | G. Atomic Physics |
| C. Kinetic Theory of Gases | H. History of Physics |
| D. Advanced Acoustics | I. Fluid Mechanics |
| E. Advanced Electronics and Electricity | J. Vibration |
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.
298. **Special Study (1-3)**
An individual study course designed primarily for candidates for the master's degree.
299. **Thesis (3)**
Guidance in the preparation of a project or thesis in physics for the master's degree.

PHYSIOLOGY

IN THE DIVISION OF LIFE SCIENCES

Major and minor work are not offered in physiology. Courses in this field may be used as part of the major in zoology or life sciences, and are recommended as part of the lower division requirements for the major in psychology, and for the physical education credential.

Lower Division Courses

- 1A. **Human Physiology (3) II**
A lecture course considering the functions of the human body, and including a brief review of the microscopic and gross anatomy of the structures discussed. Prerequisite: Elementary chemistry and high school or college biology or zoology. Three hours of lecture per week. Credit reduced to 2 units, for students having credit for Zoology 20.

1C. Human Physiology (2) II

A study of the human functions through laboratory experiments and demonstrations. Prerequisites: Physiology 1A completed or in progress. Six hours of laboratory per week.

Upper Division Courses

101. General Physiology (4) II

Fundamentals of plant and animal functions. Two lectures and two laboratory periods per week. Prerequisites: Biology 3 and 4 or Zoology 1A-1B and Chemistry 1A-1B or Chemistry 2A-2B.

POLITICAL SCIENCE

IN THE DIVISION OF SOCIAL SCIENCES

Major

A *major in arts and sciences* is offered in *political science* for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: Political Science 1A-1B or 71A-71B. Upper division requirements: 24 units to include (a) Political Science 199 and (b) 21 upper division units in political science distributed among two of the following groups: *Group I: Theory and government*, courses numbered 100-139; *Group II: Administration*, courses numbered 140-149; *Group III: International affairs*, courses numbered 150-179. A minor is required and is to be chosen under the direction of the chairman of the department.

Students majoring in political science are advised to become as familiar as possible with related social science fields. Majors should have a reading knowledge of at least one foreign language. For students who expect to enter government service, two programs of study are offered: The Public Administration Curriculum and the Public Personnel Management Curriculum. For a description of these curricula, refer to the section of the bulletin entitled: Preprofessional and Vocational Curricula.

A *teaching major* is not offered in political science; however, courses in political science may be used as part of the *teaching major in social science* for the general secondary and general junior high school credentials. For statement of requirements, refer to these credentials.

Minor

A *minor in arts and sciences in political science* is offered. The minor consists of a minimum of 15 units, or maximum of 22, nine units of which must be in courses carrying upper division credit.

A *minor in arts and sciences in public administration* is also offered. The minor consists of Political Science 71A-71B in the lower division; Political Science 140A-140B and three units from 198 or other political science course in the upper division.

A *teaching minor in social science* is offered for the special secondary, general elementary, and kindergarten-primary credentials. For statement of requirements, refer to these credentials.

Lower Division Courses

- (G)1A. **Introduction to Government (3) I, II**
Theories and principles of government, with special attention to the problems created by modern industrialism and population pressures.
- (G)1B. **Introduction to Government (3) I, II**
A comparative survey of selected foreign governments: Their constitutional principles, political institutions, and governmental problems.
- (G)71A-71B. **Introduction to American Government and Politics (3-3) Year, I, II**

Semester I: Governmental organization in the United States; the federal system; the organization, powers and functions of the legislative, executive and judicial branches of the government; the relations between federal, state and local units of government.

Semester II: Expansion of governmental functions and the development of means of democratic control; an examination of the increased use of government as an instrument of social control; the history, motivation, methods and control of political parties; nominations, elections and minority groups; pressure politics.

Upper Division Courses

- (G)101. American Institutions (3) I
The principles of the Constitution of the United States of America, and a survey of the political and social institutions which have developed under the Constitution.
- (G)105. American Political Thought (3) II
A survey of the development of American ideas concerning political authority from the period of colonial foundation to the present time.
- (G)111A-111B. Theory of the State (3-3) Year, I
The nature of the state, its organization and activities, and its relation to the individual and to other states. Special attention is given to recent developments in the field of political thought. Not open to students with credit in Philosophy 111A-111B.
120. Political Parties (3) I
A critical analysis of the political party as a part of the process of government; party organization and activities; nominating and campaign methods; theories and functions of the party system; party responsibility. Special emphasis will be placed upon the function of the two-party system in American government.
121. Basic Factors in American Politics (3) I
An analysis of American political, legal, economic, and social factors in their relation to our political system and the public interest.
122. Propaganda and Public Opinion (3) II
A study of the forces which mold the American public mind, the practice of propaganda, a description and analysis of public relations, pressure groups and their effect in American public life. Not open to students with credit for Journalism 132.
128. Government Report Writing (2) I
Actual writing problems in government, including surveys, recommendations, studies, analyses, progress reports, annual reports, etc., are discussed and their solutions analyzed. Attention to methods of collecting and organizing data, and practice in effective presentation of facts and ideas. Special consideration is given to problems of class members.
135. California Law of Municipal Corporations (2) II
California law governing the nature, regulation and control of the counties, charter cities, sixth class cities, school districts and special districts. The creation, alteration, dissolution, legal actions by and against, powers and duties; rights and liabilities of local governments.
136. Administrative Law (2) I
The law of public office and public officers, powers of administrative authorities, scope and limits of administrative powers, remedies against administrative action.
- (G)137A-137B. Constitutional Government (2-2) Year, I
Modern government and politics; its theoretical foundations, institutions and problems. Emphasis will be on American experience with useful comparisons with other countries. Either semester may be taken first.
- (G)139A-139B. American Constitutional Development (3-3) Year, I
A study of the work of the Convention of 1787 and of significant phases of American constitutional law. Not open to students with credit for History 172A-172B.
- 140A-140B. Principles of Public Administration (3-3) Year, I
Semester I: The administration of public services, staff and line functions, theories of organization and practices, and procedures of different types of governmental agencies.
Semester II: Principles and problems in governmental budgeting, performance programs, controls over administrative behavior, responsible bureaucracy and professionalism in the public services. Not open to students with credit in Political Science 147A-147B.

142. State Government (3) II
A study of the political structure and its operation used in the carrying on of the functions exercised by the states; state-federal relations; state-local government relations; particular emphasis on California government.
143. Municipal and County Government (3) I
A study of the organization and its operation used to carry into effect the functions assigned to local governmental units; particular emphasis upon local government in California.
144. Introduction to Public Personnel Administration (2) I
An introduction to the field, giving general coverage of the problems involved in recruitment, placement, supervision, etc., of public employees. Prerequisite: Permission of instructor.
145. Public Personnel Management (2) II
An advanced course involving detailed examination of management of personnel in public service. Prerequisite: Permission of instructor.
146. Wage and Salary Administration (3) I
Problems of job analysis; major techniques of job evaluation, including ranking, classification, point system, factor comparison; problems of wage and salary administration, incentive pay methods; merit rating plans. Not open to students with credit for Commerce 154.
- 147A-147B. Public Administration (2-2) Year, I
Administrative organization. Relationship between federal, state, and local governments. Budget, personnel, management, and control. Not open to students with credit for Political Science 140A-140B.
148. The Government of Metropolitan Areas (2) I
A study of the governmental problems of metropolitanism; overlapping of governments, services, planning and financing. The use of intergovernmental contracts for public service, proper public service areas, and special authorities.
- (G)150A-150B. International Relations (3-3) Year, I
A historical and analytical consideration of the basic factors—historic, geographic, economic, ideologic, and strategic—which underly and condition the modern conflict between the "sovereign state" and the "community of nations." Fall semester: Origins and development through the nineteenth century. Spring semester: Twentieth century experimentation and conflict.
- 151SP. The Contemporary World (1) II
A series of lectures by members of the faculty on selected problems of the current international scene. Reports required of students enrolled for credit.
152. International Organization (3) I
A critical analysis of the organization by which the international community seeks to provide for the exercise of legislative, administrative and judicial functions on the international level: Diplomatic and consular corps; conferences; administration through commissions and unions; amicable procedures for settlement of disputes; The League of Nations-United Nations experiment.
153. Principles of International Law (3) I
The function of law in the international community. The historical development of the ideas and rules of international law and their place in the modern diplomatic and legal structure.
154. International Law and the Courts (3) II
A case study of the application of the rules of international law in national and international courts.
155. Dynamics of Modern International Crises (3) I
The determination and analysis of facts surrounding international crises since World War II; the evaluation of these crises and their effects upon external policies of the United States and the operations of the United Nations. Prerequisite: Consent of the instructor.

158A-158B. American Foreign Policy (3-3) Year, I

Lectures and reading in the field of American foreign relations since 1776, with special emphasis, in the second semester, upon affairs since 1900. A general survey course. Not open to students with credit for History 176A-176B.

160. Government of the British Dominions (3) II

Development of the new British Empire and imperial relations of the self-governing dominions; government of Canada, Australia, New Zealand, and South Africa; conditioning historical, economic and racial factors. Not open to students with credit for History 156B.

162. Government of England (3) I

The structure and functioning of English parliamentary system with emphasis upon present day political principles and parties.

165. Governments of Latin America (3) II

The governments of leading and representative Latin American states. Emphasis on the background and evolution of current political institutions and philosophies.

166. Honors Course (Credit to be arranged) I, II

Refer to the Honors Program.

167. Government of the Soviet Union (3) I

Theory and practice of government in the Soviet Union, with some attention to Russian foreign affairs.

198. Internship in Public Administration (3-6) I, II

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 permission of the instructor.

199. Special Studies in Political Science (3) I, II

Directed study in research techniques in the field of political science. Limited to Political Science majors.

Graduate Courses**200A-200B. Seminar in Government (2-2) Year, I, II****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 (1-3)

An individual study course designed primarily for candidates for the master's degree.

299. Thesis (3)

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

PSYCHOLOGY**IN THE DIVISION OF SOCIAL SCIENCES****Major**

A *major in arts and sciences* is offered in *psychology* for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. Two plans are provided for the major: One for those students expecting to pursue the study of psychology beyond the A.B. degree; the other for those students who wish to extend their general education in the field of psychology.

The lower division requirements for all majors are: Psychology 5 and 6; six units in biology, physiology, and/or zoology; three units in philosophy; and six units in anthropology and/or sociology.

The upper division requirements for each major will be determined by the plan selected by the student, but a minimum of 24 upper division units in psychology is required for a major.

A *teaching major*: A major in psychology may be combined with two teaching minors for a general secondary credential. Refer to the outline of requirements for this credential.

Minor

A *minor in arts and sciences* is offered in psychology. The minor must include at least 15 units of work in psychology, nine units of which must be from courses carrying upper division credit.

A *teaching minor* is not offered in psychology.

Plan A Major

Plan A is for a nonprofessional major in psychology and is designed to provide the student with a greater understanding of his expanding group relations leading to happy and effective family and community living. The recommended pattern of courses for this program is not designed to facilitate graduate and professional study in psychology.

The upper division requirements for Plan A majors: Psychology 106, 131, 145, and electives to complete the major. It is expected that each student under Plan A will select, with the assistance of his adviser, a pattern of courses in line with his particular objectives in pursuing Plan A. For most students in Plan A, the following courses will be found particularly helpful: Psychology 105A, 107, 122, 132, 150, and 152.

To facilitate the purpose of Plan A the following courses in other departments are recommended as electives: Anthropology 1A-1B; Biology 1 or Zoology 1A-1B; Economics 1A-1B and 102; Health Education 90; Philosophy 1A-1B; Zoology 114 and 165; and courses in home economics.

Plan B Major

The purpose of Plan B is to facilitate the specific preparation of those students who wish to pursue graduate and professional preparation in Clinical, Industrial and Personnel, and Theoretical-Experimental Psychology. To this end, three separate programs are suggested under Plan B to provide an undergraduate basic preparation for further study in these fields.

Upper division requirements for all Plan B majors: Psychology 104A, 105A, 160A or 160B, and additional courses to complete the major selected from one of the groups listed below. For each of the three patterns of special preparations under Plan B, the following courses are recommended:

Precinical: Psychology 105B, 106, 131, 145, 150, 151, 152, 160A. The following courses are recommended in other departments: Anthropology 1A-1B; Biology 3 and 4, or Physiology 1A and 1C; Philosophy 1A-1B or 3A-3B, 20, and 129; Sociology 135 and 170; Speech Arts 176 or 179A-179B; and Zoology 165. A natural science minor is recommended.

In selecting courses and choosing electives, the student is urged to consult his adviser and the Bulletin on the requirements for special secondary credentials for school psychologist and for correction of speech defects.

Industrial and Personnel: Psychology 121, 122, 131, 132, 145, 152, 160B. The following courses are recommended in other departments: Business 103A, and 153; Economics 1A-1B, 100A, 150, 151, 185, and 170; Philosophy 20; Political Science 144, and 145; Sociology 50, 51; and six units selected from Sociology 135, 170, 180, 190; and Speech Arts 4; a minor in business, economics, political science, or sociology is recommended.

Theoretical-Experimental: Psychology 104B, 131, 140, 145, 150, 160A, 160B, and 177. The following courses are recommended in other departments: Chemistry 2A-2B; Foreign Language; Mathematics 1, 3A, and 3B; Philosophy 1A, and 20; Physics 2A-2B, and 3A-3B; Physiology 1A and 1C; Zoology 1A-1B, 100, and 165. A mathematics or natural science minor is recommended.

The Master of Arts Degree

The Master of Arts degree is offered in the department as part of the fulfillment of requirements for the School Psychologist credential. It is also possible to obtain a Master's degree if one obtains a School Psychometrist credential. Refer to these credentials and to the Master of Arts degree.

Lower Division Courses**(G)1. General (3) I, II**

An introduction to some of the facts, principles, and concepts which are basic to understanding human behavior.

