

SAN DIEGO STATE COLLEGE

BULLETIN

AND

**ANNOUNCEMENT
OF COURSES**



FOR THE YEAR 1950-1951

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and Director of Education
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BULLETIN

AND

Announcement of Courses

VOLUME 37

JUNE, 1950

SAN DIEGO STATE COLLEGE

SAN DIEGO, CALIFORNIA

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CALENDAR 1950-1951

SUMMER SESSION, 1950

Term I —June 19-July 28
Term IIA—July 31-August 18
Term II —July 31-September 1

FALL SEMESTER, 1950-1951

- July 15 Qualifying examinations for all entering students (8.30 a.m.-12.30 p.m.).
- August 1 Applications for admission must be filed on or before this date.
- August 19 Qualifying examinations for all entering students (8.30 a.m.-12.30 p.m.).
- August 23 All admission requirements must be completed by this date, including receipt of official transcripts.
- September 6, 7, 8, 11 Orientation program. Entering freshmen are required to be on the campus daily to attend all scheduled events and keep all appointments. Other new students are required to keep all scheduled appointments and are strongly urged to attend other events.
- September 6 College aptitude test for transfer students registering late. (10-11.30 a.m.)
- September 8 Teacher training qualifying examinations for transfer students with at least sophomore standing: Fundamentals test for all teacher training candidates (8.30 a.m.-12 m.); General Culture test for candidates for secondary school credentials (1 p. m.-4.30 p.m.).
- September 16 Qualifying examinations for students registering late (8.30 a.m.-12.30 p.m.).
- September 20 College aptitude test for transfer students registering late (8.30 a.m.-10 a.m.).
- September 12-13 Registration and payment of fees.
- September 14 Instruction begins. Late registration fee becomes effective.
- September 25 Last date for late registration.
- September 28 Applications for admission to teacher education. Little Theatre, 12 m.
- September 29 Last date for filing application for M.A. degree.
- November 3 Last date for withdrawal from classes.
- November 23-25 Thanksgiving recess.
- December 8 Last date for filing applications for mid-year graduation.
- December 16 Last day before Christmas recess begins.
- January 2 Classwork resumes.
- January 17-24 Semester examinations.
- January 24 End of first semester.

SPRING SEMESTER, 1950-1951

- January 2 Applications for admission must be filed on or before this date.
- January 7 Qualifying examinations for all entering students (8.30 a.m.-12.30 p.m.).
- January 13 All admission requirements must be completed by this date, including receipt of official transcripts.

January 27, 29, 30	Orientation program. All entering freshmen are required to be on the campus daily to attend all scheduled events and keep all appointments. Other new students are required to keep all scheduled appointments and are strongly urged to attend other events.
January 27	College aptitude test for transfer students registering late (8.30 a.m.-10 a.m.).
January 29	Teacher training qualifying examinations for transfer students with at least sophomore standing: fundamentals test for all teacher training candidates (8.30 a.m.-12 m.); general culture test for candidates for secondary school credentials (1 p.m.-4.30 p.m.).
January 31 and February 1	Registration and payment of fees.
February 2	Instruction begins. Late registration fee becomes effective.
February 12	Last date for late registration.
February 16	Last date for filing application for M.A. degree.
February 22	Applications for admission to teacher education, Little Theatre, 12 m.
March 19-24	Spring recess.
March 30	Last date for withdrawal from classes.
April 20	Last date for filing application for June or summer graduation.
May 30	Memorial Day—holiday.
May 31-June 7	Semester examinations.
June 7	End of second semester.
June 8	Commencement.

SUMMER SESSION, 1951

Term I—June 18-July 27
Term II—July 30-August 17

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.

THE COLLEGE

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 professional education of the faculty places the college at the 97 percentile position among teacher education institutions of the Country. For listing 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 110,000 books and receives more than 700 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 14,000 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 5, 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 22 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 1950-51:

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.

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.

BLUE KEY. Two scholarships of \$50 each are awarded annually by Blue Key. One of these is granted to a needy lower division student of regular standing who has actively participated in student affairs, and the second to an entering freshman who has an outstanding record of achievement in high school activities.

CAP AND GOWN. Two \$50 scholarships are awarded annually to upper division women students who have attended San Diego State College for at least one year previous to date of making application and who have maintained at least a "B" average in scholarship for their entire college career. The scholarships are made available through 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.

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.

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 \$25 scholarships, one to a young woman and one to a young man, are given annually. Selections are made by this club from students entering state college from 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, 1949-1950. Two scholarships of \$50 each will be awarded in the fall of 1950, 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.

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.

LA MESA EVENING WOMAN'S CLUB. One \$75 scholarship is awarded by this club to a student entering San Diego State College.

LA SOCIAS NEUVAS. Two \$50 scholarships are given annually to women students selected by this organization.

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.

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.

P. E. O. (ER CHAPTER). A sum of \$15 a month is granted each year to a woman student enrolled in San Diego State College.

P. E. O. (DM, HR, AND IZ CHAPTERS). Scholarships ranging from \$35 a semester to \$50 a semester are awarded annually from these clubs. Selection is made by the chapter itself or by the Committee on Loans and Scholarships of the college.

PANHELLENIC (S. D. S. C.). Fifty dollars annually is given to the sorority girl who has the highest grade point average for the year.

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 BASEBALL CLUB. An annual scholarship of \$250, made available by the San Diego Baseball Club, is distributed to San Diego State College athletes with a principal interest in baseball. Recipients are selected by the Director of Athletics of the college, with the 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 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 ENGINEERS CLUB. A scholarship of \$50 is given each semester by the San Diego Engineers Club to a student majoring in engineering who shows particular ability in that field. Three candidates from all students applying are recommended by the Committee on Loans and Scholarships. These three candidates are interviewed by the members of the Engineers Scholarship Committee, who make the final selection.

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

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, W. K. Each June \$100 will be awarded a student graduating from San Diego State College who had a major in history. The student must enroll in an accredited college or university to work for a higher degree or credential; must have completed at least two years of upper division work at San Diego State College. Applicant is selected by the Department of History and approved by the Committee on Loans and Scholarships.

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.

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.

WOMEN'S CIVIC LEAGUE. The Women's Civic League sponsors an annual award of \$50 to a deserving woman student selected by the league.

ADDITIONAL DONORS

Additional donors to scholarship funds or to the San Diego State College Foundation include the following:

Al Bahr Temple
Alpha Kappa Alpha
American Association of University women, Coronado
Auxiliary, San Diego County Medical Society
Aztec Athletic Angels
Baranov, Nate
California Congress of Parents and Teachers
Dairy Mart
Del Mar Charities
Delta Sigma Theta (Beta Nu Chapter)
Epsilon Pi Theta
Escondido Junior Women's Club
Fox, George
George, William Robert
Goodwin, Percy
Gildred, Philip
Griffin Properties

Hale, E. T., and Sons
Heilbron, Frances
Herbert Hoover Alumnae Association
Kelly, Mr. and Mrs. Wilbur
Kiwanis Club of San Diego
Lions Club of San Diego
Milk Institute of San Diego County
Nida, W. L.
Pythian Sisters, Grand Temple
Ripley, Robert
Rosenberg Foundation
Rotary Club of Escondido
Simpson, Fred
Small, Lucian K.
Solof's, Ltd.
Sundberg, R. H.
Thursday Club
Todd, O. W., Jr.
Anonymous

LOANS

Short term loans are available to students who have attended the San Diego State College for at least one semester who have demonstrated ability to do satisfactory college work. Applications for loans are made to the Committee on Loans and Scholarships through the offices 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. Due to crowded conditions the college probably will have to refuse all qualified applicants who do not file application blanks and official transcripts prior to the dates indicated in the calendar.

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.

Adult special status may be granted an applicant who is over 21 years of age or is a veteran of World War II, provided that he demonstrates through qualifying examinations satisfactory ability to do college work. Such students may be transferred to regular status upon removal of all matriculation deficiencies and after 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.

ADMISSION BY EXAMINATION

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

SPECIAL STUDENTS

In exceptional cases, persons over 21 years of age or veterans of World War II who do not fully meet the college entrance requirements may be admitted as special students upon presentation of evidence showing good character and ability to do satisfactory work at this college. Non-high school graduates shall be required to complete, in addition to the usual requirements for the A.B. Degree, three semester units of college work for each two semester courses lacking high school graduation. College graduate students who do not qualify for admission to graduate status (see admission to graduate status) may be admitted as special graduate students.

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.

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.

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, and Bachelor of Education. The Master of Arts degree is offered for persons holding valid California teaching credentials.

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 courses are on the upper division and graduate levels 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 staff members 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, commerce, 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 Director of Extension and Extended Day 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, commerce, and the arts and sciences. Classes may be organized on campus, or 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 Director of Extension 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. Exceptions may be made for graduate students and for those who register for five units or less and for those registered only in Extended Day classes.

3. All entering freshmen and college transfer students who present less than a minimum of 12 units of college credit must take the regular battery of achievement and aptitude tests. The freshman English course which a student will take will be determined by results of 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

Petitions for changes in program may be secured at the Registrar's office. A fee is charged for changes in program after registration books are filed.

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. Laboratory fees are additional.

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.