2. **Psychology Laboratory** (1) I, II
Application of experimental methods to psychological problems. Includes design and execution of experiments. One lecture and three laboratory hours. Prerequisite: Psychology 1.
5. **Principles of Psychology: Basic Organization of Behavior** (3) I, II
The basic sensory, neural and motor mechanisms and their functions in human behavior. Prerequisite: Psychology 1 and sophomore standing.
6. **Principles of Psychology: Learning and Integrated Behavior** (3) I, II
Attending, perceiving, and learning, including social learning, personality development, and conditions of efficient work. Prerequisite: Psychology 1 and sophomore standing.
11. **Applied Psychology** (3) I, II
A survey of the application of the basic principles of psychology to business, education, industry, government, law, medicine and related fields. Prerequisite: Psychology 1.
12. **Mental Hygiene** (3) I, II
An examination and interpretation of the factors which go into the making of the person as he adapts himself to the social world about him. The development of the normal personality. Prerequisite: Psychology 1.

Upper Division Courses

- 104A. **Statistical Methods in Psychology** (3) I, II
An introduction to the use of quantitative methods in psychology, with emphasis upon measures of central tendency and variability, graphic methods and percentiles, linear correlation, and the applications of the normal probability curve. Prerequisite: Psychology 1. Not open to students with credit for Economics 140 or Sociology 103.
- 104B. **Advanced Statistics** (3) II
A further study of quantitative methods in psychology with particular emphasis on methods of correlation, chi-square, and contingency, and an instruction to the analysis of variance. Prerequisites: Mathematics C and Psychology 104A, or permission of instructor.
- 105A. **Introduction to Psychological Testing** (3) I, II
The basic principles of testing. The selection and critical evaluation of group tests of intelligence, personality, aptitude, interest and achievement. Prerequisite: One of the following courses: Psychology 5, 11; Education 102A, 102D. Not open for credit to students with credit for Education 105A.
- 105B. **Individual Mental Testing** (3) II
The principles of individual testing. Instruction and practice in the administration of the Stanford-Binet and similar tests. Prerequisite: Psychology 105A and permission of instructor.
- (G)106. **Developmental Psychology** (3) I, II
A study of the psychological development of the normal individual from conception through childhood, adolescence, maturity, and old age. Stress is laid upon the interdependence of the various periods of the individual's life. Prerequisite: Psychology 1.
107. **Psychology of Later Maturity** (3) II
The psychological, physiological, and sociological factors influencing behavior in the later years of life. Prerequisite: Psychology 1.
121. **Personnel and Industrial Psychology** (3) I, II
Psychological principles applied to problems of selection and assignment of industrial personnel, employee training, and fatigue. Prerequisite: Psychology 104A, or Economics 140, or Sociology 103.
122. **Public Opinion Measurement** (3) II
The history, methods, and problems of public opinion and attitude measurement. Emphasis will be placed upon the polling of consumers and voters. Students will be given field experience. Not open to students with credit for Journalism 122.

130. **Educational Psychology** (2) I, II
To develop understanding of the applications of psychological research for effective classroom teaching. Observation and field work required. Prerequisite: Psychology 1. Not open to students with credit for Education 130.
131. **Foundations of Personality** (2) I
The human organism in its interaction with the environment and the resultant changes in the development of the personality. Prerequisite: One full year of psychology or equivalent.
132. **Personality Adjustment** (2) II
The application of the fundamental principles of personality to problems of adaptation. Mental hygiene as a local, state, and national problem. Prerequisite: Psychology 131 or permission of instructor.
140. **Physiological Psychology** (3) I, II
The neurophysiological basis of behavior, with particular attention to the psychophysiology of sensory and motor processes, emotion, bodily needs, and learning. Prerequisite: Psychology 5 and 6, or 10 units in biological sciences.
- (G)145. **Social Psychology** (3) I, II
The major problems and findings concerning processes of social interaction, group behavior and group membership, and the socialization of the individual. Prerequisite: Psychology 1. Not open to students with credit for Sociology 145.
150. **Abnormal Psychology** (3) I, II
The psychology of behavior disorders, with emphasis on the amentias, neuroses, and psychoses. Prerequisite: One full year of psychology.
151. **Introduction to Clinical Appraisal** (3) I
A study of diagnostic devices in psychology, tests of clinical significance, ratings, interviewing for securing information. Projective and case study analyses; problems of insight, rapport, empathy, and prediction of individual behavior. Prerequisites: One of the following: Psychology 105A, 106, 131, 140, or 150.
152. **Introduction to Methods of Counseling** (3) II
An introduction to problems and methods of counseling and adjustment. The utilization of psychological principles and techniques in dealing with various types of guidance situations. Prerequisite: Enrollment limited to senior and graduate students in psychology or pre-social work.
- 160A. **Experimental Psychology** (3) I, II
Demonstrations of the principles and conditions of learning, perceiving, problem solving, and thinking. Methodology and design of experiments. Two laboratory sessions and one seminar period per week. Prerequisite: Psychology 5, 6, and 104A.
- 160B. **Experimental Psychology** (3) I, II
Demonstration of laws governing various sensory experience and motor activities. Experiments in space perception, errors of judgment, and conditions of work and fatigue. Two laboratory sessions and one seminar period per week. Prerequisites: Psychology 5 and 6.
166. **Honors Course** (Credit to be arranged) I, II
A special study arrangement for students admitted to the Honors Program. Enrollment through the Department Chairman, subject to the approval by the Committee on Honors. (See the Honors Program.)
170. **Comparative Psychology** (3) I
A study of the behavior of animals with a view to gaining a better understanding of human behavior. An analysis of the leading experimental work on sensory discrimination, learning, and intelligence of each animal group, from amoeba to man. Prerequisites: Psychology 5 and 6.
175. **Theories of Learning** (3) II (Offered 1951-52 and alternate years)
A critical study of the facts, principles, and major theories of learning. Prerequisites: Psychology 1, 5, 6, 104A, and consent of the instructor.

177. **History of Psychology** (3) II
A survey of the historical background of modern psychology. Limited to psychology majors with senior standing.
191. **Practicum in Clinical Psychology** (1-6) I, II
A practicum in mental testing and clinical psychology in various state hospitals, mental hygiene clinics, and similar institutions. Prerequisite: Consent of the instructor.
199. **Individual Studies in Psychology** (1-3) I, II
Limited to students in the senior year. Permission to enroll must be obtained from a member of the staff. Maximum credit six units.

Graduate Courses

201. **Seminar** (2)
A review, integration, and supplementation of the student's knowledge of psychology.
205. **Advanced Mental Testing** (3)
The theory of mental testing and a comprehensive survey of the various verbal and nonverbal individual mental tests.
211. **Advanced Clinical Psychology** (3)
A seminar and practicum in directive and nondirective counseling. The theory of and experience in the use of techniques available to the clinical psychologist.
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** (1-3)
An individual study course designed primarily for candidates for the master's degree.
299. **Thesis** (3)
Guidance in the preparation of a project or thesis for the master's degree.

RECREATION

IN THE DIVISION OF HEALTH, PHYSICAL EDUCATION AND RECREATION

Major

A *general major in arts and sciences in recreation* is offered for the A.B. degree. Students desiring a concentration in this field should refer to the Recreation Curriculum in the section of the bulletin entitled: Preprofessional and Vocational Curricula.

Minor

A *minor in arts and sciences* is offered in recreation. Lower division requirements: Two units of physical education activity courses, Physical Education 53, and two units chosen from Art 61B, or fields of dance, drama, or music. Upper division requirements: Recreation 165, 170A-170B, and 184A or 184B. Recommended: Physical Education 151. Consultation with the chairman of the department is advised.

A *teaching minor in recreation* is offered for the special secondary credential. For statement of requirements, refer to this credential.

Upper Division Courses

165. **Administration of Community Recreation** (3) II
The principles of organization and promotion of leisure time and recreation activities. Course content covers growth of the recreation movement, administration of areas and facilities, program of activities, features, services, organization and administration problems. A required course for recreation minors.

- 170A-170B. **Recreational Leadership** (2-2) Year, I
Principles and practices in recreational leadership. Methods of instruction and special techniques in the activities of the recreation program. Attention to crafts, music, social programs, drama, special projects, dance, sports, camp-craft and outdoor education. Courses may be taken separately. Not open to students with credit for Physical Education 170A-170B.

- 184A-184B. **Field Work in Recreation** (3-3) Year, I
Observation and participation in supervised group activities in the field. Practical experience in the various public and semipublic community recreation agencies.

199. **Special Study in Recreation** (1-3) I, II
An opportunity is presented for extensive review of pertinent literature, individual research and advanced study of problems in the profession. Prerequisite: Approval of the chairman of the department. Maximum credit, 6 units.

Graduate Courses

204. **Problems in Recreation** (2)
A survey of current problems facing the recreation profession is 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 are required. Not open to students with credit for Physical Education 204.

ROMANCE LANGUAGES

IN THE DIVISION OF LANGUAGES AND LITERATURE

Major

A *major in arts and sciences* is offered in Romance languages for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: French 1, 2, 3, 4, 5, 6, and Spanish 1, 2, 3, 4, 5, 6. Recommended: History 4A-4B or 8A-8B (for those who emphasize Spanish in the upper division). Upper division requirements: A minimum of 24 upper division units in French and Spanish including French or Spanish 199. At least nine units of upper division courses must be taken in each language. A person majoring in Romance languages must have a minor to be decided upon in consultation with his major adviser.

A *teaching major in Romance languages* is offered for the junior high and general secondary credentials. For specific information, refer to these credentials.

Minor

A *minor in arts and sciences* is not offered in Romance languages, but minors may be taken in French or Spanish.

A *teaching minor* in foreign languages, including Romance languages, is offered for the special secondary, and general elementary and kindergarten-primary credentials. Teaching minors are offered in French and Spanish for the general secondary credential. For specific information, refer to these credentials.

Graduate Courses

290. **Romance Language Bibliography** (1)
Exercises in the use of basic reference books, journals, and specialized bibliographies in the field of the Romance languages, preparatory to the writing of a master's project or thesis. Prerequisite: Nine units of upper division French or Spanish and graduate status.

SOCIAL SCIENCE**IN THE DIVISION OF SOCIAL SCIENCES****Major**

A *major in arts and sciences in social sciences* is offered for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: Six units in each of three of the following fields, the selection to be made on advise of the division adviser: (1) economics, (2) geography, (3) history, (4) political science, and (5) sociology-anthropology. Upper division requirements: A minimum of 30 units selected with the approval of the division adviser, as follows: Six to 15 units in each of three fields, provided that one of these fields be different from the fields selected for lower division work, and a 199 course. (Twelve units in social science courses may be counted toward pattern requirements in general education social science courses.)

A *teaching major in social sciences* is offered for the general junior high school and general secondary school credentials. For statement of requirements, refer to these credentials.

Minor

A *minor in arts and sciences* is not offered in the social sciences.

A *teaching minor in social sciences* is offered for the special secondary, general elementary, and kindergarten-primary credentials. For statement of requirements, refer to these credentials.

SOCIOLOGY**IN THE DIVISION OF SOCIAL SCIENCES****Major**

A *major in arts and sciences*, is offered in *sociology* for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: Sociology 50 and 51. Upper division requirements: A minimum of 24 upper division units in sociology, including Sociology 103, 110, 135, 152, 153, and 173 or 174.

A *teaching major* is not offered in sociology; however, courses in sociology may be used as part of the *social science major* for the general junior high school credential or the general secondary credential. For specific information, refer to the outlines of requirements for these credentials.

Minor

A *minor in arts and sciences* is offered in sociology. The minor must include at least 15 units of work in sociology, nine units of which must be from courses carrying upper division credit.

A *teaching minor* is not offered in sociology for the general secondary credential; however, courses in sociology may be used as part of the *social science minor* for the special secondary, the general elementary, and the kindergarten-primary credentials. For specific information, refer to the outlines of requirements for these credentials.

Lower Division Courses**(G)50. Contemporary Social Problems (3) I, II**

Survey of modern social problems recognizing the sociological factors involved. Emphasis on the scientific method of approach. An evaluation of various causes and solutions of problems. A prerequisite for upper division courses in Sociology. Sophomore standing required. Not open to students who have credit for Social Science 40.

(G)51. Principles of Sociology (3) I, II

The development and use of the concepts applied to sociological analysis; the effects of isolation and social contacts, interaction, processes, forces, controls, collective behavior and social progress. A prerequisite for upper division courses in Sociology. Sophomore standing required. Prerequisite: Sociology 50.

Upper Division Courses**103. Elementary Social Statistics (3) I, II**

Analysis and presentation of elementary material in the fields of sociology and social work. Tabular and graphic presentation, analysis of frequency distributions, trends, simple correlation, sampling and reliability techniques. Prerequisites: Mathematics A-B and Sociology 50 and 51. Mathematics C or 7A recommended. A prerequisite for most upper division sociology courses. Not open to students who have credit for Economics 140 or Psychology 104A or 104B.

(G)110. Race Relations (3) I

A study of the Negro, Oriental, and other minority groups in the United States. A study of mental capacities, education, cultural achievement, family life, delinquency and other social factors of each group. Race prejudice, racial consciousness, theories of racial superiority and inferiority will be considered. Prerequisite: Sociology 50, 51.

120. Industrial Sociology (3) II

Analysis of group relationships within economic organizations. Problems of leadership, morale and conflict. Some attention to the sociology of occupations and professions. Prerequisites: Sociology 50, 51.

(G)135. Marriage and the Family (3) I, II

Preparation for marriage. Prediction scales for evaluating success or failure in marriage. Parent-child relationships; factors in successful and unsuccessful marriages; higher education and the birth rate; married women in industry and professions; desertion and divorce. Not open to students who have credit for Sociology 45, or Home Economics 135.

145. Social Psychology (3) I, II

Personality as it develops in relation to social environment. Suggestion, imitation, leadership, the crowd, public opinion, social control, prejudice, propaganda, sex differences, race differences. Prerequisites: Psychology 1, 11, Sociology 50, 51. Not open to students who have credit for Psychology 145.

152. History of Social Thought (3-3) Year, I

The origin and development of social theory in Europe and America; consideration of the fields and specialization and research in contemporary American sociology. Prerequisite: Sociology 50, 51.

153. Modern Social Theory (3-3) Year, II

A study of theories basic to modern sociological research, including the viewpoints of European and American thinkers. Prerequisites: Sociology 50, 51, and 152.

166. Honors Course (Credit to be arranged) I, II

Refer to the Honors Program.

170. Social Disorganization (3) I

Survey of many alleged abnormal phenomena in society as seen in society today in various forms of individual, family, community and world disorganization, such as crime, prostitution, extreme alcoholism, migratory workers, divorce, revolution and war.

173. Criminology and Penology (3) I

The extent and characteristics of crime; consideration of physical, mental, economic, and sociological causes of crime; study of methods of penal discipline, prison labor, parole, and probation; programs of prevention. Prerequisite: Sociology 50, 51.

174. Juvenile Delinquency (3) II

The nature and extent of delinquency; the causative factors involved; methods of control and prevention, with special attention to the protective and remedial measures offered by the school, home, Juvenile Court, correctional institutions and camps, probation and parole, and recreational agencies. Prerequisite: Sociology 50, 51, or permission of the instructor.

180. Population Problems (3) I

Problems of population increase, migration, shifts in composition of population relative to age, sex, and racial distribution. Population practices and theories. Biological and geographical aspects of population problems. International population movements. Prerequisite: Sociology 50, 51 and 103.

185. Community Welfare Organization (3) II

An analysis of the structure and process of community organization for social welfare as well as the functional relationships between public and private welfare agencies. Field work will be required to study some of the social agencies of San Diego. Prerequisite: Sociology 50, 51 and Sociology 103, or permission of instructor.

187. Urban Sociology (3) I, II

A study of the structure and function of the modern city; types of neighborhoods; forms of recreation; social forces in a metropolitan area; types of urban personalities and groups; rural-urban conflicts of culture. Practical field studies required. Prerequisite: Sociology 50, 51 and 103.

190. Fields of Social Work (3) I, II

A survey of the nature of social work and the various kinds of social work which are found in the modern urban life. The student is familiarized with the various social agencies in the community, their problems and methods of work, by readings and field trips. Volunteer social work in some social agency recommended. Prerequisites: Sociology 50, 51, and 103.

199. Special Studies (1-3) I, II

Limited to students in the senior year. Permission to enroll must be obtained from a member of the staff.

Graduate Courses**200A-200B. Seminar (2-2)****230. Principles of Social Case Work (3) I**

A study of the principles and practices of social case work; problems of case recording and analysis. Directed field work and case studies. Prerequisites: Sociology 190 or Psychology 152 or Education 233.

231. Field Work in Social Case Work (3) II

Supervised practice in local social work agencies. Prerequisite: Sociology 190 and 230.

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 (1-3)

An individual study course primarily for candidates for the master's degree.

299. Thesis (3)

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

SPANISH**IN THE DIVISION OF LANGUAGE AND LITERATURE****Major**

A *major in arts and sciences* is offered in *Spanish* for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: Spanish 1, 2, 3, 4, 5, 6; French 1, 2, or German 1, 2, or Latin 1, 2. Recommended: History 4A-4B or 8A-8B. Upper division requirements: A minimum of 24 upper division units, at least 21 units of which must be in Spanish, including Spanish 199. The remaining three units may be selected from Geography 118, 119, 120; History 161, 162; Political Science 165; Spanish 115 or 116; or Comparative Literature 101A, 140A-140B, 152A-152B, 155, 158, 159, in consultation with the Chairman of the Department. A person majoring in Spanish must have a minor to be decided upon in consultation with his major adviser.

A *major in arts and sciences* is offered in *Romance languages*. For specific information, refer to Romance languages in the section on Announcement of Courses.

A *teaching major* is offered in Spanish or Romance languages for the junior high school and general secondary credentials. For specific information, refer to these credentials.

Minor

A *minor in arts and sciences* is offered in *Spanish*. The minor consists of a minimum of 15 units to a maximum of 22 units of work in Spanish, six units of which must be from upper division courses.

A *teaching minor* is offered in Spanish for the general secondary, the special secondary, the general elementary, and the kindergarten-primary credentials. For specific information, refer to these credentials.

Lower Division Courses**(G)1. Elementary (3) I, II**

Pronunciation, oral practice, readings on Spanish culture and civilization, minimum essentials of grammar.

(G)2. Elementary (3) I, II

Continuation of Spanish 1. Prerequisite: Spanish 1 or one year of high school Spanish.

(G)3. Intermediate (3) I, II

Reading in Spanish of cultural material, short stories, novels or plays; oral practice; outside reading with oral and written reports. Prerequisite: Spanish 2 or two years of high school Spanish.

(G)4. Intermediate (3) II

Continuation of Spanish 3. Prerequisite: Spanish 3 or three years of high school Spanish.

5. Intermediate (2) I, II

A practical application of the fundamental principles of grammar by means of oral and written work based on Spanish texts. Prerequisite: Spanish 2 or two years of high school Spanish.

6. Intermediate (2) II

Continuation of Spanish 5. Prerequisite: Spanish 5 or three years of high school Spanish.

10. Conversation (2) I

Practice in the spoken language; practical vocabulary; conversation on assigned topics; simple dialogues and plays. Prerequisite: Spanish 2 or two years of high school Spanish.

11. Conversation (2) II

Continuation of Spanish 10. Prerequisite: Spanish 10, or Spanish 3, or three years of high school Spanish.

(G)15. Spanish Civilization (2) I

The major currents and characteristics of Hispanic life and culture, as expressed through the centuries in literature, art, philosophy, music and science. Conducted in English. No prerequisite.

(G)16. Spanish Civilization (2) II

Continuation of Spanish 15. No prerequisite.

D. Intermediate Spanish (3) I (Offered for last time in Fall of 1951)

Reading and composition; study of standard prose as basis for class work; collateral reading in prose and drama, with written reports in Spanish; dictation. Class work conducted mainly in Spanish. Individual conferences. Prerequisite: Spanish C or four years of high school Spanish.

50. Spanish Commercial Correspondence (3) I

(Offered in Fall of 1952 and every two years thereafter)
A one-semester intermediate course in Spanish composition, directed along the line of commercial correspondence. A practical course, with translation of business letters, and supplementary reading in Spanish on commercial subjects. Prerequisite: Three years of high school Spanish, or completion of Spanish 3 or 5.

70. Spanish for Elementary-School Teachers (3) II

Elementary Spanish to meet the needs of elementary-school teachers. Emphasis on the oral aspects of the language with reading centering around Mexico. Open only to students enrolled in the general elementary school curriculum. No prerequisite.

Upper Division Courses**101A-101B. Conversation and Composition (3-3) Year, I**

Translation into Spanish of moderately difficult English prose passages. Free composition in Spanish. Outside reading of modern Spanish plays, with written reports in Spanish. Oral practice in colloquial Spanish with extensive use of phonograph recordings. Prerequisite: Spanish 4 and 6, or Spanish D, or their equivalent, with a grade of C.

102A-102B. Introduction to Spanish Classics (3-3) Year, I (Offered in 1952-53)

Reading from several types of classical literature. Lazarillo de Tormes and other novels of Roguery; selections from Don Quixote, and the Cien Mejores Poesias Castellanas; one drama each from the works of Lope de Vega, Calderon, Alarcon, and Moreto; collateral reading and reports. Prerequisite: Spanish 4 and 6, or their equivalent, with a grade of C.

104A-104B. Spanish-American Literature (3-3) Year, I (Offered in 1952-53)

Reading from representative Spanish-American authors during the colonial revolutionary and modern periods. Lectures, class reading, collateral reading and reports. Prerequisite: Spanish 4 and 6, or their equivalent, with a grade of C.

105A-105B. Modern Spanish Drama (3-3) Year, I (Offered in 1953-54)

The development of the drama of Spain from the beginning of the nineteenth century to the present time. Prerequisite: Spanish 4 and 6, or their equivalent, with a grade of C.

110A-110B. Novel and Short Story in Spain (3-3) Year, I

The development of the novel and short story in Spain from 1830 to the present time. Prerequisite: Spanish 4 and 6, or their equivalent, with a grade of C.

(G)115. Spanish Civilization (2) I

An advanced course in Hispanic culture of the past and present, with emphasis on the arts, philosophy, and literature. Lectures, class discussions, outside readings, written reports on individual topics. Conducted in English. Prerequisite: Sophomore standing.

(G)116. Spanish Civilization (2) II

Continuation of Spanish 115. Prerequisite: Sophomore standing.

150. Spanish Phonetics (3) II

A theoretical and practical study of Spanish phonetics. A study of vowels, consonants, isolated words, and phonic groups. The principles of versification, and exercises in intonation. Especially recommended for prospective teachers of Spanish. Prerequisites: Spanish 4 and 6, or their equivalent, with a grade of C.

166. Honors Course (Credit to be arranged) I, II

Refer to the Honors Program.

199. Comprehensive Reading and Survey Course (3) II

Designed to fill up the gaps in the reading done in courses. Class meeting once a week for guidance, reports, and quizzes. Required of all seniors majoring in Spanish.

Graduate Courses**201. Old Spanish (2) I**

A study of the language and literature of Spain from the 12th to the 15th centuries. Prerequisite: Nine units of upper division Spanish and graduate status.

204. Seminar in Spanish-American Literature (2) II

Intensive investigation of some phase of Spanish-American literature. A single country, an author, or some special problem will be studied and reported upon. Prerequisite: Nine units of upper division Spanish and graduate status.

290. Bibliography (1) See Romance Languages**298. Special Study (1-3)**

An individual study course designed primarily for candidates for the Master's degree.

299. Thesis (3)

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

SPEECH ARTS**IN THE DIVISION OF LANGUAGE AND LITERATURE****Major**

A *major in arts and sciences* is offered in *speech arts* for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: A minimum of 15 units of lower division courses in speech arts, specializing in the field of dramatic art, radio, public speaking, or a guided combination of the three. Upper division requirements: A minimum of 24 upper division units including Speech Arts 150 with an emphasis of 12 units in one area of concentration (theater, radio, public speaking, or speech pathology). A minor is suggested, but not required.

A *teaching major in speech* is offered for the general secondary and special secondary credentials. For a statement of requirements, refer to these credentials.

Minor

A *minor in arts and sciences* is offered in *speech arts*. The minor consists of a minimum of 15 units, or maximum of 22, nine units of which must be in courses carrying upper division credit.

A *teaching minor in speech arts* is offered for the general secondary, special secondary, general elementary, and kindergarten-primary credentials. For statement of requirements, refer to these credentials.

Lower Division Courses**1. Voice and Diction (3) II**

Exercises and drills to improve the quality, flexibility and effectiveness of the speaking voice leading to good usage in standard American speech. Preparatory to further courses in public speaking and dramatic art.

2. Oral Communication Laboratory (1) I, II

Those who fail the speech test must take this course concurrently with Speech Arts 3. This course provides training in articulation, voice control, vocabulary. Individual laboratory assistance on specific speech problems.

(G)3. Oral Communication (2) I, II

Training in fundamental processes of oral expression; method of obtaining and organizing material; outlining principles of attention and delivery; practice in construction and delivery of various forms of speeches.

4. Extemporaneous Speaking (3) I, II

Practice in extemporaneous speaking on subjects of current interest, both national and local, with stress laid on the organization and delivery of content material. Forum discussion will provide speakers with the opportunity of assembling facts quickly to meet such questions as any audience situation might demand.

11A. Fundamentals of Interpretation (3) I, II

Application of the principles involved in "making words come alive": Response to thought and mood, sensory association, emphasis, climax. Practice selections in poetry and prose.

11B. Intermediate Interpretation (3) I, II

Oral reading of various types of material suitable for popular audiences: Stories, humorous sketches, light and sentimental verse. Prerequisite: 11A or 55A.

20. Remedial Speech (1) I, II

Corrective laboratory training prescribed on the basis of vocalization tests made on recording machine. Required of education majors who fail to meet speech requirements tests. Private assistance given to stutterers and lispsers.

54. Stage Make-Up (2) I

Practice in the application of stage make-up including straight and character. Two laboratory periods per week.

55A. Elementary Acting (3) I, II

Speech and pantomime applied to the problems of characterization in group scenes. This course is concerned with the discovery and development of talent and the appreciation of the actors' problems for directors and teachers. (32 laboratory hours required.)

55B. Intermediate Acting (3) I, II

Continuation of 55A emphasizing more emotional material from longer scenes. Some one-act plays will be produced from this class. (32 laboratory hours required.) Prerequisite: 55A or previous training.

56A-56B. Dramatic Production (3-3) Year, I

A general survey of play production planned to present the whole organization of the college and school theater, with emphasis on backstage practice, stagecraft, and elementary lighting. Crews for the departmental productions are organized in this class. Prerequisite: 55A or permission of the instructor is prerequisite for 56B.

57. Elementary Stage Costume (3) II

A study of pattern drafting, draping, color harmony and the use of fabrics for stage costuming. Students will receive practical training in the construction of stage costumes. Two lecture-demonstration and recitation hours and one laboratory per week.

60A-60B. Argumentation and Debate (3-3) Year, I, II

Obtaining and organizing of evidence and the construction and use of the brief; study and discussion of current issues; the presentation of formal and informal debates. Attention to intramural and intercollegiate debating.

61A-61B-61C-61D. Intercollegiate Debate (1-1-1-1) I, II

Students are limited to four units, including lower and upper division courses.

63A-63B-63C-63D. Verse Choir (1-1-1-1) I, II

Participation in verse speaking chorus to develop quality, range of tone, and ability in dramatic visualization of poetry. Students are limited to four units, including lower and upper division courses.

81. Survey of Radio (3) I, II

A course presenting the background, theory, and fundamentals of radio broadcasting. The subject material includes history of broadcasting; types of radio programs; broadcast operation.