LIST OF FEES AND DEPOSITS (SUBJECT TO REVISION)

Enrollment Fees and Deposits (Payable at time of registration)	
By all students:	
Tuition (auditors pay same fees as other students):	
Regular students (carrying over 5 units)	\$6.50
Limited students (carrying 5 units or less) per unit	2.50
Materials and service:	
Regular students	7.50
Limited students per unit	.75
Student activity fees (not a State Fee):	
Regular students	10.00
Limited students	2.00
Associated Students Group Accident Insurance	2.50

Miscellaneous Fees and Deposits (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

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	
Term I, six units	\$36.00
Term II, six units	36.00
Term IIA, three units	24.00

GENERAL REGULATIONS

INFORMATION

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

NUMERING 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 LIMIT

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 junior; 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 units* for credit toward graduation. A normal semester's program is 15 units.

Certain exceptions to this rule exist. If during the preceding semester the student has carried at least 12 units*: (1) If a grade point average of at least 1.5 was earned, 17 units* may be carried for credit toward graduation; and (2) if a grade point average of 2.0 (B) was earned, 18 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 Arts and Sciences or the Dean of Education.

PROBATION AND DISQUALIFICATION

PROBATION

Any student whose scholarship record shows a cumulative deficit of nine 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

* In addition to the required one-half unit physical education activity courses.

student does not increase his grade point deficiency. The student will remain on probation until the grade point deficiency has been reduced below nine 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 two-thirds 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.

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 grade 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 GROUP

All students who at the end of the sophomore year have attained a grade-point average of 2.5, and such others as have attained a high average in the department in which their major is selected, and who have received the recommendation of that department and the consent of the Committee on Honors, may if they so elect, constitute an honors group, for special treatment in their major subject.

Such students, 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 capacities warrant. They shall be eligible to enroll in honors or special study courses, although credit in such courses shall be limited to 5 units a semester. They shall not be held to regular attendance in the established courses of their departments if, in the opinion of the instructor, the course requirements can be met through special assignments and examinations or by satisfactory performance in the regular examinations in the course. With the consent of the major department, requirements concerning minors and specific courses or sequences in the major may be set aside. Each honor student shall be assigned to a member of his major department for advice and direction.

Students in the honors group who fail to take advantage of the opportunities there offered may at the end of any semester be transferred by the department to the general course. Students in the general course who show unusual capacity, upon recommendation of the department and the Committee on Honors, may at the end of any semester, be transferred to the honors group if such transfer appears practicable.

Students who wish to apply for entrance into the Honors group may do so by filling out cards to be obtained from the Registrar's Office. The application should be approved by the major department and by the Honors Committee within the first week of registration. 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.

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 Arts and Sciences or the Dean of Education and the instructor concerned.

CREDIT FOR EXTENSION COURSES

The amount of credit for extension and correspondence courses acceptable in fulfillment of the requirements for the Bachelor of Arts Degree will depend upon the nature of the courses, the quality of the work done, and the student's preparation for work in the field of the course. The college ordinarily limits credit to such courses as have been approved, and the total of such acceptable credit to 12 units. Extension courses are not accepted for graduate credit.

CREDIT GRANTED FOR MILITARY SERVICE

Six units of lower division elective credit will be granted to students who have served in the armed forces of this country upon the completion of the prescribed basic training program before January 1, 1947. Documentary evidence bearing the signature of the proper commanding officer must be filed before credit will be accorded to the student.

Additional units of credit may be granted to students who can document the fact that they have completed officer's or other specialized training, and have been assigned to active military duty before January 1, 1947.

Completion of one semester's work, or 12 units, at this college after military service, is required before military credit will be granted.

THE BACHELOR OF ARTS DEGREE

GENERAL REQUIREMENTS FOR THE BACHELOR OF ARTS DEGREE IN TEACHER EDUCATION AND IN ARTS AND SCIENCES

TYPES OF CURRICULA

San Diego State College offers two types of curricula leading to the A.B. degree.

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

GRADUATION REQUIREMENTS

- (a) A minimum of 120 semester units of college work representing a four-year course is required for graduation.
- (b) Twenty-four units of work, ordinarily taken in the senior year, must be earned at this college.
- (c) At least a C average in scholarship must be maintained in all college work attempted, in all work within the major field, and in all work taken at this college.
- (d) At least 40 units must be completed in the upper division, 30 of which must be earned after all lower division requirements have been satisfied.
- (e) Student must comply with the State requirements in United States Constitution, American history, institutions, and ideals.
- (f) All major, minor, and specific curriculum requirements must be met.

LOWER DIVISION REQUIREMENTS FOR ALL CURRICULA

	Units
Physical Education	2
Health Education 21	2
English	6
Psychology	3
Foreign Language (not required in commerce, engineering, or in teacher education in the elementary, junior high and special secondary curricula)	0-6
Mathematics A and B, 6 units, or high school algebra and geometry	0-6
Social Sciences	12
Natural Sciences	12
Electives to make total of 60 units, including lower division preparation for the major and minor.	

EXPLANATION OF LOWER DIVISION REQUIREMENTS

English

The English requirement should be satisfied in either the freshman or sophomore year. Unless departmental regulations specify other courses, the student should satisfy this requirement by taking English 1 and either English 2 or any optional course approved by the English Department. The prerequisite for English 1 is a passing mark in the English A qualifying examination or completion of the course in English A. Credit in English A may be used toward graduation but not in satisfaction of the 6-unit lower division requirement in English.

Psychology

The requirement in psychology should ordinarily be satisfied in the freshman year by completion of Psychology 1.

Foreign Languages

At least six units in one foreign language are required in the lower division except that no language is required in commerce, engineering, or in teacher education in the elementary, junior high, and special secondary curricula.

Reduction of unit requirement. Each year-course in one foreign language completed in high school will reduce the lower division requirement by three units; thus, two years in one foreign language completed in high school will satisfy the requirement in full. The last year of a foreign language completed in high school may be repeated in college for credit not to exceed three units toward graduation.

Social Sciences

Twelve units, at least eight of which are in the lower division, selected from two or more of the following fields in social science are required: anthropology, economics, geography (except 1 and 3), history, political science, social science, and sociology. Eight of the 12 units must be in the lower division. (Note: Courses in commerce, home economics, library science, philosophy, or psychology may not be used in satisfaction of this 12-unit social science requirement.)

Reduction of unit requirement. Two high school semester courses in the fields of history, political science, sociology, and economics taken in the senior year with grades of B or better may be used to reduce the 12 unit social science requirement to nine units.

Natural Sciences

Twelve units, at least eight of which are in the lower division, selected from courses representing each of the following groups, are required:

(a) **Life sciences.** Courses must be selected from one of the following fields: bacteriology, biology, botany, physiology, or zoology. This requirement may be satisfied by completion of a year course in high school or by a semester course in college (recommended: Biology 1). If laboratory credit is desired, select from life science courses listed in section (c) below.

(b) **Physical sciences.** Courses must be selected from the following fields: astronomy, chemistry, Geography 1 or 3 (but not both), geology, physical science, or physics. A semester course in college in any one of these subjects will satisfy this requirement. This requirement may also be satisfied by completion of a year course in high school chemistry or physics. (Students who expect to satisfy this requirement by a physical science course in college should register for the following: those who have not completed a year course in high school in either physics or astronomy, should take Physical Science 1A; those who have not completed a year course in high school in either chemistry or geology should take Physical Science 1B). If laboratory credit is desired, select from physical science courses listed in section (c) below.

(c) **Laboratory course in natural sciences.** This requirement may be satisfied by completion of a year course in high school with grade of C or better for the final semester of the junior or senior year in one of the following fields: botany, chemistry, physics, or zoology. The laboratory requirement may be satisfied by one of the following college courses:

Life Sciences

Bacteriology 1
Biology 10A and 10B
Botany 2A
Physiology 1C
Zoology 1A

Physical Sciences

Chemistry 1A
Chemistry 2A and 2B
Geology 1A and 1B
Physics 4A and 4B
Physics 2A, 2B, 3A, and 3B
Astronomy 1 and 9 and 10

Reduction of unit requirements. The 12 unit natural science requirement may be reduced to nine units by completion of a high school year course in biology, botany, chemistry, physics, physiology, or zoology taken in the senior year with grade of B or better for the final semester.

Mathematics

Mathematics A (elementary algebra) and Mathematics B (plane geometry) are required. This requirement may be satisfied by completion of a year course in high school in algebra and a year course in plane geometry with grade of C or better for the final semester of each course. College credit will be granted for completion of Mathematics A or B unless the corresponding high school course was completed with grade of C or better in which case the repeated course will be classified as a "refresher" course carrying no college credit. Students having one semester high school credit in trigonometry, intermediate algebra or solid geometry may repeat the corresponding course in college for 1½ units of college credit.

Physical Education

With the exceptions listed, all lower division students must elect one or more courses each semester. Two units of activity credit must be offered for graduation. Exceptions: (a) veterans of World War II; (b) students over 25 years of age. Students carrying fewer than 12 units during any semester may 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 make a recommendation.

Health Education

The requirement in health education will be satisfied in the freshman year by completion of Health Education 21.

Lower Division Preparation for the Major and Minor

For description of requirements for majors and minors in teacher education, see section entitled: Upper Division Requirements for the Bachelor of Arts Degree in Teacher Education.

For description of requirements for majors and minors in arts and sciences, see section entitled: Upper Division Requirements for the Bachelor of Arts Degree in Arts and Sciences. Specific requirements for each major and minor are listed in connection with the description of courses in each major field. See section entitled: Announcement of Courses.