82. Radio Announcing (3) I

The fundamentals of radio announcing. Class time will be divided between lecture and laboratory practice of announcing styles. Voice training for radio will be stressed. Prerequisite: Speech Arts 81.

83. Radio Acting and Directing (3) II

For students interested in the production of dramatic radio programs. Lecture and laboratory for radio techniques in characterization. The use of sound effects and music cues and bridges will be considered. Emphasis will be on production analysis. Actors for Radio Guild productions will be taken from this class. Prerequisite: Speech Arts 81.

Upper Division Courses**108. Advanced Interpretation (3) I, II**

Analysis of techniques of literary composition as guides to oral interpretation. Achievements of the creative artist as they affect the interpretative artist. Prerequisite: 11A or 11B or permission of instructor.

118A. Play Analysis (3) I

Deals with the one-act play and its technique. New plays are read and discussed in class during their period of development.

118B. Playwriting (3) II

Analyses of long plays. Students engage in creative writing.

120. Readings in Dramatic Art (3) II

This course will deal with dramatic materials in which the student will study complete plays for interpretation and characterization without memorization and acting techniques.

140A-140B. Stage Design (3-3) Year, I, II

The application of the principles of design, color and perspective to the design of settings for the production of period and modern plays. Students will learn to make sketches and models and paint the scenery for the departmental productions. Prerequisite: 56A-56B or permission of the instructor.

142A-142B. Summer Theater Workshop (3 or 6) Summer

A theater laboratory for those who wish to devote their entire time to training and a variety of experiences in the summer theater program including acting, design, stagecraft, lighting, directing, and stage management. Prerequisite: Permission of the instructor.

145. Stage Lighting (3) II

For directors, designers and technicians in school and community theaters concerning the principles and practice of light, color, lighting instruments, and control equipment, including the design and planning of lighting of plays. Students will serve as light crews for departmental production.

150. Phonetics (3) I, II

Auditory and kinesthetic analysis of the sounds of the English language. Valuable as a corrective course in pronunciation and articulation. Required of speech majors and those seeking the Speech Correction Credential.

152. History and Design of Costume (stage) (3) II

A study of costume from Egypt to the present. Emphasis on the use of historical costumes on the stage. Costume designs for one stage production. Drawing and painting experience desirable but not necessary.

154A-154B. History of the Theater (3-3) Year, I, II

A study of the theater from primitive times to the present. Special attention will be given to the theater as a mirror of the social and cultural background of the various countries and periods in which it is studied. Carries aesthetics credit. (Speech Arts 154B may be taken without 154A.)

155. Advanced Acting (3) I

Problems in characterization: Acting styles of the Elizabethan and Eighteenth Century periods. Prerequisite: 55A-55B or the equivalent.

156. Advanced Dramatic Production (3) II

Problems and projects in scenery and lighting in connection with the workshop and major productions of the department.

159. Stage Direction (3) I

Planned for prospective directors of plays in schools, colleges and community theaters. Through lectures, discussions, and exercise projects the student will become acquainted with the principles, procedure and methods of stage direction. Each student will be required to direct several short plays during the course.

160. Stage Direction Laboratory (1) I, II

This will consist of experience in directing a one-act play before a departmental or public audience. It may be taken with or it may be preceded by 159. Prerequisite or corequisite: 159. May be repeated once for credit.

161-A161B-161C-161D. Advanced Intercollegiate Debate (1-1-1-1) I, II

Students are limited to four units, including lower and upper division courses.

162. Advanced Argumentation (3) I

Presents a further and more detailed study in the preparation of briefs and the organizing of evidence; opportunity for participation in intramural debates, inter-collegiate debate, and community speaking activity. Prerequisite: 2A or 2B.

163A-163B-163C-163D. Advanced Verse Choir (1-1-1-1) I, II

Participation in verse speaking chorus to develop quality, range of tone, and ability in dramatic visualization of poetry. Students are limited to four units, including lower and upper division courses.

166. Honors Course (Credit to be arranged) I, II

Refer to the Honors Program.

176. Problems of Speech Correction and Articulation (3) II

Analysis and discussion of the major articulatory problems as encountered in public school work, particularly in California. Required of all students for the speech correction credential. (Minimum of 25 laboratory hours required.) Not open to students with credit for Education 176.

177. The Teaching of Lip Reading (2)

History, theory and methods of lip reading. Aids for the classroom teacher; program and materials of instruction for the specialized teacher. Opportunities for practice teaching are offered. Not open to students with credit for Education 177.

179A-179B. Nervous Speech Disorders (3-3) Year, I

Clinical survey of newest methods of speech correction with special emphasis given to stuttering. (Minimum of 25 laboratory hours required per semester.) Required course for Special Corrective Credential. Not open to students with credit in Education 179A-179B. (Speech Arts 179A is a prerequisite for 179B.)

180A-180B. Rehearsal and Performance (1) I, II

One unit of technical practice followed by one unit of acting. One unit may be repeated, making a total of three units.

181. Radio Sales and Advertising (3) I, II

A study of advertising trends in radio advertising; time buying, audience survey, and program types in relation to products to be advertised via radio broadcasting. Includes publicity and promotion of radio programming organization of a radio station; relationship between the business and entertainment factors of radio broadcasting. Open to students with consent of instructor. Not open to students with credit for Business 181.

182. Advanced Radio Production (3) II (Offered in 1951-52 and alternate years)

Advanced radio production techniques. Students are responsible for the execution of Radio Guild productions. Projects in program types include the use of sound and music. Material includes production analyses and script editing. Prerequisite: Speech Arts 83.

183. Radio Continuity and News Writing (3) II

Correlates news editing and writing with announcing styles. Radio news procedure and organization of a radio news staff; analysis of reportorial and commentary styles. Includes production techniques of "on-the-spot" and multiple point pickup broadcasts. Registration with permission of instructor. Not open to students with credit for Journalism 183.

184. Radio Writing (3) II

Includes original half-hour scripts, play or novel adaptations for radio, and the documentary program. Study of pacing and timing, the use of sound and music for bridges and cues, and radio format. Plays written by students are read and discussed during their development; the better plays to be produced by the Radio Guild for broadcast. Open to students with consent of instructor.

191. Organized Discussion (3) II

Consideration of the symposium, the panel, the open forum, the business session, and varieties of conference speaking. Emphasis upon organization and presentation. Attention to parliamentary procedure for informal groups. Prerequisite: Speech Arts 60 or equivalent.

192A-192B. Advanced Public Speaking (3-3) Year, I, II

Careful attention given to the preparation and delivery of longer speeches, using as models classics in the field of oratory. Prerequisite: 4.

199. Special Problems in Speech and Dramatic Art (1-3) I, II

May be repeated once in different departmental area for a total of six units.

Graduate Courses**200. Seminar in History of Oratory (2) II**

An advanced course for those already familiar with the techniques and theories of public speaking and debate. A history of public address from the time of Greece up to the present, organized around the theories of representative orators and their relationships to the social environment.

221. Articulatory Problems of Speech (2) I

Analysis and discussion of articulatory problems as encountered in public school work, particularly in California. Required of all students for the speech correction credential. Prerequisite: Speech Arts 150.

245. Seminar in Technical Practice (2)

Advanced technical projects in planning school theaters and their mechanical equipment, lighting control and lighting instruments and the design of lighting layouts for elaborate plays will be assigned, executed and discussed.

259. Seminar in Stage Direction (2)

An advanced course for those who are ready to direct full-length plays and to consider the problems of handling various styles and types of drama in the great periods of dramatic literature for modern production. For graduates with experience in directing plays.

260. Seminar in Oral Interpretation (2)

Aesthetic discipline applied to oral reading of masterpieces of poetry and prose. Analysis of thought and emotional content and aesthetic form, including unity and harmony, variety and contrast, balance and proportion, rhythm.

ZOOLOGY**IN THE DIVISION OF LIFE SCIENCES****Major**

A *major in arts and sciences* is offered in *zoology* for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: in the major, Zoology 1A-1B; in related fields, Botany 1 or 2A-2B, Chemistry 1A-1B or 2A-2B, Physics 2A-2B, 3A-3B. Upper division requirements: 24 units in zoology to include Zoology 100, 101, 106, 155. A minor is not required. Reading knowledge of a foreign language is recommended.

A *major in arts and sciences* is offered in *zoology* for the B.S. degree. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: in the major, Zoology 1A-1B; in related fields, Botany 1 or 2A-2B, Chemistry 1A-1B or 2A-2B, Physics 2A-2B, 3A-3B, and Mathematics 7A-7B. Upper division requirements: 36 units in zoology or approved related fields to include Zoology 100, 101, 106, 155. A minor is not required. Reading knowledge of a foreign language is recommended.

A *teaching major* is not offered in zoology; however, courses in zoology may be used as part of the *life science major* for the general secondary credential or as part of the *general science major* for the general junior high school credential. For specific information, refer to the outlines of requirements for these credentials.

Minor

A *minor in arts and sciences* is offered in zoology. The minor must include at least 15 units of work in zoology, six units of which must be from courses carrying upper division credit.

A *teaching minor* is not offered in zoology; however, it may be used as part of the *teaching minor in life science* for the general secondary credential, or as part of the *teaching minor in general science* for the special secondary, the general elementary, and the kindergarten-primary credentials. For specific information, refer to the outlines of requirements for these credentials.

Lower Division Courses

1A-1B. General Zoology (4-4) Year, I, II

An introduction to animal biology. Designed for those who expect to do advanced work. Two lectures and 6 hours of laboratory work each week. Prerequisite for Zoology 1B; Zoology 1A.

8. Human Anatomy (3) I

A study of human structure through the use of models, prepared dissections and microscope slides. Prerequisite: High school biology, Biology 3, 1, or Zoology 1A. Two hours of lecture and three hours of laboratory per week. Required of prenursing students. Credit reduced to 2 units if student has credit for Zoology 20.

20. Human Anatomy and Physiology (3) II

An elementary course in human anatomy and physiology. Prerequisite: High school biology, or Biology 1 or 3 or Zoology 1A. Lectures three hours per week. Credit reduced to two units if student has credit for Zoology 8 or Physiology 1A.

Upper Division Courses

100. Embryology (4) I, II

The development of vertebrates as illustrated by the frog, chick, and pig. Six hours of laboratory and two hours of lecture and quiz per week. Prerequisite: Zoology 1B, or Biology 3 and consent of instructor.

101. General Physiology (4) II

Fundamentals of plant and animal functions. Two lectures and two laboratory periods per week. Prerequisites: Biology 3 and consent of instructor, or Zoology 1A-1B, Chemistry 1A-1B or Chemistry 2A-2B.

104. Microtechnique (3) I, II

Introduction to methods of preparation of tissues for microscopic study. Six hours of laboratory and one hour of lecture per week. Prerequisite: One year college chemistry and Zoology 1A-1B, Botany 2A-2B, or Biology 4 and consent of instructor.

106. Comparative Anatomy of the Vertebrates (4) I

Dissection, study and comparison of organ systems of typical vertebrates. Two hours per week of lecture and six hours of laboratory. Prerequisite: Zoology 1B, or Biology 3 and consent of instructor.

108. Histology (4) I

A study of the microscopic structures and differentiation of tissues and organs of the vertebrates, especially mammals. One lecture and six hours of laboratory per week. Prerequisites: Zoology 1A-1B; recommended Zoology 100.

109. Hematology (3) I, II

Microscopic and chemical examination of blood. One lecture and two laboratory periods per week. Prerequisite: Chemistry 102.

110. Limnology (4) II

A biological survey of available fresh waters, followed by a selected problem on the relationship of an organism or group of organisms to the environment. Prerequisites: Zoology 1A-1B and elementary chemistry.

112. Marine Invertebrates (4) I

Identification and study of behavior and life histories of invertebrates of the San Diego region. Frequent collecting trips to the beaches required. Prerequisite: Zoology 1A, or Biology 4 and consent of instructor. Two hours of lecture and six hours of laboratory or field work per week.

113. Ornithology (4) II

The study and identification of birds, especially those of the Pacific Coast and the San Diego region. One hour of lecture and six hours per week of laboratory, or field excursions, and a field project. Prerequisite: Zoology 1B, or Biology 4 and consent of instructor.

113F. Field Ornithology (1) I

A field study of local birds with special emphasis upon the fall migration.

115. Cold-blooded Vertebrates (3) II

The classification, natural history and distribution of fishes, amphibians, and reptiles. Practice in the techniques of collection and the use of keys for identification. Frequent field trips. One lecture and two laboratory periods per week. Prerequisites: Zoology 1B, or Biology 4 and consent of instructor.

118. Mammalogy (3) II

Lectures on classification, adaptations, and ecological relationships of mammals. Laboratory and frequent field trips to familiarize students with local mammals, taxonomic procedures and field techniques. One lecture and six hours of laboratory per week. Prerequisites: Zoology 1A, or Biology 4 and consent of instructor.

119. Field Zoology (4) I, Summer

Designed to give a working knowledge of the animals of Southern California; field trips, lectures and laboratory emphasizing ecology, behavior, observational methods, collecting techniques and taxonomy. Prerequisite: A course in college biological science or permission of instructor.

121. General Entomology (3) I

The classification, life history, structure, and physiology of insects. Prerequisite: Zoology 1A, or Biology 4 and consent of instructor. Two hours of lecture and three hours of laboratory per week.

122. Systematic Entomology (1-2) II

Classification of insects with especial emphasis on a group of insects of the student's choice. To be taken with or to follow 121. May be repeated for credit but with a total of not more than 3 units. Three to six hours of laboratory work each week.

125. Economic Entomology (4) II

Course designed for students of agriculture and horticulture. Emphasis is placed on determination and control of insects affecting plants. Quarantine measures are also studied. Two lectures and two laboratory periods per week. Prerequisite: Zoology 1A, or Biology 4 and consent of instructor.

126. Medical Entomology (3) I

The role of insects and other arthropods in transmission and causation of human diseases. Three hours of laboratory and two hours of lecture per week. Prerequisite: Zoology 1A, or Biology 4 and consent of instructor.

128. Parasitology (4) I

Study of animal parasites with special reference to those of man. Laboratory including identification of important parasites of man, and collection and preservation of local forms. Two hours of lecture and six hours of laboratory per week. Prerequisite: Zoology 1A-1B, or Biology 4 and consent of instructor.

(G)150. Readings in Biology (2) II

Reading from a suggested bibliography with informal class discussion of topics. Subjects discussed will include history of biology, biological principles, ecology, economic zoology, zoogeography, breeding habits, animal behavior. Not open to students who have credit for Botany 150. Prerequisite: Biology 3 or equivalent.

153. Economic Biology (2) I

Study of uses of plants and animals to man and their destructive effects. Consideration also given to general methods of control and conservation. Prerequisite: Zoology 1A, or Biology 4 and consent of instructor. Not open to students who have credit for Botany 153.

155. Genetics (3) II

Principles of plant and animal genetics, with experiments and demonstrations illustrating the mechanisms of heredity. Two hours of lecture and three hours of laboratory per week. Not open to students with credit for Botany 155. Prerequisites: Zoology 1A-1B, or Botany 2A-2B, or Biology 3 and consent of instructor.

(G)160. Evolution (2) II

The development of theories of evolution. Two lectures per week. Prerequisite: Biology 3 or equivalent. Not open to students with credit for Botany 160.

(G)165. Human Heredity (2) I

Presentation of selected principles of heredity as related primarily to human inheritance. Designed primarily for nonscience majors. Two lectures per week. Not open to students with credit for Zoology 155 or Botany 155.

166. Honors Course (Credit to be arranged) I, II

Refer to the Honors Program.

199. Special Study (1-3) I, II

Admission only by consent of the instructor with whom the work is to be done. Credit and hours to be arranged in each case. Open to students who have completed at least 15 units of zoology with a grade of A or B. May be taken for a maximum of six units.

Graduate Courses**200. Seminar (3) I**

Especial emphasis will be placed on current concepts in the various fields of biology including problems of migration, distribution, speciation, evolution. Required of all graduate students.

202. Hydrobiology (2) II

A course in aquatic ecology with special emphasis on fresh water but with reference to marine biology.

213. Advanced Studies in Ornithology (2) I

Lectures and seminar on advanced problems of morphology, distribution, behavior and classification of birds.

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.

293. Special Study (2-5)

An individual study course designed primarily for candidates for the master's degree.

299. Thesis (3)

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

PROVISIONAL CURRICULUM

This curriculum is for the purpose of assisting provisional students in attaining regular status in a curriculum which leads to the A.B. degree. Students in the provisional program are given close supervision in selection of courses and are placed in classes specially designed to aid in adjustment to the college program.

Reclassification to regular status may be obtained upon the completion of at least 24 units of work of "C" grade with an over-all grade point average of 1.0, or upon recommendation of a reclassification committee. Reclassification must ordinarily take place within the first year of college work. Students who do not so reclassify will be placed on probation. (See Probation and Disqualification.)

The courses in the provisional curriculum are open only to students in provisional status. Provisional students in their first college year must select three courses each semester from the list of subjects in the provisional curriculum. All other courses selected to complete the student's program may be chosen from the regular schedule of courses or from additional courses in the provisional curriculum with the approval of the adviser.

A SUGGESTED PROGRAM FOR PROVISIONAL STUDENTS

	Units	
	1st Sem.	2d Sem.
First Year		
Physical education activities	3	3
English 41 and 42	3	3
Psychology 40 and Sociology 45	3	3
Social Science 40 and 45	3	3
Physical Science 40 and Biology 40	2	2
Speech Arts 3 and Health Education 21	2	2
Electives		
	16½	16½

COURSES OF INSTRUCTION**BIOLOGY****(G)41. Man and His Biological World (3) I, II**

General concepts of biology with emphasis on the biology of man in relation to modern life. Equivalent of Biology 1. Laboratory credit for general education may be obtained by following Biology 40 with Biology 4.

ENGLISH**40. English Fundamentals (2) I, II**

Elements of composition. Drill in grammar, usage, vocabulary building, reading skills, theme writing. Equivalent of English A. This course is required of students in the provisional program who fail the English examination. This course is a prerequisite for other English courses. May be counted toward graduation credit but may not be used for the general education requirement.

(G)41. English Composition (3) I, II

Composition stressing exposition. Reading from essays and articles. Prerequisites: Passing mark in English A qualifying examination or credit for English 40. Equivalent of English 1.

(G)42. Freshman Literature (3) I, II

Literature, mainly contemporary, is read for its ideas, especially in relation to human problems and their solution. Practice in writing is continued. Required of all Provisional students. Prerequisite: English 41. Equivalent of English 2.

PHYSICAL SCIENCE

(G)41. Man and His Physical World (3) I, II

A general education course concerning the nature of the scientific method and selected topics in physical science. Materials will be chosen from physics, chemistry, astronomy, and geology to provide an understanding of the relations of physical science to modern life. Equivalent of Physical Science 1.

PSYCHOLOGY

(G)41. Psychology and Life (3) I, II

An elementary survey of normal adult psychology, descriptive and organizational; the subjective and objective aspects of behavior. Furnishes basis for all other courses in psychology and is prerequisite therefor. Equivalent of Psychology 1.

SOCIAL SCIENCE

(G)40. Contemporary Problems (3) I, II

A survey of political, social and economic forces with background material for understanding human problems. Equivalent of Sociology 50.

(G)45. American Democracy (3) II

The democratic concept of self-government, its background and growth, with an emphasis on the American use of democratic principles. Includes a study of democracy in a relative and comparative approach to our modern world and other forms of government. Satisfies the U. S. Constitution requirement for graduation.

SOCIOLOGY

(G)45. Marriage and Family (3) I, II

Emphasizes preparation for successful marital adjustment by presenting materials that will help students learn to solve their own courtship, marriage, and family problems. A general education course in social science and also in family life education.

DIRECTORY

1950-1951

(Date after name indicates when appointed to faculty)

- HEPNER, WALTER R. (1935)-----President
A.B., M.A., Ed.D., University of Southern California.
- ACKLEY, JOHN W. (1947)-----Associate Professor of Speech Arts
A.B., University of Redlands; M.A., and two years of graduate study at the University of Southern California.
- ADAMS, EILEEN (Mrs. Bert) (1949)-----Junior Librarian
A.B., Willamette University; B.S., University of Denver.
- ADAMS, JOHN R. (1928)-----Professor of English
A.B., A.M., University of Michigan; Ph.D., University of Southern California.
- ALCORN, MARVIN D. (1941)-----Associate Professor of Education
A.B., Southwestern College; A.M., Teachers College, Columbia University; Ed.D., University of Southern California.
- ALLEN, WILLIAM H. (1950)-----Coordinator of Audio-Visual Services
Assistant Professor of Education
A.B., University of California at Los Angeles; M.A., Claremont Graduate School; Ed.D., University of California at Los Angeles.
- AMSDEN, GEORGIA C. (1925)-----Associate Professor of Secretarial Management
Diploma, Gregg College, Chicago; special secretarial training in various colleges.
- ANDERSON, GRAYDON K. (1949)-----Assistant Professor of Economics
A.B., Willamette University; two years of graduate study at University of Minnesota and University of Wisconsin.
- ANDREWS, JULIA G. (Mrs. F. S.) (1947)-----Assistant Professor of Art
A.B., Northwestern University; M.A., Columbia University; two and one-half years of graduate study at Teachers College, Columbia University.
- APPLE, JOE A. (1947)-----Professor of Education
A.B., Southeastern State College; M.A., University of Oklahoma; Ed.D., Teachers College, Columbia University.
- ATKINSON, DAVID F. (1949)-----Instructor in Accounting and Business Management
A.B., San Jose State College; M.A., Stanford University; graduate study at Redlands University. On military leave, January, 1951.
- BACON, GUINIVERE KOTTER (Mrs. George) (1928)-----Associate Professor of Education
B.S., Utah Agricultural College; M.A., Stanford University; one year of graduate study.
- BAIRD, OSCAR (1921)-----Professor of Physics
B.A., University of Wisconsin; M.A., University of California. Three years graduate study at University of Minnesota, University of California, University of Southern California and University of Oregon.
- BAKER, CLIFFORD H., JR. (1937)-----Assistant Professor of Spanish
A.B., San Diego State College; M.A., and four years of graduate study at the University of California.
- BALLANTINE, FRANCIS A. (1949)-----Assistant Professor of Education
A.B., Michigan State Normal College; A.M., Ph.D., University of Michigan.
- BARNHART, KENNETH EDWIN (1939)-----Professor of Sociology
A.B., Southwestern University; B.D., Southern Methodist University; Ph.D., University of Chicago.
- BECKER, CALLIE D. (Mrs. E. J.) (1946)-----Senior Librarian
A.B., Shorter College; B.S. in L.S., Emory University.
- BENTON, CARL W. (1948)-----Instructor in Physical Education
B.S., University of California at Los Angeles; M.S., University of Southern California. On Military Leave February, 1951.
- BIRCH, AILEEN J. (Mrs. C. E.) (1949)-----Instructor in Education
A.B., San Diego State College; graduate study at Claremont College.

- BLOCK, EDWARD A. (1946)-----Associate Professor of English
A.B., M.A., Ph.D., University of California.
- BRITTAN, MARTIN R. (1950)-----Instructor in Zoology
A.B., San Jose State College; Ph.D., Stanford University.
- BROADBENT, HARRY H. (1949)-----Assistant Professor of Physical Education
A.B., University of Oklahoma; M.S., University of Pennsylvania.
- BROOKS, BAYLOR (1931)-----Assistant Professor of Geology
B.A., Stanford University. Two years graduate study at University of Arizona and Stanford University.
- BROWN, ELIZABETH McPIKE (Mrs. L. P.) (1926)-----Professor of French
Ph.B., M.A., Ph.D., University of Chicago; one year graduate study at the Sorbonne, Paris, France; Certificat d'Etudes Françaises; Diplôme de l'Association Générale de Phonétique, Paris, France; Officier d'Académie.
- BROWN, EUGENE P. (1947)-----Associate Professor of Accounting
B.S., Southeastern Teachers College; B.A., M.A., University of Oklahoma. One year graduate study at University of Chicago, University of Southern California and University of Mexico.
- BROWN, LESLIE PARKER (1922)-----Professor of Spanish and French
B.A., Yale College; M.A., Harvard University; Ph.D., University of Southern California.
- BRUBECK, HOWARD R. (1950)-----Associate Professor of Music
B.A., San Francisco State College; M.A., Mills College.
- BRUNER, WILLIAM S. (1948)-----Assistant Professor of English
B.S., University of Virginia; M.A., Claremont College.
- BRYDEGAARD, MARGUERITE A. (Mrs. H.) (1936)-----Associate Professor of Education
A.B., San Diego State College; M.A. and graduate study at Claremont College.
- BURNETT, GAIL A. (1947)-----Assistant Professor of English
A.B., Randolph-Macon Woman's College; M.A., University of California at Los Angeles; Ph.D., University of Southern California.
- CAMERON, ROY ERNEST (1929)-----Professor of Economics
A.B., Ph.D., University of California.
- CAMPBELL, LOIS B. (1947)-----Assistant Professor of Education
A.B., University of California; M.A., Teachers College, Columbia University.
- CARLSON, HILDING B. (1948)-----Coordinator, Personnel Services; Professor of Psychology
Ph.B., M.S., Ph.D., University of Chicago.
- CARLSON, THORSTEN R. (1948)-----Principal of Campus Laboratory School; Associate Professor of Education
B.E., St. Cloud State Teachers College; M.A., Ph.D., University of Minnesota.
- CASSEL, RUSSELL N. (1949)-----Assistant Professor of Education
B.S., Millersville State Teachers College; M.Ed., Pennsylvania State College; Ed.D., University of Southern California. Resigned February, 1951.
- CAVE, MARY F. (1946)-----Assistant Professor of Physical Education
B.S., University of North Dakota. Graduate study at Bennington College and University of California at Los Angeles.
- CHADWICK, LEONARD E. (1949)-----Assistant Professor of Economics
B.S. and two and one-half years graduate study at the University of California.
- CHRISTY, LEO J. (1950)-----Assistant Professor of Music
B.S., Indiana University; B.S., M.S., University of Illinois.
- CHURCHILL, CHARLES W. (1949)-----Assistant Professor of Sociology
A.B., University of Newark; M.A., Ph.D., New York University.
- COMIN, NORITA (1949)-----Acting Assistant Professor of Home Economics
B.S., University of Minnesota.
- CORBETT, KATHERINE E. (1921)-----Associate Professor of Education
B.Ed., Michigan State Normal College; B.S., A.M., Teachers College, Columbia University.
- CORRIGAN, ROBERT F. (1947)-----Assistant Professor of Speech Arts
A.B., University of Michigan; M.A., University of Iowa.
- CROUCH, JAMES ENSIGN (1932)-----Professor of Zoology
B.S., M.S., Cornell University; Ph.D., University of Southern California.
- CUNKLE, ELIZABETH C. (Mrs. L.) (1948)-----Junior Librarian
A.B., University of California; B.S. in L.S., Columbia University. Graduate study University of California.
- CUNNINGHAM, CORNELIUS C. (1947)-----Professor of Speech Arts
A.B., Beloit College; M.A., Northwestern University; Ph.D., University of Iowa.
- CUTTER, DONALD C. (1950)-----Instructor in History
A.B., M.A., Ph.D., University of California.
- DEBRECHT, EUGENE F. (1949)-----Coordinator of Extension Services; Assistant Professor of Marketing
A.B., San Francisco State College; M.A., Stanford University. On military leave, April, 1951.
- DEPUTY, ERBY CHESTER (1931)-----Professor of Education
A.B., University of Denver; A.M., Ph.D., Columbia University.
- DICKHAUT, FLORENCE LILLIAN SMITH (Mrs. C. A.)-----Professor of English
A.B., Northwestern University; M.A., University of Chicago.
- DIRKS, JOHN H. (1947)-----Assistant Professor of Art
A.B., San Diego State College. Graduate study at University of Southern California.
- EAGLE, JOHN E. (1946)-----Associate Professor of Mathematics
B.S., Montana State College; M.A., Ed.D., Stanford University.
- EARNEST, SUE W. (Mrs. L. E.) (1947)-----Associate Professor of English
A.B., San Diego State College; M.A., Ph.D., University of Southern California.
- EELLS, KENNETH W. (1949)-----Associate Professor of Psychology
A.B., George Washington University; M.A., Ph.D., University of Chicago.
- EMERSON, ARTHUR T. (1949)-----Acting Assistant Professor of Mathematics
B.S., U. S. Naval Academy. One year graduate study at Naval War College.
- EVENSON, PATTEE E. (1949)-----Associate Professor of Music
B.S., University of Minnesota; M.M., University of Michigan; specialized training at Universities of Minnesota, Michigan, Southern California, and Eastman School of Music; private instruction in Paris, London and the United States.
- FELTON, JOHN R. (1948)-----Assistant Professor of Economics
B.A., M.A., and one and one-half years of graduate study at the University of California.
- FERRIS, HORACE G. (1949)-----Instructor in Physics
B.A., Pomona College; M.A., Ph.D., University of California. Resigned January 1951.
- FLYE, RICHARD C. (1950)-----Assistant Professor of Music
B.A., University of Virginia; M.A., and Professional Diploma, Columbia University.
- FOLEY, ROLLA (1950)-----Lecturer in Education
B.S., Eastern Illinois State College; M.M., University of Southern California.
- FRIEDRICH, KURT (1949)-----Assistant Professor of Education
A.B., Columbia College; M.A., Columbia University; Ed.D., Columbia Teachers College.
- GELBREICH, EDWARD W. (1947)-----Assistant Professor of Psychology
A.B., M.A., University of Cincinnati; three years graduate study at the University of Chicago.
- GENERALES, MINOS D. (1949)-----Assistant Professor of Political Science
Degree in Law and Political Science, including six years of graduate study at the University of Athens, University of Paris Law School, and Institute of International Studies.
- GERMANN, LULA (1926)-----Senior Librarian
B.S., State Teachers College, Hays, Kansas.
- GIBSON, ERNEST DANA (1947)-----Associate Professor of Business Education
Secretarial and Office Management
B.S., University of Minnesota; M.A., Colorado State College of Education; Ed.D., New York University.
- GJERDE, CLAYTON M. (1948)-----Assistant Professor of Education
A.B., Augsburg College; M.A., Ph.D., University of Minnesota.
- GLEASON, JOHN M. (1930)-----Associate Professor of Mathematics
A.B., University of California at Los Angeles; M.A., University of California. Two years graduate study at University of Southern California, University of California at Los Angeles and Claremont Colleges.
- GRESS, IRVIN S. (1946)-----Assistant Professor of Psychology
A.B., George Washington University; Ed.M., University of Pittsburgh. Two years graduate study at Columbia University, Pennsylvania State College and University of Pittsburgh.