UPPER DIVISION REQUIREMENTS FOR THE BACHELOR OF ARTS DEGREE IN ARTS AND SCIENCES

MAJORS IN ARTS AND SCIENCES

The arts and sciences curricula lead to the Bachelor of Arts degree with majors in art, botany, chemistry, commerce, economics, engineering, English, French, geography, history, life science, mathematics, music, physics, political science, psychology, romance languages, social science, sociology, Spanish, speech arts, and zoology and qualify for graduate work in these fields in recognized American colleges and universities. Completion of the requirements of these curricula also enables the graduate to satisfy undergraduate requirements for the general secondary credential which, with graduate work, will enable the holder to teach in a senior high school or junior college.

MINORS IN ARTS AND SCIENCES

Minors must be established in one of the following fields: anthropology, art, astronomy, bacteriology, botany, chemistry, commerce, comparative literature, economics, education, engineering, English, French, geography, geology, health education, history, home economics, industrial arts, journalism, life science, mathematics, music, philosophy, physical education, physics, political science, psychology, recreation, sociology, Spanish, speech arts, and zoology.

UPPER DIVISION REQUIREMENTS

Preparation for Upper Division

Students must complete the lower division requirements for all curricula. In addition, lower division requirements for the major and minor must be completed. Refer to the section of this bulletin entitled: Announcement of Courses, and to the outlines of curricula in the section entitled: Preprofessional and Vocational Curricula.

Minimum Units and Credit Limitations

	Units
Major and minor work are required as follows:	
Minor (minimum in upper division courses)	9
Major (upper division courses)	24

At least 40 units in upper division courses must be completed, 30 of which must be earned after all lower division requirements have been satisfied. If a student is approaching upper division standing, he may carry sufficient lower division units to complete the required minimum of 60 units and carry upper division units for the remainder of his study load. Students with sophomore standing may carry upper division courses for upper division credit provided that they have the written approval of the chairman of the department and the Dean of Arts and Sciences or Dean of Education.

MAJORS AND MINORS

Majors

The specific requirements for each major are listed at the beginning of each departmental division among the description of courses. (See Announcement of Courses.) The student is advised to choose his major as early in his college course as practicable so that he may be able to plan his work according to the major requirements. Failure to meet the lower division requirements of the major department before the junior year may make it impossible to satisfy the upper division requirements within the normal period of two years. In addition to the majors in arts and sciences listed above, the following major is also offered:

The General Major: The general major of 36 upper division units must be chosen from three fields with not more than 15 units nor fewer than six to 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 of 40 upper division units for graduation.

The general major is planned for students who are preparing for home arts, law, journalism, library work, public administration, social work, theology, recreation, or for any other vocation requiring a background of general training. The program of the student should be planned in consultation with the Dean of Arts and Sciences and approved, revised, or rejected by the departmental advisers of the three majors concerned.

Minors

A minor consists of at least 15 units of work completed in one of the above fields of study. At least nine of these units must be earned in upper division courses. The entire requirement for a minor may be met with upper division courses provided these courses have no lower division prerequisites. Prerequisites for each course are listed among the course descriptions. (See section on Announcement of Courses.)

EXAMINATION REQUIREMENTS IN THE UNITED STATES CONSTITUTION AND AMERICAN HISTORY, INSTITUTIONS, AND IDEALS

Each student of a state college to qualify for graduation shall demonstrate competence in the United States Constitution and American history, institutions and ideals, by passing satisfactorily a comprehensive examination on these fields prepared and administered by the college. Students transferring from other institutions of collegiate grade who have already met this requirement may have this examination waived, except that candidates for a teaching credential must meet the United States Constitution requirement by examination or by completion of a course covering the Constitution in a California institution of collegiate grade. The examination ordinarily should be taken in the junior year.

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

1. Passing satisfactorily comprehensive examinations in both United States Constitution and American history, institutions and ideals.
2. Completion of History 17A and 17B, or History 171A and 171B, or History 172A and 172B, or Political Science 71A and 71B, or Political Science 139A and 139B.
3. Completion of Political Science 101, or 137A and 137B, plus satisfactory completion of an examination in American history, institutions and ideals.
4. Completion of History 8A and 8B, or History 173A and 173B, or History 179A and 179B, plus satisfactory completion of an examination of the United States Constitution or the substitutes for that examination enumerated in item 3.
5. Completion of comparable courses in other institutions of collegiate grade, except that candidates for the A.B. degree and a teaching credential must have completed the course covering the United States Constitution in a California institution of collegiate grade.

PROFESSIONAL, PREPROFESSIONAL, AND VOCATIONAL CURRICULA

For description of professional curricula in education, see section entitled: Professional Curricula in Education; for preprofessional and vocational curricula, see section entitled: Preprofessional and Vocational Curricula.

UPPER DIVISION REQUIREMENTS FOR THE BACHELOR OF ARTS DEGREE IN TEACHER EDUCATION

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 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 chiropractist, 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) A junior high school teaching major.
- (b) Education 100B in the major field.
- (c) Three units of directed teaching, or equivalent, in a junior high school.
- (d) Education 115B.

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) A junior high school teaching major, excluding the special secondary credential majors.
- (b) Education 100B in the junior high school teaching major.
- (c) Three units of student teaching in the junior high school teaching major.

EXAMINATION REQUIREMENTS IN THE UNITED STATES CONSTITUTION, AMERICAN HISTORY, INSTITUTIONS, AND IDEALS

This requirement is the same as that for the degree in arts and sciences. For specific explanation, refer to the section entitled: Upper Division Requirements for the Bachelor of Arts Degree in Arts and Sciences.

UPPER DIVISION REQUIREMENTS

Preparation for Upper Division

Students in teacher education curricula must complete the lower division requirements for all curricula as indicated in the section entitled: General Requirements for the Bachelor of Arts Degree in Teacher Education and in Arts and Sciences. Additional pattern requirements are outlined under each specific curriculum on the following pages.

Minimum Units and Credit Limitations

A minimum of 40 units in upper division courses must be completed, 30 units of which must be earned after all lower division requirements have been satisfied. If a student is approaching upper division standing, he may carry sufficient lower division units to complete the required minimum of 60 units and carry upper division units for the remainder of his study load. Students with sophomore standing may carry upper division courses for upper division credit provided that they have the written approval of the chairman of the department and the Dean of Education.

A maximum of 40 units of credit in any one subject matter field or in education courses may be applied toward the requirements of the A.B. degree.

Preparation for Graduate Work

Students who take the A.B. degree with a special credential and who contemplate doing graduate work for a master's degree in an academic field or for the general secondary credential, will find it advantageous to use their electives to provide a foundation for that work.

MAJORS AND MINORS

All teaching curricula require one major and one minor.

Major and Minor for the Elementary Credential

Education shall be the major for the kindergarten-primary and general elementary school credentials. Its requirements are outlined under those curricula. It is recommended that the minor for these credentials be chosen from the academic fields of English, foreign languages, mathematics, science or social science. The minor in social science must include 6 upper division units in history or in geography and 3 units

selected from anthropology, economics, geography, history, political science, or sociology. The minor in English must include three units in American Literature. A second minor, though not required, may be chosen from one of these fields or from art, home economics, industrial arts, music, physical education or speech arts. Students taking an elementary credential in combination with a special secondary credential may use the special major for their minor in elementary education.

Teaching Major for Junior High School and Special Secondary School Credentials

A teaching major for the junior high school credential consists of a minimum of 24 units of which a minimum of 18 units must be in the upper division. An average of C in scholarship is required in all upper division courses in the field of the teaching major. Teaching majors may be established in the following fields: **English, foreign languages, general science, mathematics, and social science.** A teaching major in the special secondary credential curricula of art, business education, music, physical education, and speech arts ranges from 24 to 40 units, depending upon the curriculum; these may not be used for a junior high school credential major. Refer to the following pages for outlines of requirements for these credentials.

A *Teaching Major in English* shall include English 1 or 41, and nine units selected from lower division English electives, of which six units must be in a year-course, and 18 units of upper division work. This credit must include three units in American Literature and three units in Shakespeare. Recommended: English 192.

A *Teaching Major in General Science* shall include a minimum of 24 units, not less than 18 of which are upper division, including a college year course in a biological science, a year course in high school or college physics and a concentration of 12 units, at least six of which are upper division, in one major subject (botany, chemistry, physics, zoology). See definition of teaching majors.

A *Teaching Major in Social Science* shall include a minimum of 24 units, not less than 18 of which are upper division. There shall be a concentration of 12 units, at least six of which are upper division, in one major subject (anthropology, economics, geography, history, political science, or sociology). A year course in American History must be included. See definition for teaching majors for the junior high school credential.

Teaching Minor for Junior High and Special Secondary Credentials

A teaching minor consists of 15 units in a given field, of which nine or more must be in upper division courses. Teaching minors may be established in the following fields: **art, business education, English, foreign languages, general science, health education, home economics, industrial arts, mathematics, music, social science, physical education, recreation, and speech arts.** (See requirement above for elementary school credentials.)

A *Teaching Minor in English*: Candidates for the teaching minor in English must include English 1 or 41 and three units of lower division electives; and nine elective units in upper division English. This credit must include three units in American Literature, taken either in lower division or in upper division. Credit in journalism and speech arts may not be used to fulfill the requirements for the English minor.

A *Teaching Minor in Health Education* shall include: Physical Education 51, Health Education 65 and 90 in the lower division; Health Education 152, 153, Physical Education 199 or equivalent in the upper division. For physical education majors, Health Education is allowed only as a second minor area.