- GROSS, GEORGE C. (1949)-----Acting Instructor in English
A.B., San Diego State College; one year graduate study at San Diego State College and University of Southern California.
- GULICK, SIDNEY L. JR. (1945)-----Professor of English
B.A., M.A., Oberlin College; Ph.D., Yale University.
- HAMMACK, ISABELLA STEWART (1936)-----Associate Professor of Education
A.B., M.A., and one year graduate study at the University of California.
- HARCLEROAD, FRED F. JR. (1946)-----Associate Professor of Education
A.B., M.A., Colorado State College of Education; Ph.D., Stanford University.
- HARRINGTON, AWONA B. (1949)-----Junior Librarian
A.B. and one year graduate study at San Diego State College; M.S. in L.S., University of Southern California.
- HARRINGTON, NEIL J. (1948)-----Instructor in Chemistry
B.S., Monmouth College; one year of graduate study at DePaul University and Northwestern University. On military leave, October, 1950.
- HARRIS, VINCENT C. (1950)-----Assistant Professor of Mathematics
B.A., M.A., Ph.D., Northwestern University.
- HARVEY, ALBERT R. (1949)-----Assistant Professor of Mathematics
B.S., Bates College; A.M., Ph.D., Harvard University.
- HARVEY, DOROTHY R. (Mrs. F. A.) (1924)-----Assistant Professor of Botany
A.B., San Diego State College; M.A., University of Southern California. One year graduate study at University of Southern California and University of Chicago.
- HARWOOD, ROBERT DANIEL (1928)-----Professor of Zoology
B.A., Pomona College; Ph.D., Cornell University.
- HASKELL, HARRIET (1940, except 1943-45)-----Assistant Professor of English
A.B., Mills College; M.A., Bryn Mawr College; Ph.D., University of Wisconsin.
- HAVER, CLARE L. (Mrs. R.) (1949)-----Instructor in Education
A.B., Western Washington College of Education.
- HAYNES, GERALDINE K. (Mrs. L.) (1931)-----Senior Librarian
A.B., Indiana Central College; B.S. in L.S., University of Illinois.
- HOUSEMAN, RICHARD A. (1948)-----Associate Professor of Education
B.S., Central Michigan College of Education; M.A., Ed.D., Teachers College, Columbia University.
- HOUSER, LOWELL (1938)-----Associate Professor of Art
Diploma, Chicago Art Institute. Five years' special study in Mexico, Yucatan, Haiti, and New York City.
- HUGHES, DONALD H. (1950)-----Assistant Professor of Education
B.A., Hastings College; M.Ed. and one year of graduate work at the University of Colorado.
- HUNTER, JAMES J., JR. (1946)-----Executive Dean; Professor of Education
A.B., Cornell University; M.S., Ph.D., Syracuse University.
- IMBROCK, PAUL H. (1950)-----Assistant Professor of Education
B.S., Bowling Green State University; M.A., Ed.D., Teachers College, Columbia University.
- ISENSE, ROBERT W. (1948)-----Assistant Professor of Chemistry
A.B., Reed College; M.A., Ph.D., Oregon State College.
- JACKSON, EVERETT GEE (1930)-----Professor of Art
A.B., San Diego State College; M.A., University of Southern California. Three years special study in Mexico.
- JACOBSEN, HELEN M. (1946)-----Senior Librarian
A.B., San Diego State College; B.S. in L.S., University of California.
- JOHNSON, FRANK LOUIS (1939)-----Associate Professor of English
A.B., M.A., University of Minnesota; Ph.D., University of Wisconsin.
- JOHNSON, TESSA M. (1950)-----Assistant Professor of Physical Education
A.B., University of California; M.S., University of Southern California.
- JONES, KENNETH K., JR. (1948)-----Assistant Professor of Speech Arts
B.S., Northwestern University; M.A., Stanford University.
- JOSEPH, LIONEL (1947)-----Associate Professor of Chemistry
B.S., St. Louis University; M.S., Ph.D., Washington University.
- KALBFELL, DAVID C. (1948)-----Assistant Professor of Physics
A.B., University of California at Los Angeles; M.A., Ph.D., University of California. Registered Electrical Engineer.
- KAPLAN, OSCAR J. (1946)-----Associate Professor of Psychology
B.A., M.A., University of California at Los Angeles; Ph.D., University of California.
- KASCH, FREDERICK W. (1948)-----Assistant Professor of Physical Education
B.S., M.S., University of Illinois; graduate study at New York University and University of Illinois.
- KEENEY, JOSEPH SUMNER (1933)-----Professor of English
A.B., Yale University; M.A., Ph.D., University of California.
- KENNEDY, CHESTER B. (1937)-----Associate Professor of English
A.B., Chico State College; M.A., Ph.D., Stanford University.
- KIDWELL, WILLIAM M. (1949)-----Placement Officer; Assistant Professor of Psychology
B.A., M.S., University of Oregon; Ed.D., Stanford University.
- KITZINGER, ANGELA M. (1945)-----Associate Professor of Health Education
A.B., Barnard College, Columbia; M.A., Teachers College, Columbia University. Additional work at Central School of Hygiene and Physical Education and at Folk High School, Ollerup, Denmark.
- KLAPP, ORRIN E. (1948)-----Assistant Professor of Sociology
M.A., Ph.D., University of Chicago.
- KOESTER, GEORGE A. (1950)-----Assistant Professor of Education
B.S., Midland College; M.A., University of Colorado. Two years of graduate study at University of Colorado and University of Minnesota.
- LAMDEN, CHARLES W. (1946)-----Dean of Educational Services and Summer Sessions; Professor of Accounting and Business Management
A.B., M.A., University of California at Los Angeles; Ph.D., University of California. Certified Public Accountant.
- LAURITSEN, WILLIAM H. (1947)-----Professor of Health Education
A.B., M.A., University of Nebraska; Ph.D., Ohio State University.
- LEBARRON, EVANGELINE O. (Mrs. H. E.) (1946, except 1948-49)-----Assistant Professor of Secretarial Management
B.A., B.S., University of Iowa; B.A., Sioux Falls College; one and one-half years graduate study at Claremont Colleges, University of Southern California, University of Minnesota and University of Hawaii.
- LEIB, JULIUS (1938)-----Associate Professor of Music
Three years special study at Leipzig Conservatory.
- LEIFFER, DONALD B. (1948)-----Professor of Political Science
A.B., University of California at Los Angeles; M.A., Ph.D., Harvard University.
- LEMME, MAURICE M. (1948)-----Associate Professor of Mathematics
A.B., Oakland College; M.A., Indiana University; Ph.D., Purdue University.
- LEONARD, CHARLES B. (1921)-----Professor of History
A.B., M.A., Ph.D., University of California.
- LESLEY, LEWIS B. (1924)-----Professor of History
A.B., Stanford University; M.A., Ph.D., University of California.
- LINLEY, JAMES M. (1945)-----Assistant Professor of Education
Ph.B., University of Chicago; M.S., Ph.D., University of Southern California.
- LOCKMAN, EVELYN (1948)-----Assistant Professor of Physical Education
B.A., Vanderbilt University; M.A., George Peabody College; graduate study at New York University, and University of Wisconsin; three years special study in dance.
- LUCE, LAWRENCE W. (1949)-----Assistant Professor of Industrial Arts
B.S., Illinois Wesleyan University; M.S., Stout Institute.
- LUCIO, WILLIAM H. (1939)-----Coordinator of Elementary Education
A.B., M.A., Ph.D., University of California. Professor of Education.
- MADDEN, RICHARD (1939)-----Executive Dean; Professor of Education
A.B., Nebraska (Peru) State Teachers College; M.A., Ph.D., Columbia University.
- MARCHAND, ERNEST L. (1946)-----Professor of English
A.B., M.A., University of Washington; Ph.D., University of Wisconsin.
- MCBLAIR, WILLIAM (1948)-----Assistant Professor of Zoology
A.B., San Diego State College; two years of graduate work at the University of California.
- MCCLINTIC, JOSEPH O. (1946)-----Professor of Economics
A.B., Central College; A.M., University of Missouri; Ph.D., University of Wisconsin.

- McCULLOM, IVAN N. (1946) ----- Dean of Educational Services and Summer Sessions
Professor of Psychology
A.B., Central Washington College of Education; B.S., M.S., University of Oregon;
Ed.D., Colorado State College of Education.
- * McGAUGHEY, JANET M. (Mrs. J. R.) (1947) ----- Assistant Professor of Music
B.M., M.M., University of Michigan.
- McLONEY, WIRT L. (1949) ----- Instructor in Physical Science
A.B., Western State College; M.A., Colorado State College of Education.
- MENDENHALL, MARY (1939) ----- Dean of Women; Professor of Philosophy
B.A., University of Colorado; M.A., University of Southern California; Ph.D.,
Yale University.
- MERRILL, JOHN E. (1946) ----- Assistant Professor of History
A.B., Stanford University; A.M., Harvard University. Two years graduate study
at Stanford University.
- MERZBACHER, CLAUDE FELL (1947) ----- Assistant Professor of Physical Science
B.S., University of Pennsylvania; M.A., Claremont Graduate School. Licensed
Professional Chemical Engineer.
- MESSIER, LEONARD N. (1946) ----- Assistant Professor of French
A.B., San Diego State College; M.A., Ph.D., University of California.
- MILLER, DOROTHY A. (1947) ----- Instructor in Chemistry
B.S., A.B., Southeast Missouri State College; M.S., State University of Iowa.
- MILNE, DAVID S. (1946) ----- Associate Professor of Sociology
A.B., University of California at Los Angeles; M.A., University of Southern Cali-
fornia; Ph.D., University of Chicago.
- MOE, CHESNEY R. (1931) ----- Professor of Physics
A.B., M.A., Stanford University; Ph.D., University of Southern California. Regis-
tered Mechanical Engineer. On military leave, April, 1951.
- MOORE, EDWENA B. (Mrs. E. J.) (1947) ----- Assistant Professor of Education
A.B., San Diego State College; A.M., Claremont Colleges.
- MORGAN, CHARLES (1949) ----- Instructor in Engineering
M.E., Stevens Institute of Technology; M.S., University of California. Registered
Professional Mechanical Engineer.
- MOSEN, ARTHUR W. (1950) ----- Instructor in Chemistry
B.S., and one year graduate study at Oregon State College.
- MUCHMORE, DON M. (1950) ----- Lecturer in Political Science
A.B., Occidental College; one year graduate study at the University of California
at Los Angeles.
- MYERS, MABEL A. (1946) ----- Associate Professor of Bacteriology
A.B., M.A., Pomona College; Ph.D., Cornell University.
- * NASATIR, ABRAHAM PHINEAS (1928) ----- Professor of History
A.B., M.A., Ph.D., University of California.
- NICHOLS, AMBROSE R., JR. (1939) ----- Professor of Chemistry
B.S., University of California; Ph.D., University of Wisconsin.
- NIEBAUER, RUBY R. (1949) ----- Assistant Professor of Education
B.S., M.S., University of Wisconsin.
- NORLAND, CALVERT E. (1947) ----- Assistant Professor of Zoology
A.B., Pomona College; M.S., University of California. Graduate study at Claremont
Colleges.
- * OLSON, ANDREW C., JR. (1946) ----- Assistant Professor of Biology
A.B., San Diego State College; M.S., University of Idaho.
- OSBORN, CLARENCE G. (1937) ----- Professor of Political Science
A.B., A.M., Ph.D., Stanford University.
- PEIFFER, HERBERT C., JR. (1937) ----- Dean of Students
Professor of Psychology and Guidance
A.B., University of California at Los Angeles; M.A., Ph.D., Stanford University.
- PEREZ, ROSE MARIE (1948) ----- Junior Librarian
A.B., San Diego State College; B.S. in L.S., University of Southern California;
M.A., University of Chicago.