A *Teaching Minor in Home Economics* shall include: Home Economics 5, or 62, and 11 in the lower division; Home Economics 101, 105, and 150, in the upper division. Three units of electives may be chosen from Home Economics 1, 62, 135, or 170.

A *Teaching Minor in Industrial Arts*: This minor shall consist of a minimum of 15 units of work in industrial arts, nine units of which must be from 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: wood-working, metalworking, and electricity.

A *Teaching Minor in Music*: Candidates for the teaching minor in music are required to take music aptitude tests at the time the minor is chosen and to enroll in at least one music activity each semester. In special cases this requirement may be waived by permission of the faculty of the Music Department.

Applicants for music minors must maintain a grade average of C in all music courses. All students must show credit for Music 1A or clear this requirement by examination. Music 7A is required of all candidates for the elementary credential.

In the lower division, with the proper regard for course sequences, 6 units may be chosen from the following courses: Music, 1A-1B-1C-1D, 2A, 3A, 4A, 4B, 5A, 5B, 6A, 16, 17, 18, Aesthetics 1A, 1B. Nine units of upper division music are required, not more than two of which may be selected for credit from the activity courses (Treble Clef, orchestra, etc.).

A Teaching Minor in Physical Education: Men must show credit for: two professional activity courses and Physical Education 51, 53, and 72 in the lower division; Physical Education 170, 190, and at least four units in upper division professional activity courses approved by the department.

Women must show credit for: four semesters of physical education activity courses, Physical Education 53, and $3\frac{1}{2}$ units of electives in the lower division; nine units chosen from Physical Education 190, 156A-156B, 161, 164, and 170A in the upper division.

A Teaching Minor in Recreation: Lower division requirements: Four semesters of physical education activity courses and in addition a minimum of six lower division units to include Physical Education 51, 53, and electives chosen from Art 61B or fields of dance, drama, or music. Upper division requirements: A minimum of nine units, including Physical Education 165, 170A-170B, and 184A. For physical education majors, Recreation is allowed only as a second minor area.

A Teaching Minor in Social Science: A teaching minor in social science must include the general education lower division requirement and in addition a minimum of nine units of upper division social science courses, selected from anthropology, economics, geography, history, political science, or sociology, six units of which must consist of a year course sequence. Six units in American History or three units in American History and three units in Political Science must be included.

Teaching Majors for General Secondary Credential

Teaching majors may be established in the following fields: art, business education, chemistry, economics, English, history, life science, mathematics, music, physical education, physical science, physics, romance languages, social science, Spanish, and speech arts; also psychology as a nonteaching major with two teaching minors. In most fields, 12 semester units are required in the lower division and 24 semester units in the upper division. Some departments permit six units of these 24 upper division units to be selected from related fields with the approval of the departmental representative. In addition to these undergraduate requirements two to six semester units of graduate work are required in the major field during the postgraduate year. For the programs for each department, refer to the sections entitled: Curricula Leading to the General Secondary School Credential. This section also explains the requirements for admission to candidacy for the General Secondary Credential. Candidates for the General Secondary Credentials should consult with the Director of Secondary Education during their first registration period at San Diego State College.

Teaching Minors for the General Secondary Credential

Teaching minors may be established in the following fields: art, business education, chemistry, economics, English, French, health education, history, home economics, industrial arts, life science, mathematics, music, physical education for men, physical education for women, physics, recreation, Spanish, and speech arts. In most fields, six semester units are required in the lower division and nine semester units in the upper division for the A.B. degree. This credential requires enough additional units to make a minimum of 21 semester units to be completed by the date of recommendation for the credential. For the programs for each department, refer to the section entitled: Curricula Leading to the General Secondary School Credential.

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 rule must have the approval of the Dean of Education. 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), 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, minor field, and the education department.
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.

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 Director 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 deduction 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 degree requirements.

PROFESSIONAL CURRICULA IN EDUCATION

Professional curricula in education, requiring from four to five years to complete, lead to the teaching credentials.

All candidates in teacher education curricula should observe carefully the requirements for admission to teacher education and be prepared to meet them at the end of the sophomore year. Students in other colleges who contemplate transferring to San Diego State College should arrange their programs so as to meet the requirements of their particular curriculum as early as possible. See college calendar for dates when the Fundamentals Test and General Culture Test will be given. Refer to the section entitled: Admission to Teacher Education.

CURRICULA LEADING TO THE GENERAL ELEMENTARY, KINDERGARTEN-PRIMARY, OR GENERAL JUNIOR HIGH SCHOOL CREDENTIAL

A.B. DEGREE WITH GENERAL ELEMENTARY OR KINDERGARTEN- PRIMARY CREDENTIAL

One teaching minor is required. Refer to the section entitled: Upper Division Requirements for the Bachelor of Arts Degree in Teacher Education.

	Gen. Elem.		Kdg.- Primary	
	1st Sem.	2d Sem.	1st Sem.	2d Sem.
Freshman Year				
Physical Education (activity courses)-----	2½	2½	2½	2½
Art 6A-6B, Design-----	2	2	2	2
English 1, Freshman Comp., English 2, Freshman Lit.-----	3	3	3	3
Health Educ. 21, Principles, Psychology 1, General-----	2	3	2	3
Physical Science 1A-1B, Introduction (if chemistry and physics completed in high school, substitute other science. See course description.)-----	3	3	3	3
Electives, including social science, minor, or other lower division requirements-----	6	6	6	6
	16½	16½	16½	16½
Sophomore Year				
Physical Education (activity courses)-----	2½	---	2½	---
Art 61A, Crafts in the Elementary Schools-----	2	---	2	---
Biology 1, Survey (if no laboratory course in high school, take 10A-10B or Botany 1)-----	3	---	3	---
Geography 1, Elements (natural science credit) and Geo- graphy 2, Regions (social science credit)-----	3	3	3	3
Music 1A, Musicianship, and 7A, Materials for Elem. School Music 28A-28B, Piano (or equivalent by examination) (may be taken in the junior year)-----	3	3	3	3
Speech Arts 1, Voice and Diction-----	---	---	1	1
Spanish 70, Span. for Elem. Sch. Teachers (not required but recommended if no high school Spanish)-----	---	---	---	3
Physical Education 53, P.E. in Elem. Sch.-----	---	3	---	2½
Electives (complete lower division requirements and minor)-----	4	2½	3	3
	15½	15½	15½	15½

Junior Year

Students transferring from another curriculum in lower division or from another college or junior college may interchange this semester with semester II of the senior year. (Forty units of upper division work are needed.) The Education Department will probably find it necessary to ask some students who have met all requirements to defer entering practicum until the second semester of the junior year in order to equate class size. Those who defer entering the practicum should use this semester to

1. Complete lower division requirements in art, music, Physical Education 53, natural science, social science and others as needed.
2. Complete minor requirements.
3. Meet requirement for American History and U. S. Constitution.
4. Elect Education 102A or 102B if needed to complete program. Permission to enter these courses must be secured from the instructor.

	Gen. Elem.		Kdg.- Primary	
	1st Sem.	2d Sem.	1st Sem.	2d Sem.
Junior Year				
Educ. 102A, Measurement, and 102B, Child Growth and Development-----	3	3	3	3
Health Educ. 151, For Teachers (taken with practicum)-----	2	---	2	---
Education 147, Practicum-Primary Level-----	10	---	10	---
Reading and Elem. Methods (3), Arithmetic (3), Elem. Music Educ. (1), Elem. Art Educ. (1), Lan- guage Arts (2) Proficiency in use of audio-visual equipment is re- quired by examination. Specific instruction in audio- visual materials is given in each subject matter methods course.	---	12	---	8
Education 148, Practicum-Intermediate Level-----	---	12	---	8
Elem. Social Studies and Science Educ. (3), Elem. Art Educ. (1), Elem. Music Educ. (1), Educ. Psychology (3), Additional 4 units for Gen. Elem. but not Kdg.-Primary, Curriculum in Elem. Educ. (2), Directed Teaching (2)	---	15	---	15
Education 116, Directed Teaching, primary grades-----	---	---	---	4
	15	15	15	15
Senior Year				
Education 116, Directed Teaching-----	7	---	4	---
Education 146, Kdg.-Primary Practicum (follows Educa- tion 148)-----	---	---	4	---
Education 115A, Hist. and Phil. of Educ. (or in second semester)-----	2	---	2	---
Electives (complete the minor)-----	3	15-17	3	15-17
	12	15-17	13	15-17

A.B. DEGREE WITH GENERAL JUNIOR HIGH SCHOOL CREDENTIAL

This credential is granted only in conjunction with a general elementary or a special secondary credential. For information regarding combinations of credentials and for descriptions of majors and minors, refer to the section entitled: Upper Division Requirements for the Bachelor of Arts Degree in Teacher Education. Students who intend to work for a general secondary credential or the master's degree should counsel with the Director of Secondary Education upon application to teacher education.

	Units			Units	
	1st Sem.	2d Sem.		1st Sem.	2d Sem.
Freshman Year			Junior Year		
P.E. (activity courses) ----	1	1	Health Educ. 151, H. Ed. for Teachers (either semester) 2	--	
Natural Science (include Geog. 1, Elements, Biol. 1, Survey, and Phys. Sci. 1A or 1B, Intro. See lower division requirements) --	6	3	Educ. 184A, Sec. Sch. ----	4	--
Engl. 1, Comp., and 2, Lit. Health Ed. 21, Prin. ----	3	3	Educ. 184B, Devel. and Learning ----	--	4
Geog. 2, Regions (social science credit) ----	--	3	Electives (to include major and minor) ----	9	11
Electives (to complete lower division requirements) --	4	6		15	15
	15½	15½	Senior Year		
Sophomore Year			Educ. 100B, Methods in major and minor subjects. (Fall only) ----	3	--
P.E. (activity courses) ----	1	1	Educ. 184C, Teaching Process ----	4	--
Psychology 1, General ----	3	--	Educ. 116, Directed Teaching ----	3	3
Speech 2A, Fundamentals ----	--	3	Electives (to include major and minor) ----	5	12
Electives (to include preparation for major and minor and completion of lower division requirements) ----	12	12		15	15
	15½	15½			

CURRICULA LEADING TO THE SPECIAL SECONDARY CREDENTIALS

A.B. DEGREE WITH SPECIAL SECONDARY CREDENTIAL IN ART

This course leads to the A.B. degree and to the Special Secondary Credential in Art which entitles the holder to teach art in senior high, junior high, and elementary schools.

Lower Division	Units	Upper Division	Units
P. E. (activity courses) ----	2	Aesth. 150, Appreciation and Hist. of Art ----	2
Aesth. 5, Art Orientation, or 51, Survey of Mexican Art ----	2	Art 160A, Printmaking ----	2
Aesth. 50, Hist. and Appreciation of Art ----	2	Art 112A, Design and Composition ----	2
Art A-B, Draw. and Comp. ----	2-4	Art 116A, Advanced Painting ----	2
Art 6A-6B, Design ----	4	Art 119A, Ceramics ----	2
Art 14A, Lettering ----	2	Art 194A, Costume Design ----	2
Art 61A, Crafts in Elem. Schs. ----	2	Art 195, Design ----	2
Art 61B, Crafts ----	2	Electives in upper division art ----	5
Electives in Art ----	6-8	Speech Arts 140A, Stage Design ----	3
Engl. 1, Comp., and 2, Lit. ----	6	Health Educ. 151, H. Ed. for Teachers ----	2
Health Educ. 21, Principles ----	2	Educ. 184A, Secondary School ----	4
Natural Sciences (see lower division requirements) ----	9-12	Educ. 184B, Development and Learning ----	4
Psychology 1, General ----	3	Educ. 184C, Teaching Process ----	4
Social Sciences (see lower division requirements) ----	9-12	Educ. 119, Art in Elem. Sch. ----	2
Electives, including minor ----	7-10	Educ. 100B-A, Methods in Art and in the minor ----	4
	60	Educ. 116, Directed Teaching ----	6
		Electives, including minor ----	12
			60

A.B. DEGREE WITH SPECIAL SECONDARY CREDENTIAL IN BUSINESS EDUCATION

This course leads to the A.B. degree and to the Special Secondary Credential in Business Education, which entitles the holder to teach business subjects in junior and senior high schools and in junior colleges.

In addition to the following academic requirements, satisfactory evidence of one-half year, or 1,000 hours of approved experience in the field named in the credential must be submitted.

Six areas of specialization are possible for the student majoring in Business Education: *Accounting, Accounting-Secretarial, Merchandising, Real Estate and Insurance, Secretarial, and Supervision and Management.*

Lower Division	Units	Upper Division	Units
Com. A, Bus. Arith. ----	1	Com. 103A, Office Mgmt. ----	3
Com. 1A-1B, Typewriting (placement exam. before enrollment) --	6	Com. 105A-105B, Office Systems ----	6
Com. 16A-16B, Secretarial Acctg. ----	6	Com. 108, Records Mgmt. ----	2
Com. 18A-18B, Com'l Law (should be taken in junior year) ----	(6)	Bus. Educ. Subfield requirements: 6-10	
Bus. Educ. Subfield requirements: 9-10		Accounting: Com. 160A, 164A.	
Accounting: Any 9 units selected from Com. 20, 21, 24, 25, or 27.		Acctg.-Secretarial: Com. 160A and 164A or 113A-113B.	
Acctg.-Secretarial: Com. 5A-5B (placement exam. before enrollment. May be taken in junior year).		Supervision and Mgmt.: Com. 153, 154, and Econ. 151.	
Merchandising: Com. 20, 24, 25.		Merchandising: Com. 185, 186, 187A-187B, Art 107.	
Real Estate and Ins.: Any 9 units selected from Com. 20, 21, 24, 25, or 27.		Real Estate and Ins.: Com. 125, 127A, and Econ. 128.	
Secretarial: Com. 5A-5B (placement exam. before enrollment. Should be taken in sophomore year).		Secretarial: Com. 113A-113B.	
Supervision and Mgmt.: Any 9 units selected from Com. 20, 21, 24, 25, or 27.		Education requirements: ----	26
General college requirements: ----	34-40	Health Educ. 151, for Teachers ----	(2)
P. E. (activity courses) ----	(2)	Educ. 184A, Sec. Sch. ----	(4)
Engl. 8, Bus. Engl. ----	(3)	Educ. 184B, Dev. and Learning ----	(4)
Engl. 2, Freshman Lit. ----	(3)	Educ. 184C, Teaching Process ----	(4)
Health Educ. 21, Prin. ----	(2)	Educ. 100B-BE, Obj. and Curric. in Bus. Educ. ----	(3)
Psych. 1, General ----	(3)	Educ. 100B-T, Methods in Typing ----	(1)
Geog. 1, Elements (a natural science) ----	(3)	Methods in one of the following subfields: ----	(2)
Geog. 10, Economic (a social science) ----	(3)	Educ. 100B-B, Acctg. ----	
Natural Science (in addition to Geog. 1) ----	(6-9)	Educ. 100B-ME, Merch. ----	
Econ. 1A-1B, Principles ----	(6)	Educ. 100B-S, Shorthand. ----	
Social Science (in addition to Geog. 10 and Econ. 1A-1B) ----	(0-3)	Educ. 116, Directed Teach. ----	(6)
Speech 2A, Fundamentals ----	(3)	Minor ----	9
Electives ----	0-4	Electives ----	4-8
	60		60

A.B. DEGREE WITH SPECIAL SECONDARY CREDENTIAL IN MUSIC

Students intending to become applicants for this credential must show evidence of musical ability before entering the course. They must be able to play artistically upon the piano, music of the grade of the simpler *Songs Without Words* of Mendelssohn or else possess a corresponding degree of proficiency in voice or an orchestral instrument. No credit is given to music majors for the basic courses of Music 1A and Music 7A, but if a deficiency exists in the field of general musicianship, the student will be required to take either or both of these courses without credit.

All music majors are required to enroll in one musical activity each semester. Activities should be included from both instrumental and choral groups. In special cases this requirement may be waived by petition to the Music Department. All students are required to pass examinations in applied music in order to receive credit. No credit is allowed to majors in voice or orchestral instruments for any work in piano which is below the level of artistic hymn playing.

Applicants for the Special Secondary Credential in Music must maintain a grade average of C or better in music courses.

This course leads to the A.B. degree with a Special Secondary Credential in Music which will authorize the holder to teach music in the elementary, junior and senior high schools of the State.

A maximum of 40 units in Music may be used toward the A.B. degree. Of these 40 units a maximum of 3 may come from the field of musical activities: Band, choir, chorus, glee clubs and orchestra.

General Language "B" is advised as an elective.

Lower Division	Units	Upper Division	Units
P. E. (activity courses)	2	Aesth. 102A-102B, Mus. Hist.	4
Engl. 1, Comp., and 2, Lit.	6	Music 105A-105B, Adv. Harmony ..	6
Social Science	9-12	Music 106, Counterpoint	2
Natural Science	9-12	Music, 107, Form and Analysis	2
Psychology 1, General	3	Music 119A, Instrumental Con-	
Health Educ. 21, Principles	2	ducting	1
Music 1A-1B-1C-1D, Musicianship ..	6	Music 120A, Vocal Conducting	1
Music 4A-4B, Elem. Harmony	6	Music 121A, Instrumentation	2
Music 2A, 3A, 6A, Orchestral In-		Music 111, 112, 113, 115, 126, or	
struments	3	130, Activities	3-0
Music 29 or 17, and 18, Applied		Music 117 or 118, Applied (Must	
(Must show 4 units in voice and		show 4 units in voice and 4 units	
4 units in piano. May be taken in		in piano. May be taken in upper	
lower or upper division.)	0-8	or lower division)	8-0
Music 9, 10, 11, 12, 13, 14, 15, 20,		Minor	9
25, 26, or 30, Activities	0-3	Health Educ. 151, for Teachers	2
Aesth. 1A-1B, Survey	4	Educ. 184A, Sec. Sch.	4
Minor (English, social science, or		Educ. 184B, Devel. and Learning ..	4
natural science recommended) ..	0-6	Educ. 184C, Teaching Process	4
		Educ. 117A, Elem. Mus. Educ.	2
		Educ. 145, Organization and Admin.	
		of Mus. Educ.	2
		Educ. 100B-MU, Methods in music	
		major and in minor subject	4
		Educ. 116, Directed Teaching	6
			60

A.B. DEGREE WITH SPECIAL SECONDARY CREDENTIAL IN PHYSICAL EDUCATION (MEN)

This course leads to the A.B. degree and to the Special Secondary Credential in Physical Education which entitles the holder to teach physical education in senior high, junior high and elementary schools.