* On leave.

- PERRY, FAY V. (Mrs. J. M.) (1936) ----- Coordinator of Guidance for Provisional
Students; Professor of Sociology
A.B., San Diego State College; M.A., Ed.D., University of Southern California.
- PETERSON, CHARLES E. (1921) ----- Dean of Men; Professor of Physical Education
A.B., San Diego State College; M.A., Claremont Colleges.
- PFaff, PAUL LEWIS (1931) ----- Associate Professor of Speech Arts
A.B., Stanford University; M.A. and two years graduate study at the University
of Southern California.
- PHELPS, LOIS HIGGS (Mrs. P.) (1950) ----- Junior Librarian
A.B., San Jose State College.
- PHILLIPS, GEORGE L. (1947) ----- Assistant Professor of English
A.B., Dartmouth College; M.A., Harvard University; Ph.D., Boston University.
- PHILLIPS, KENNETH (1950) ----- Associate Professor of Industrial Arts
B.S., State College for Teachers (Buffalo); M.A., Ph.D., Ohio State University.
- PHILLIPS, WALTER THOMAS (1927) ----- Professor of Spanish
A.B., University of Washington; M.A., Stanford University; Ph.D., University of
Southern California.
- POST, LAUREN CHESTER (1937) ----- Professor of Geography
A.B., M.A., Ph.D., University of California.
- POVENMIRE, E. KINGSLEY (1946) ----- Associate Professor of Speech Arts
B.S., Ohio State University; M.F.A., Yale University.
- PRESTON, DUDLEY A. (1948) ----- Assistant Professor of Botany
B.S., Washington State College; M.S., Ph.D., University of Minnesota.
- PROUTY, HELEN L. (1950) ----- Assistant Professor of Education
B.S., University of Nebraska; M.A., Ph.D., University of California.
- RABE, WILLIAM F. (1950) ----- Assistant Professor of Marketing
B.S., M.A., University of Nebraska; Ed.D., Stanford University.
- RAGEN, KATHERINE M. (1947) ----- Associate Professor of History
A.B., Penn College; M.A., Bryn Mawr College; Ph.D., University of Wisconsin.
- RHUE, SARA A. (1950) ----- Assistant Professor of Education
A.B., Arizona State College; M.A., Ph.D., State University of Iowa.
- RICHARDSON, M. BRUCE (1948) ----- Associate Professor of Engineering
A.B., Aeronautical Engineer, Stanford University. Registered Mechanical En-
gineer.
- RICHARDSON, ROBERT W. (1939, except 1942-48) ----- Professor of Geography
A.B., Ph.D., University of California.
- RIDOUT, LIONEL U. (1946, except 1949-50) ----- Instructor in History
A.B., San Diego State College; M.A., and two years graduate study at the Uni-
versity of California.
- RIGGS, LESTER G. (1950) ----- Assistant Professor of Mathematics
B.S., University of Illinois; M.S., Syracuse University; Ph.D., Northwestern
University.
- ROBERTS, ELLIS E. (1949) ----- Instructor in Geology
B.S., Michigan College of Mining and Technology; M.S., California Institute of
Technology; Ph.D., Stanford University.
- ROBINSON, DUDLEY HUGH (1928) ----- Professor of Chemistry
B.S., Louisiana State University; M.S., State University of Iowa; Ph.D., Uni-
versity of Southern California. Registered Chemical Engineer.
- * ROBINSON, EVELYN L. (1946) ----- Assistant Professor of Physical Education
B.S., Mary Washington College of the University of Virginia; M.S., University of
Southern California.
- ROGERS, SPENCER LEE (1930) ----- Professor of Anthropology
A.B., San Diego State College; M.A., Claremont Colleges; Ph.D., University of
Southern California.
- ROHFLEISCH, KRAMER J. (1947) ----- Professor of History
A.B., M.A., Ph.D., University of California.
- ROWE, ROBERT D. (1946) ----- Professor of Chemistry
A.B., Ph.D., Stanford University.
- RUJA, HARRY (1947) ----- Assistant Professor of Philosophy and Psychology
A.B., University of California at Los Angeles; M.A., University of Chicago;
Ph.D., Princeton University; one year postdoctoral study at the University of
California at Los Angeles.

* On leave.

- RUOCCO, ILSE H. (Mrs. L.) (1946)-----Associate Professor of Art
B.E., University of California at Los Angeles; M.A., Columbia University.
- RYAN, FREDERICK L. (1946)-----Professor of Economics
B.S., Tufts College; Ph.D., University of California.
- SAMPLES, HOWELL GORDON, JR. (1950)-----Junior Librarian
A.B., University of Georgia; B.S. in L.S., George Peabody College for Teachers.
- SCHALLES, FRANCES IRENE (1950)-----Junior Librarian
A.B., San Diego State College. One year graduate study.
- SCHEVILL, KARL E. (1949)-----Instructor in Spanish
A.B., Harvard University; M.A., Ph.D., University of California.
- SCHRUPP, MANFRED H. (1948)-----Assistant Professor of Education
B.S., M.Ed., Ph.D., University of Minnesota.
- SCHUNERT, JIM R. (1948)-----Coordinator of Secondary Education;
Associate Professor of Education
B.S., M.A., Ph.D., University of Minnesota.
- * SCHUTTE, WILLIAM H. (1947)-----Assistant Professor of Physical Education
B.S., University of Idaho; M.S., University of Southern California.
- SCHWOB, MARION L. (Mrs. W. E.) (1934)-----Associate Professor of Physical Education
B.A., State University of Iowa; M.S., University of Southern California.
- SCOTT, FRANK L. (1947)-----Assistant Professor of Physical Education
A.B., Grinnell College; M.A., University of Michigan; one year additional study at the University of Michigan.
- SELLMAN, HUNTON D. (1946)-----Professor of Speech Arts
B.S., Purdue University; M.S., University of Arizona. Three and one-half years graduate study at University of California, University of North Carolina and Yale University.
- SHANNON, FLORENCE S. (Mrs. E. L.) (1933)-----Assistant Professor of Physical Education
A.B., University of California; M.A., University of Southern California.
- SHEAFFER, HELEN M. (1950)-----Instructor in Education
A.B., M.A., Colorado State College of Education.
- SHELAR, EUGENE (1949)-----Assistant Professor of Zoology
B.S., State Teachers College at Slippery Rock, Pennsylvania; M.S., Ph.D., Cornell University.
- SHIELDS, ALLEN E. (1949)-----Assistant Professor of Philosophy
A.B., University of California; M.A., Ph.D., University of Southern California.
- SHIELDS, KARENA P. (1948)-----Assistant Professor of English
A.B., and one year of graduate study at the University of Southern California.
- SHIRLEY, DAVID E. (1950)-----Instructor in Economics
A.B., Princeton University; M.A., University of Utah; two years graduate study at Stanford University.
- SHOUSE, CLAUDE F. (1946)-----Assistant Professor of English
A.B., Georgetown College; M.A., University of Kentucky; one and one-half years graduate study at University of Pittsburgh and University of Southern California.
- SHUTTS, WILLIAM H. (1949)-----Assistant Professor of Engineering
B.S., M.S., University of Colorado.
- SILVERNAIL, CHESTER J. (1949)-----Assistant Professor of Astronomy
A.B., San Diego State College; M.A., Claremont Graduate School.
- SMART, KEITH L. (1949)-----Instructor in Bacteriology
A.B., M.A., University of California.
- SMITH, CHARLES ROBERTS (1933)-----Assistant Professor of Physical Education
A.B., San Diego State College; M.S., University of Southern California.
- SMITH, CLIFFORD EDWARD (1937)-----Professor of Astronomy
A.B., Carleton College; M.A., Swarthmore College; Ph.D., University of California.
- SMITH, DEANE FRANKLIN (1939)-----Associate Professor of Music
B.M., M.M., Northwestern University.
- SMITH, LOUIS E., JR. (1946)-----Associate Professor of Physics
A.B., San Diego State College; Ph.D., University of Washington.

* On leave Semester II

- SORENSEN, GEORGE N. (1946)-----Associate Professor of Art
A.B., San Diego State College; M.A., University of Southern California; graduate study at University of California and University of Minnesota.
- SPANGLER, JOHN A. (1946)-----Associate Professor of Chemistry
A.B., Ph.D., West Virginia University.
- SPORTSMAN, CHARLES C. (1947)-----Associate Professor of Physical Education
B.S., North Texas State College; M.S., and one year additional study at the University of Southern California.
- SPRINGSTON, CHRISTINE (1930)-----Associate Professor of Music
B.A., B.M., University of Redlands; M.A., University of Washington. Diplôme d'exécution, Conservatoire Americain, Fontainebleau, France.
- STEINMETZ, HARRY V. (1930)-----Associate Professor of Psychology
A.B., University of California; M.A., University of Southern California; Ph.D., Purdue University.
- STONE, HAMILTON L. (1947)-----Assistant Professor of Engineering
B.S., U. S. Naval Academy. Two and one-half years of graduate study. Registered Mechanical Engineer.
- STONE, JOHN PAUL (1930)-----Head Librarian; Professor of Library Science
B.S., Northwest Missouri State Teachers College; B.S., M.S., University of Illinois; Ph.D., University of Chicago.
- STORM, ALVENA (Mrs. Eugene) (1926)-----Associate Professor of Geography
A.B., M.A., University of California.
- STOUGH, MORROW F. (1950)-----Assistant Professor of Education
A.B., Wittenberg College; M.A., University of Pennsylvania; Ph.D., University of California.
- STOVALL, HARRIET B. (Mrs. S. L.) (1925)-----Senior Librarian
Graduate, Berkshire Athenaeum, Massachusetts.
- STRAUB, LURA LYNN (1948)-----Assistant Professor of Secretarial Management
A.B., Jamestown College; M.C.S., Indiana University; graduate study at University of Wyoming and University of Denver.
- SUTTON, JOSEPHINE M. (1947)-----Junior Librarian
A.B., University of Oklahoma.
- SWIGGETT, JEAN D. (1946)-----Associate Professor of Art
A.B., San Diego State College; M.F.A., University of Southern California; graduate study at Claremont Colleges.
- TALBOY, RUTH A. (1947)-----Assistant Professor of Home Economics
B.S., Iowa State College; M.A., Stanford University; one year of graduate study at Universities of Minnesota, Iowa, and California.
- TAYLOR, JAMES W. (1950)-----Instructor in Geography
A.B., Northwestern State College; M.A., Louisiana State University.
- TAYLOR, KENNETH M. (1949)-----Assistant Professor of Zoology
A.B., M.A., Ph.D., University of California.
- TAYLOR, MERREL A. (1946)-----Assistant Professor of Zoology
A.B., Indiana University; B.S., M.S., University of Michigan.
- TERHUNE, JOHN A. (1946)-----Lecturer in Physics
B.S., U. S. Naval Academy; M.S., Harvard University.
- TERRY, WILLIAM L. (1946)-----Lecturer in Physical Education
A.B., Western Kentucky Teachers College; M.S., Indiana University; two years of additional study at University of Kentucky, University of Illinois, and Columbia University.
- THEOBALD, JOHN R. (1946)-----Professor of English
B.A., St. Catherine's College, Oxford University; M.A., Mansfield College, Oxford University; Ph.D., University of Iowa.
- TIDWELL, JAMES N. (1947)-----Professor of English
A.B., Simmons University; M.A., University of Oklahoma; Ph.D., Ohio State University.
- TOLLEFSEN, DOROTHY J. (1946)-----Assistant Professor of Physical Education
A.B., M.A., University of California.
- TORBERT, FRANCES B. (Mrs. H.) (1937)-----Associate Professor of Marketing
A.B., Stanford University; M.A., University of Southern California; one year graduate study at Stanford University.