Men majoring in physical education must register for Professional Activities for each semester of the last three years in order to secure adequate skills, methods of teaching and proficiency in officiating. Participation in an intercollegiate sport is recommended.

Lower Division	Units	Upper Division	Units
Engl. 1, Comp., and 2, Lit.	6	Health Ed. 151, For Teachers	2
Speech 2A, Fundamentals	3	Educ. 184A, Sec. Sch.	4
Natural Science (including Biol. 1,		Educ. 184B, Devel. and Learning ..	4
Survey, or equivalent; Zoo. 8,		Educ. 184C, Teaching Process	4
Human Anatomy; Physiol. 1A		Educ. 100B-PE, Methods in P. E.	
and 1C (if laboratory course		and in minor	4
needed), Human Physiology;		Educ. 116, Directed Teaching	6
and a physical science, if needed	9-12	Physical Education	25-26
Social Science	9-12	145, 146, 147, 148, Prof.	
Psychology 1, General	3	Activ.	(8)
Health Educ. 21, Principles	2	155, Appl. Anat. and Kines. (3)	
Health Educ. 65, Com. Health	3	168, Physiol. of Exercise	(3)
Physical Educ.	10	170A or 170B, Rec'l Leader-	
P.E. 43, 44, Prof. Activ.	(4)	ship	(2)
P.E. 51, First Aid	(2)	177, Ind. Program Adapt.	(3)
P.E. 53, In Elem. Sch.	(2)	190, Adm. P.E. in Sec. Schs. (3)	
P.E. 72, Introduction	(2)	Minor	9
Minor (Engl., soc. sci. or natural		Electives	1-2
sci. May include requirements			
listed above)	0-6		
Electives	3-15		
	60		

A.B. DEGREE WITH SPECIAL SECONDARY CREDENTIAL IN PHYSICAL EDUCATION (WOMEN)

This course leads to the A.B. degree and to the Special Secondary Credential in Physical Education which entitles the holder to teach physical education in senior high, junior high, and elementary schools.

Lower Division	Units	Upper Division	Units
Engl. 1, Comp., and 2, Lit.	6	Physical Education	27
Speech 2A, Fundamentals	3	155, Appl. Anat. and Kines (3)	
Natural Science (including Biol. 1, Survey, or equivalent; Zoo. 8, Human Anatomy; Physiol. 1A and 1C (if laboratory course needed), Human Physiology; and a physical science, if needed)	9-12	156A-156B, Sports Methods (4)	
Social Science	9-12	160, Teaching Body Mech. (2)	
Psychology 1, General	3	161, Folk Dancing Materials and Adv. Techniques	(2)
Health Educ. 21, Principles	2	164A-164B, Methods in Mod- ern Danc.	(4)
Physical Education	13	168, Physiol. of Exercise	(3)
P.E. 1A, Fund. Skills	($\frac{1}{2}$)	170B, Rec'l Leadership	(2)
P.E. 2A, Folk Dancing	($\frac{1}{2}$)	177, Ind. Prog. Adapt.	(3)
P.E. 3A-3B, Mod. Dance	(1)	185, Tech. of Ind. Sports	(1)
P.E. 4, Fieldball, Soccer, and Speedball	($\frac{1}{2}$)	190, Adm. of P.E. in Sec. Sch. (3)	2
P.E. 5, Softball, Volleyball, and Hockey	($\frac{1}{2}$)	Health Educ. 151, For Teachers ..	4
P.E. 6, Basketball	($\frac{1}{2}$)	Educ. 184A, Sec. Sch.	4
P.E. 12A-12B, Adv. Mod. Dance	(2)	Educ. 184B, Devel. and Learning ..	4
P.E. 13A, Archery	($\frac{1}{2}$)	Educ. 184C, Teaching Process	4
P.E. 14A, Badminton	($\frac{1}{2}$)	Educ. 100B-PE, Methods in P.E. and in minor	4
P.E. 18A, Tennis	($\frac{1}{2}$)	Educ. 116, Directed Teaching	6
P.E. 51, First Aid and Safety	(2)	Minor	9
P.E. 53, In Elem. Sch.	(2)		
P.E. 72, Intro.	(2)		
Minor	6		
Electives	3-9		
	60		

(Recommended electives: Art 61B, Health Educ. 90, 65, Home Econ. 61A-61B, Music 1A, Phys. Educ. 11A-11B.)

A.B. DEGREE WITH SPECIAL SECONDARY CREDENTIAL IN SPEECH ARTS

The following program when satisfactory completed will lead to the A.B. degree with Special Secondary Credential in Speech Arts.

Lower Division	Units	Upper Division	Units
P.E. (activity courses)	2	Speech 150 and 176 or 179A	6
Social Science	9-12	Speech electives selected from 108, 140A, 155, 159A, 161, 182, 191, 192A or 192B	6
Natural Science	9-12	Speech electives	6
English 1, Comp., and 2, Lit.	6	Upper division electives from Eng- lish Literature	6
Psychology 1, General	3	Minor	9
Health Educ. 21, Principles	2	Health Educ. 151, For Teachers ..	2
Speech 2A-2B, 11A-11B, 60A-60B, 81	6	Education	22
Speech 55A-55B, or 56A-56B or 55A-56A or 55A-56B or 82, 83 ..	6	Educ. 184A, Sec. Sch.	(4)
Speech 1, 61A, B, C, D, or 81	3	Educ. 184B, Devel. and Learning	(4)
Speech electives	5	Educ. 184C, Teaching Proc- ess	(4)
Minor	6	100B-SA, Methods in major and minor	(4)
Electives	0-3	116, Directed Teaching	(6)
	60	Electives	3
			60

HEALTH AND DEVELOPMENT CREDENTIAL

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 Dean of Education.

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:

Lower Division	Units
Psychology 1, General	3
Speech Arts 2A, Fundamentals of Public Speaking, or equivalent	3
Speech Arts 11A or 11B, Interpretation	3
Speech Arts electives	6
Upper Division	Units
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

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, directed teaching of the mentally retarded, 3 units.
 - 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.

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:

	Units
A. Child development, mental hygiene, and counseling and guidance, including interviewing:	
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. 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. Six units selected from the following: Education 102A or Education 102D; Education 102B or Education 102C; and Education 130.
 - 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 the sections entitled: Curricula Leading to the Special Secondary Credentials and to Majors and Minors for the General Secondary Credential.

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. For a list of majors and minors, refer to the section entitled: Upper Division Requirements for the Bachelor of Arts Degree in Teacher Education.

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

RECOMMENDED PROGRAM FOR THE GENERAL SECONDARY SCHOOL CREDENTIAL

The following courses should be completed before receiving the bachelor's degree (in the order listed):

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

The graduate work must consist of a minimum of 24 semester units of upper division or graduate work including the following specific requirements:

1. At least 12 semester units must be completed at San Diego State College.
2. At least one course of graduate level work (200 number) in the major field.
3. Enough units to complete a 21 semester unit minor. Refer to the section entitled: Majors and Minors for the General Secondary Credential.
4. Professional Education—completion of the courses listed above and the following:

Education 100B, Methods of Teaching (in the major and minor subjects) (available Fall Semester only)	4
Education 250, Curricular Problems of the Secondary School	3
Education 230, Guidance Problems of the Secondary School	3
Education 316, Directed Teaching (or equivalent)	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 representatives in his major and minor teaching fields and in education.

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 section entitled: A.B. degree with 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	Units
Art 200A-200B, Special Problems in Art	4

Minor in Art

A minimum of 21 semester units, of which at least nine units shall be upper division or graduate courses, must be completed.

Lower Division	
Art A-B, Drawing and Composition	2-4
Art 6A-6B, Design	4
Art elective (Art 14A, Lettering, recommended)	0-2
Aesthetics 50, Appreciation and History of Art	2
Aesthetics 5, Art Orientation, or Art 51, Survey of Mexican Art	2
Upper Division	
Upper division electives in Art	9
Aesthetics 150, Appreciation and History of Art	2

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 section entitled: A.B. degree with 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	Units
Select four units from the following:	
Commerce 203, Secretarial Administration	2
Commerce 213, Problems in Business Education	2
Commerce 223, Problems of Distributive Business	2
Commerce 233, Administration and Supervision of Business Education	2
Commerce 260, Advanced Problem Analysis (Accounting)	2

Minor in Business Education

A minimum of 21 semester units, of which at least nine units shall be upper division or graduate courses, must be completed.

This minor is not approved as part of the requirements for the A.B. degree unless the degree and a credential are awarded simultaneously. It is recommended as a second minor area only.

Lower Division	
Commerce 14A-14B, Principles of Accounting	6
Economics 1A-1B, Principles of Economics	6
Upper Division	
Upper division commerce courses selected with approval of the departmental representative	9

Major in Chemistry

Lower Division		Units
Chemistry 1A-1B, General		10
Chemistry 5, Quantitative Analysis		3
Mathematics 7A-7B, Mathematical Analysis, or 3A-3B, Plane Analytic Geometry and First Course in Calculus, and 4A-4B, Second and Third Course in Calculus		6-12
Physics 2A-2B, General, and 3A-3B, Physical Measurements (or 4A-4B-4C, Principles)		8-12
Upper Division		
Chemistry 101, 102, 103, Organic Chemistry		10
Chemistry 105, Advanced Quantitative Analysis		3
Chemistry 110A-110B, Physical Chemistry		6
Electives in upper division chemistry, or electives in a related field approved by the departmental representative		5
Graduate Year		
Chemistry 200, Seminars		4

Minor in Chemistry

A minimum of 21 semester units, of which at least nine units shall be upper division or graduate courses, must be completed.