ASSISTANT INSTRUCTORS

- TRAIL, MABEL COY (1935)-----Professor of English
A.B., Parsons College; M.A., State University of Iowa; Ph.D., University of Southern California.
- TREAT, WOLCOTT C. (1950)-----Assistant Professor of Psychology
A.B., Harvard College; A.M., Harvard University; Ph.D., Stanford University.
- TUCKER, GORDON H. (1945)-----Professor of Zoology
B.S., M.S., University of South Carolina; Ph.D., University of North Carolina.
- TURNER, MERLE B. (1950)-----Assistant Professor of Psychology
A.B., Willamette University; M.A., Stanford University; Ph.D., University of Colorado.
- VAN CLEAVE, MAURICE (1948)-----Lecturer in Accounting
B.S., U. S. Naval Academy; one year graduate study at U. S. Naval War College. Public Accountant.
- VAN ROEKEL, BYRON H. (1950)-----Assistant Professor of Education
A.B., Central College; M.A., Ph.D., University of Iowa
- VOEKS, VIRGINIA W. (1949)-----Assistant Professor of Psychology
B.S., M.S., University of Washington; Ph.D., Yale University.
- WALBA, HAROLD (1949)-----Instructor in Chemistry
B.S., Massachusetts State College; Ph.D., University of California.
- WALKER, DONALD E. (1949)-----Instructor in Sociology
A.B., M.Th., University of Southern California; two years graduate study at Stanford University.
- WALKER, HILDE KRAMER (Mrs.) (1931)-----Assistant Professor of German
A.B., M.A., Northwestern University.
- WALLING, CURTIS R. (1931)-----Associate Professor of Engineering
A.B., E.E., Stanford University; one and one-half years of graduate study at Stanford University and the University of Southern California. Registered Electrical Engineer.
- WAND, BARBARA A. (1950)-----Instructor in Art
A.B., San Diego State College; graduate study at University of California at Los Angeles.
- WATENPAUGH, FRANK M. (1935)-----Associate Professor of Accounting
A.B., Pomona College; M.A., University of Southern California. Two years graduate study at University of Southern California and University of Oregon. Public Accountant.
- WATSON, DONALD R. (1939)-----Dean of Instruction; Professor of Physical Science
A.B., B.S., A.M., Ed.D., University of Southern California.
- WEBB, CHARLES R., JR. (1949)-----Assistant Professor of History
A.B., M.A., University of California; M.A., Ph.D., Harvard University.
- WEST, EDNA A. (1948)-----Assistant Professor of Secretarial Management
B.A., Santa Barbara State College; M.A., and graduate study at Claremont Colleges, Columbia University, and Oregon State College.
- WHITE, ALFRED E. (1946)-----Admissions Officer; Coordinator of Educational Research; Associate Professor of Guidance
A.B., M.A., University of California; Ed.D., Stanford University.
- WILCOX, ROBERT F. (1950)-----Assistant Professor of Political Science
A.B., M.A., Stanford University; M.A., Columbia University; Ph.D., Stanford University.
- WIMER, ARTHUR C. (1950)-----Lecturer in Journalism
B.Lit., Columbia University; M.A., University of Iowa.
- WOLF, ERNEST M. (1947)-----Assistant Professor of German and Spanish
Study at the Universities of Berlin, Paris, Muenster, Cambridge and Bonn. Ph.D., University of Bonn.
- WRIGHT, WILLIAM H. (1921)-----Professor of Accounting and Business Management
B.S., M.A., University of California; Ph.D., University of Southern California. Public Accountant.
- ZIEGENFUSS, GEORGE (1948)-----Assistant Professor of Physical Education
B.A., University of Washington; M.A., Ed.D., Teachers College, Columbia University.

- BARHAM, ERIC G., JR.-----Assistant in Zoology
A.B., San Diego State College.
- BURKHARDT, FREDERIC S.-----Assistant in Education
A.B., Dartmouth College.
- BYRNE, CHARLES T.-----Assistant in Journalism
A.B., San Diego State College.
- CULVER, HAROLD W.-----Assistant in Education
B.S., University of Alaska.
- HARVEY, HARRY T.-----Assistant in Zoology
A.B., San Diego State College.
- HAYDEN, BERNARR F.-----Assistant in Education
A.B., San Diego State College.
- HENNE, EARL A.-----Assistant in Education
A.B., Colorado College.
- KING, ROBERT E.-----Assistant in Psychology
A.B., San Diego State College.
- OSTRAND, GUNNAR.-----Assistant in Education
A.B., San Diego State College.
- SHREWSBURY, MARVIN M.-----Assistant in Zoology
M.A., University of California.
- TISDALE, WILLIAM K.-----Assistant in Bacteriology
A.B., San Diego State College.
- WILTON, JOHN W.-----Assistant in Zoology
A.B., San Diego State College.
- WYLLIE, JOHN G.-----Assistant in Chemistry
A.B., San Diego State College.

LECTURERS

- BACK, GILBERT (1950)-----Lecturer in Music
Professional musician.
- BLAKE, DEAN (1927)-----Lecturer in Meteorology
Meteorologist, U. S. Weather Bureau.
- BURGERT, ROBERT H. (1948)-----Lecturer in Education
San Diego City Schools.
- DE JULIEN, LORENZ F. (1949)-----Lecturer in Marketing
Self employed.
- GELCHER, JOSEPH (1946)-----Lecturer in Insurance
Insurance underwriter.
- GOODWIN, JOHN H. (1947)-----Lecturer in Insurance
Insurance broker.
- GRECO, ANTHONY (1950)-----Lecturer in Physical Education
Self employed.
- HARBERT, SELMA C. (1950)-----Lecturer in Speech Arts
M.A., Stanford University.
- HOSS, WENDELL (1950)-----Lecturer in Music
Professional musician.
- HOWARD, FRANCIS J. (1950)-----Lecturer in Physics
Scripps Institution of Oceanography.
- HUFF, GEORGE D., M.D. (1939)-----Lecturer in Health and Hygiene
Practicing physician.
- KARPINSKI, CHARLES E. (1949)-----Lecturer in Commercial Law
Attorney at Law.
- KRUSE, PAUL J. (1949)-----Lecturer in Education
Ph.D., Columbia University.
- LINDSLEY, BYRON F. (1947)-----Lecturer in Commercial Law
Attorney at Law.

LLOYD, STANLEY J., M.D. (1950)	Lecturer in Bacteriology Practicing physician.
McLEES, BERTRAM (1946)	Lecturer in Commercial Law Deputy District Attorney.
MULLENIX, CARLOS W. (1950)	Lecturer in Music Professional musician.
SARKISIAN, SARKIS S., M.D. (1949)	Lecturer in Bacteriology Practicing physician.
SLOBIN, HERMON L. (1949)	Lecturer in Mathematics Ph.D., Clark University. Deceased February, 1951.
STANFORTH, ROBERT O. (1948)	Lecturer in Commercial Law Swing & Scharnikow, Attorneys.
STEINBERG, WILLIAM (1949)	Lecturer in Education San Diego City Schools.
SYLVESTER, HELEN K.	Lecturer in Education Principal, Euclid School. A.B., San Diego State College.
TROGE, RALPH F.	Lecturer in Education Principal, Woodrow Wilson Junior High School. Ed.D., University of Oregon.
WESSEL, MARK (1950)	Lecturer in Music Professional musician.
WILSON, JAMES F. (1951)	Lecturer in Education San Diego City Schools.

RETIRED FACULTY

(Date following name indicates date of retirement)

HARDY, EDWARD L. (1935)	President Emeritus
AULT, JESSE W. (1948)	Dean of Education; Professor of Education
BELL, GERTRUDE S. (1938)	Professor of Psychology
HAMMACK, EDITH CHASTAIN (1950)	Associate Professor of Education
JOHNSON, MYRTLE (1946)	Professor of Biology
KELLEY, GENEVIEVE (1949)	Senior Librarian
LIVINGSTON, GEORGE R. (1949)	Professor of Mathematics
MOLITOR, VINNIE CLARK (1938)	Associate Professor of Geography
SKILLING, W. T. (1936)	Professor of Astronomy
SMITH, LEILA DEBORAH (1948)	Professor of Music
TANNER, JESSIE R. (1936)	Associate Professor of Physical Education

MEDICAL STAFF*

HAROLD G. CARTER, M.D.	Physician
CARL H. ENGLER, M.D. †	Physician
O. S. HARBAUGH, M.D.	Physician
ROBERT B. PAPPENFORT, M.D.	Physician
JAMES R. PHALEN, M.D.	Physician
ERNEST W. SHAW, M.D.	Physician
FRANCES M. WHITE, M.D.	Physician
MARILYNN M. FENWICK, P.H.N.	Nurse

* All physicians serving part-time.
† On leave.

ADMINISTRATIVE OFFICE STAFF

KATHLEEN B. ANDERSON	Secretary, Social Sciences Division
LETHA BALDWIN	Intermediate Stenographer-Clerk, Library
JANE C. BORDNER	Secretary, Supervisor of Buildings and Grounds
DEON BROKAW	Secretary, Extension Services
ANNE T. BROWN	Evaluations Secretary
NATALIE R. CAMERLYNCK	Junior Typist-Clerk, Registrar's Office
EVADNE DEARDORF	Assistant Registrar
SUE W. DYCK	Mimeograph Office
GERTRUDE K. DICKINSON	Bookkeeper, Grade 2, Business Office
HOPE S. FIRESTONE, B.S.	Secretary, Evaluations for Teaching Credentials
ANNIE FONG	Secretary, Health, Physical Education and Recreation Division

BERKELEY FREEMAN	Assistant Secretary, Personnel Services
GENEVIEVE M. HAMBLIN	Secretary, Personnel Services
ELIZABETH M. HARRISON	Book Repair Clerk, Library
LOUELLA P. HECK	Secretary, Music Department
CECELIA HERZOG	Clerical Assistant, Women's Physical Education Department
GEORGIA HOCHSTETLER	Secretary, Campus Laboratory School
DOROTHY W. HOEFER, A.B.	Secretary to Dean of Students
PERSIS HURLBUT	Secretary, Audio-Visual Services
IRENE JANECK, A.B.	Secretary, Physical Sciences Division
CONSTANCE KING, B.S.	Secretary to Dean of Women
FAY LANDWEER	Secretary to Dean of Educational Services and Summer Sessions
MILDRED H. LeCOMPTE	Secretary to Librarian
DOROTHY LIVENGOD	Secretary, Life Sciences Division
MARJORIE L. LUTZ	Secretary, Education Division
JOAN M. MARINER	Junior Typist-Clerk, Library
JEANNE McCOMMS	Assistant Secretary, Placement Office
JEAN McGHEE, B.S.	Secretary, Teacher Placement
WINNIFRED MIDDLETON	Junior Account Clerk, Business Office
MIRIAM E. MOORE, A.B.	Secretary to Dean of Instruction
HESTER NEWMAN	Secretary, Part-time Employment
DONALD G. PARKER	Accounting Officer, Grade 2, Business Office
MARION L. PARKER, M.A.	Statistician
MARY B. PEEL	Secretary, Education Division
HELEN M. PERRY	Receptionist, Registrar's Office
EDITH E. PETERSON	Junior Typist-Clerk, Library
KATHERINE PYLE, A.B.	Secretary, Veterans Office
JUNE V. ROBERTS, A.B.	Intermediate Stenographer-Clerk, Business Office
GRACE ROGERS	Junior Account Clerk, Business Office
FLORENCE B. SCHNEIDER	Telephone Operator
GRACE J. SFICOS, A.B.	Recorder
ORLETHA J. SLOBE	Intermediate Stenographer-Clerk, Registrar's Office
DOROTHY P. SLOUGH	Placement Secretary
EVELYN J. STEEL	Secretary to Executive Dean
JUANITA L. STEPHENSON	Admissions Secretary
EMMA M. STRUTHERS	Secretary to President
TUNIS F. TUCKER	Intermediate Stock Clerk, Business Office
BETTY L. ULICS	Intermediate Typist-Clerk, Business Office
MARJORIE WELCOME, A.B.	Mimeograph Office
LOLA M. WENGER, A.B.	Secretary, Education Division
FLORENCE E. WIGGINS	Secretary to Dean of Men
CAROLYN V. WILLIAMS	Intermediate Stenographer-Clerk, Business Office
DORIS WILTON	Intermediate Stenographer-Clerk, Business Office
ELEANOR C. WINKLEY	Junior Typist-Clerk, Library
RACHEL E. WRIGHT	Secretary, Art Department

MAINTENANCE STAFF

CAREY D. FOLGER	Supervisor of Buildings and Grounds
TIMOTHY HALLAHAN, A.B. (Military leave since April 1951)	Supervisor of Buildings and Grounds
WILLIAM DUNS	Head Gardener
FLOYD A. KIRKPATRICK	Head Custodian
MYRLYN SOUTHWORTH	Engineer

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CHAIRMEN OF DIVISIONS

AIR SCIENCE AND TACTICS	Lt. Col. Charles E. Mosse
BUSINESS	William H. Wright
EDUCATION	Fred F. Harclerod, Jr.
FINE ARTS	George N. Sorenson
HEALTH, PHYSICAL EDUCATION AND RECREATION	William L. Terry
LANGUAGES AND LITERATURE	John R. Adams
LIFE SCIENCES	Robert D. Harwood
PHYSICAL SCIENCES	Dudley H. Robinson
SOCIAL SCIENCES	Clarence G. Osborn

CHAIRMEN OF DEPARTMENTS

ACCOUNTING AND BUSINESS MANAGEMENT	Eugene P. Brown
AIR SCIENCE AND TACTICS	Lt. Col. Charles E. Mosse
ART	Everett Gee Jackson
ASTRONOMY, GEOLOGY, AND PHYSICAL SCIENCE	Baylor Brooks
BOTANY-BACTERIOLOGY	Mabel A. Myers
BUSINESS EDUCATION, SECRETARIAL AND OFFICE MANAGEMENT	E. Dana Gibson
CHEMISTRY	Robert D. Rowe
ECONOMICS	Frederick L. Ryan
EDUCATION	Fred F. Harclerod, Jr.
ENGINEERING	Curtis R. Walling
ENGLISH	Sidney L. Gulick, Jr.
FOREIGN LANGUAGE	Leonard N. Messler
GEOGRAPHY	Robert W. Richardson
HEALTH	William H. Lauritsen
HISTORY	Kramer J. Rohlfelsch
HOME ECONOMICS	Ruth A. Talboy
INDUSTRIAL ARTS	Kenneth Phillips
JOURNALISM	Arthur C. Wimer
LIBRARY SCIENCE	John Paul Stone
MARKETING	Frances B. Torbert
MATHEMATICS	Maurice M. Lemme
MUSIC	Pattee E. Evenson
PHYSICS	Louis E. Smith
PHYSICAL EDUCATION, MEN	William L. Terry
PHYSICAL EDUCATION, WOMEN	Marion L. Schwob
POLITICAL SCIENCE	Don B. Leiffer
PSYCHOLOGY AND PHILOSOPHY	Oscar J. Kaplan
RECREATION	Frank L. Scott
SOCIOLOGY AND ANTHROPOLOGY	Spencer L. Rogers
SPEECH ARTS	Paul L. Pfaff
ZOOLOGY	Gordon H. Tucker