Lower Division		Units
Chemistry 1A-1B, General		10
Chemistry 5, Quantitative Analysis		3
Physics 2A-2B, General, and 3A-3B, Physical Measurements (or 4A-4B-4C, Principles)		8-12
Upper Division		
Chemistry 101, Organic		4
Electives in upper division chemistry selected with approval of departmental representative		5

Major in Economics

Lower Division		Units
Economics 1A-1B, Principles of Economics		6
Lower division year course in history, political science or sociology		6
Upper Division		
Economics 100A-100B, Intermediate Economic Theory		6
Economics electives, including a maximum of six units in a related field approved by the departmental representative		18
Graduate Year		
Economics 200A-200B, Seminar in the Development of Economics		4

Minor in Economics

A minimum of 21 semester units, of which at least nine units shall be upper division or graduate courses, must be completed.

Lower Division		Units
Economics 1A-1B, Principles of Economics		6
A year course in another social science area		6
Upper Division		
Economics 100A, Intermediate Economic Thought		3
Upper division economics courses selected under the supervision of the departmental representative		6

Major in English

<i>Lower Division</i>		<i>Units</i>
English 1 or 41, Composition	-----	3
One year-course from lower division English electives	-----	6
Lower division English electives	-----	6
<i>Upper Division</i>		
Upper Division English courses selected under the supervision of the departmental representative	-----	24
<i>Graduate Year</i>		
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, of which at least nine units shall be upper division or graduate courses, must be completed.

<i>Lower Division</i>		
Lower division English courses to be selected under supervision of departmental representative	-----	9
<i>Upper Division</i>		
Upper division English courses to be selected under the supervision of the departmental representative	-----	12

Minor in French

A minimum of 21 semester units, of which at least nine units shall be upper division or graduate courses, must be completed.

<i>Lower Division</i>		
French 1, 2, 3, 4, 5, 6 or equivalents	-----	15-16
History 4A-4B, History of Modern Europe, or equivalent	-----	6
<i>Upper Division</i>		
French 101A-101B, Conversation and Composition	-----	6
French Literature (select one course)	-----	3

Minor in Health Education for Men or Women

A minimum of 21 semester units, of which at least nine units shall be upper division or graduate courses, must be completed from courses listed below, and from courses in related fields, to be selected on the basis of student's vocational goal under supervision of departmental representative.

Students majoring in physical education may use this as a second minor only. Students contemplating advanced degree work should plan to complete an academic minor as well as this minor.

<i>Lower Division</i>		<i>Units</i>
Health Education 21, Principles of Healthful Living	-----	2
Physical Education 51, First Aid and Safety Education	-----	2
Health Education 65, Community Health	-----	3
Health Education 90, Physiology of Reproduction	-----	1
<i>Upper Division</i>		
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	-----	1-3

Major in History

<i>Lower Division</i>		
History 4A-4B, History of Modern Europe, or 8A-8B, History of the Americas, or 9A-9B, History of the Pacific Ocean Area	-----	6
Political Science 1A-1B, Introduction to Government, or Political Science 71A-71B, American Government and Politics, or Economics 1A-1B, Principles	-----	6
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 the courses.		
<i>Upper Division</i>		
History 199, Special Course for Advanced Students	-----	2
United States History course	-----	3-6
Select from three of the following areas with approval of departmental representative	-----	16-19
1. Ancient and Medieval		
2. Modern European		
3. Latin America		
4. Pacific Area and Far East		
<i>Graduate Year</i>		
History 270A-270B, Seminar	-----	2-2

Minor in History

A minimum of 21 semester units, of which at least nine units shall be upper division or graduate courses, must be completed. A year course in United States History must be included.

<i>Lower Division</i>		
History 4A-4B, History of Modern Europe, or 8A-8B, History of the Americas, or 9A-9B, History of the Pacific Ocean Area	-----	6
Electives chosen from anthropology, economics, geography (except Geography 1, or 3), political science, sociology	-----	6
<i>Upper Division</i>		
Upper Division History selected with approval of departmental representative	-----	9

Minor in Home Economics

A minimum of 21 semester units, of which at least nine units shall be upper division, must be completed. Candidates selecting this minor must have their programs approved by the departmental representative.

<i>Lower Division</i>		<i>Units</i>
Home Economics 5, Food Preparation	-----	3
Home Economics 11, Clothing Design	-----	3
Electives in Home Economics	-----	0-3
<i>Upper Division</i>		
Home Economics 101, Clothing Selection	-----	3
Home Economics 105, Family Meals	-----	3
Home Economics 150, Home Management	-----	3
Home Economics 170, Child Care and Development	-----	3
Electives in Home Economics	-----	0-3

Minor in Industrial Arts

A minimum of 21 semester units, of which at least nine shall be upper division courses, must be completed. The candidate must demonstrate competence in mechanical drawing. All candidates selecting this minor must have their programs approved by the departmental representative.

Lower Division

Industrial Arts 2, Mechanical Drawing	2
Select at least two courses from the following:	6
Industrial Arts 41, Elements of Metalwork	3
Industrial Arts 51, Elements of Woodwork	3
Industrial Arts 61, Elements of Electricity	3

Upper Division

Industrial Arts 121, Advanced Mechanical Drawing	3
Select at least two courses from the following:	4
Industrial Arts 141, Advanced Metalwork	2
Industrial Arts 151A-151B, Furniture Making	2
Industrial Arts 152, Finishing and Painting	2
Industrial Arts 153, Patternmaking and Woodturning	3
Electives from Industrial Arts courses selected with approval of departmental representative to complete requirement	6-8

Major in Life Science**Lower Division**

Zoology 1A-1B, General	8
Botany 2A-2B, General or 1, Introduction	4-8
Zoology 20, Human Anatomy and Physiology	3
Chemistry -A-1B, General, or 2A-2B, Fundamentals	6-10
Physics 2A-2B, General, and 3A-3B, Physical Measurements	8
Geology 1A, Physical, and Astronomy 1, Descriptive, recommended.	

Upper Division

Upper division Zoology and Botany, of which units may be from a related field with the approval of the departmental representative	24
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Graduate Year

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

Minor in Life Science

A minimum of 21 semester units, of which at least nine units shall be upper division or graduate courses, must be completed.

Lower Division

Biology 10A-10B, General Biology, or Zoology 1A-1B, General	6-8
Botany 2A-2B, General Botany, or Botany 1, Introduction	4-8
Chemistry 1A, General, or 2A-2B, Fundamentals	5-6

Upper Division

Upper division courses in Zoology and Botany to be selected with approval of the departmental representative	9
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Major in Mathematics

Units

Mathematics 3A, Plane Analytical 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; Commerce 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, six of which may be in 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

Minor in Mathematics

A minimum of 21 semester units, of which at least nine units shall be upper division or graduate courses, must be completed.

Lower Division**Pattern I**

Mathematics 7A-7B, Elementary Mathematical Analysis	6
Two courses selected from courses in related areas (See above under teaching major in mathematics)	6

or Pattern II

Mathematics D, Trigonometry (or high school equivalent for which pattern credit may be allowed)	3
Mathematics 3A, Plane 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

Upper division units in mathematics selected with the approval of the departmental representative	9
One course in each of the areas, algebra, geometry, and history of mathematics, is desirable.	

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 page 33 for the recommended program for 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, of which at least nine units shall be upper division or graduate courses, must be completed.

Lower Division

Music 1A or equivalent, and 1B, Musicianship	2-5
Music 4A-4B, Elementary Harmony	6
Aesthetics 1A-1B, Survey of Music	4
Music activities selected from Music 11, 12, 13, 15, 20, 26, 30	0-2

Upper Division

Elect 9 units with approval of departmental representative from:	
Aesthetics 102A-102B, Music History	4
Aesthetics 100, Great Music	3
Music 105A-105B, Advanced Harmony and Composition	6
Music 106, Counterpoint	2
Music 107, Form and Analysis	2
Music 119A, Instrumental Conducting	1
Music 120A, Vocal Conducting	1
Music 121A-121B, Instrumentation and Arranging	4
Music 117A-117B, Advanced Individual Study of Voice	2
Music 118A-118B, Advanced Individual Study of Piano or Organ	2

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 the section on A.B. degree with 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

Minor in Physical Education for Men

A minimum of 21 semester units, of which at least nine units shall be upper division or graduate courses, must be completed.

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

Lower Division

Physical Education 51, First Aid and Safety Education	2
Physical Education 53, Physical Education in the Elementary Schools	2
Physical Education 72, Introduction	2
Electives	2-4

Upper Division

Professional Activity courses selected with approval of departmental representative	4
Physical Education 190, Administration of Physical Education in Secondary Schools	3
Physical Education 170, 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 section on A.B. degree with 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

Minor in Physical Education for Women

A minimum of 21 semester units, of which at least nine units shall be upper division or graduate courses, must be completed.

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	$\frac{1}{2}$
Physical Education 2A, Folk Dancing	$\frac{1}{2}$
Physical Education 3A, Modern Dance	$\frac{1}{2}$
Physical Education 4, 5, 6, Team Sports	$1\frac{1}{2}$
Physical Education 53, Physical Education in Elementary Schools	$2\frac{1}{2}$
Physical Education electives	$3\frac{1}{4}$ -4

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	3-6

Major in Physical Sciences

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 nine units of professional courses in education by the date of degree candidacy.

Lower Division

Chemistry 1A-1B, General Chemistry	10
Physics 4A-4B-4C, Principles (or 2A-2B, General, and 3A-3B, Physical Measurements)	8-12
Mathematics 3A, Plane Analytic Geometry, 3B, First Course in Calculus, 4A, Second Course in Calculus (recommended 4B, Third Course in Calculus)	9-12
Biology 1, Survey	3

Upper Division

Twenty-four units in chemistry and physics, with a minimum of nine units in each of these two departments. Six units may be selected from related fields with approval of the departmental representative

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Graduate Year

Select four units from the following:

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

Major in Physics

<i>Lower Division</i>		Units
Physics 4A-4B-4C, Principles, or equivalent	12	
Chemistry 1A-1B, General	10	
Mathematics 3A-3B, Plane Analytic Geometry and First Course in Calculus	6	
Mathematics 4A-4B, Second and Third Course in Calculus	6	
<i>Upper Division</i>		
Physics 105A-105B, Analytical Mechanics	6	
Physics 110, Alternating Current Circuits	3	
Physics 102, Basic Electronics or 170, Electromagnetic Theory	3	
Physics 199, Special Study	2	
Electives from upper division physics, with a maximum of six units selected from related areas upon approval of departmental representative	10	
<i>Graduate Year</i>		
Select four units from the following:		
Physics 200, Seminars (both semesters)	2-2	

Minor in Physics

A minimum of 21 semester units, of which at least nine units shall be upper division or graduate courses, must be completed.

<i>Lower Division</i>		Units
Physics 4A-4B-4C, Principles, or equivalent	12	
Chemistry 1A-1B, General	10	
Mathematics 3A, Plane Analytic Geometry, 3B, First Course in Calculus, 4A-4B, Second and Third Course in Calculus	12	
<i>Upper Division</i>		
Upper division courses to be selected with approval of departmental representative	9	

Major in Psychology

This major can be used for a General Secondary Credential only if the candidate completes two teaching minors.

<i>Lower Division</i>		Units
Psychology 1, General	3	
Psychology 5 and 6, Principles	6	
<i>Upper Division</i>		
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	
<i>Graduate Year</i>		
Psychology 201, Seminar in Psychology	2	
Education 230, Guidance Problems in Secondary Education	3	

Minor in Recreation for Men or Women

A minimum of 21 semester units, of which at least nine units shall be upper division or graduate courses, must be completed.

Students majoring in Physical Education may use this only as a second minor. Students contemplating advanced degree work should plan to complete an academic minor as well as this minor.

<i>Lower Division</i>		Units
Physical Education 51, First Aid and Safety Education	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	
<i>Upper Division</i>		
Physical Education 165, Administration of Community Recreation	3	
Physical Education 170, Recreational Leadership	3	
Physical Education 184, Field Work in Recreation	1-3	

Major in Romance Languages

<i>Lower Division</i>		Units
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	6	
<i>Upper Division</i>		
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	
<i>Graduate Year</i>		
Spanish 201, Old Spanish	2	
Spanish 204, Seminar in Spanish-American Literature	2	

Major in Social Sciences

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 9 units of professional courses in education by the date of degree candidacy.

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 4

Major in Spanish***Lower Division***

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

Upper Division

Spanish 101A-101B, Conversation and Composition 6
Spanish 199, Comprehensive Reading and Survey 3
Upper division courses in Spanish or Spanish-American literature 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, of which at least nine units be upper division or graduate courses, must be completed.

<i>Lower Division</i>		Units
Spanish 1, 2, 3, 4, 5, 6, or equivalents	-----	15-16
History 4A-4B, History of Modern Europe, or 8A-8B, History of the Americas, or equivalent	-----	6
<i>Upper Division</i>		
Spanish 101A-101B, Conversation and Composition	-----	6
Spanish Literature (select one course)	-----	3

Major in Speech Arts

<i>Lower Division</i>		
Speech Arts 1, Voice and Diction, or 2A, Fundamentals of Public Speaking, or 2B, Extemporaneous Speaking, or 11A, Interpretation	-----	3
Speech Arts 55A-55B, Elementary Acting, or 81, Survey of Radio, and 82, Radio Announcing, or 83, Radio Acting and Directing	-----	6
<i>Upper Division</i>		
Speech Arts 150, Phonetics	-----	3
Speech Arts 154A-154B, History of the Theatre, or 155, Advanced Acting, and any first semester upper division course, or 140A-140B, Stage Design, or 179A-179B, Nervous Speech Disorders, or 192A-192B, Advanced Public Speaking	-----	6
Speech Arts 179A-179B, Nervous Speech Disorders, or 159A-159B, Stage Direction, or two courses selected from the following: 181, Radio Sales and Advertising, 182, Advanced Radio Production, 183, Radio News Writing and Broadcasting, 184, Radio Writing, or 191, Organized Discussion	-----	6
Speech Arts 108, Advanced Interpretation, or 118A or 118 B, Playwriting, or 145, Stage Lighting, or 152, Stage Costume, or 154A or 154B, History of the Theatre, or 162, Advanced Argumentation, or 176, Problems of Speech Correction and Articulation	-----	3
A maximum of six units may be selected from related fields with approval of departmental representative	-----	0-6
<i>Graduate Year</i>		
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, of which at least nine units shall be upper division or graduate courses, must be completed.

<i>Lower Division</i>		
Speech Arts 2A-2B, Fundamentals of Public Speaking and Extemporaneous Speaking; or 55A-55B, Elementary Acting; or 56A-56B, Dramatic Production; or 55A, Elementary Acting, and 2A, Fundamentals of Public Speaking, or 2B, Extemporaneous Speaking; or 55A, Elementary Acting, and 11A or 11B, Interpretation, or 1, Voice and Diction; or 81, Survey of Radio	-----	12
<i>Upper Division</i>		
Upper division Speech Arts electives selected with the approval of departmental representative	-----	9

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:

- (a) Possess a valid General Elementary Credential.
- (b) Present written evidence of two years of successful teaching experience in the elementary schools.
- (c) 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 designed by the State Department of Education and the college.
- (d) Maintain a grade point average of 1.75 in work taken subsequent to receipt of the General Elementary Credential.
- (e) Complete a minimum of 15 units of work in residence at San Diego State College.
- (f) Make formal application to the Director of Elementary Education.
- (g) Earn the recommendation of the Department of Education.

Students applying for the Elementary Administration or Supervision Credentials should register with the office of the Dean of Education and confer with the Director 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 Director 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 Dean 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:

- (a) Possess a valid General Secondary Credential.
- (b) Present written evidence of two years of successful teaching experience.
- (c) 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 designed by the State Department of Education and the college.
- (d) Maintain a grade point average of 1.75 on units under (c).
- (e) Complete a minimum of 12 units of work in residence at San Diego State College after holding the General Secondary Credential.
- (f) Make formal application to the Director of Secondary Education.
- (g) Earn the recommendation of the Department of Education.

Students applying for the Secondary Administration or Supervision Credentials should register with the office of the Dean of Education and confer with the Director 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 ELEMEN- TARY CREDENTIAL

ELIGIBILITY FOR CANDIDACY

Teachers holding the Provisional General Elementary School Credential are eligible for candidacy for the Bachelor of Education Degree. The purpose of this degree is to increase the professional competence of teachers 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 120 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.

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.

The Bachelor of Science Degree will be offered in certain curricula to be designated at a later date. Students interested in this degree should obtain supplementary information from the Office of the Registrar.

THE BACHELOR OF SCIENCE DEGREE

The Bachelor of Science Degree will be offered in certain curricula to be designated at a later date. Students interested in this degree should obtain supplementary information from the Office of the Registrar.

THE MASTER OF ARTS DEGREE

NATURE OF THE DEGREE

The Master of Arts degree is offered at San Diego State College for members of the teaching profession. Students may elect to concentrate in a subject matter major or in education. The following areas of concentration are now available:

Teaching Majors: Chemistry, commerce, 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: Psychology or educational psychology.

REQUIREMENTS

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

- 30 units of approved graduate work beyond the bachelor's degree. To earn both the general secondary credential and the master's degree usually requires 36 units of graduate work, which may include six units in directed teaching. Additional units will usually be required if the student has earned less than 12 units in education courses as an undergraduate student.
- 24 units in residence. Courses taken prior to summer session 1946 at San Diego State College, or any other California State College, may **NOT** be used as graduate work.
- 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).
- Completion of the requirements for an approved California teaching credential, or the holding of one, such as the general elementary, general secondary, junior high, and special secondary school credentials.
- Satisfactory completion of the candidate's degree program as approved by the Graduate Committee.

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.
- 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:

- Apply for admission to candidacy at the Office of the Dean of Education. 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.
- Earn and maintain a grade point average of 2.0 on all graduate work.
- 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.
- Secure adviser's approval of: (1) a complete program of study for the degree, and (2) a master's project or thesis.

GENERAL REGULATIONS

- Extension and correspondence courses are not acceptable toward the degree.
- 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.
- All candidates shall complete two units in Education 290 and one additional unit in a course in bibliography (290) in the major department.
- Each applicant shall complete a project or thesis for three units of credit.
- 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.
- 12 units of work must be earned after admission to candidacy.
- 10 units must be in courses numbered 200-299.
- 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.

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 agriculture, commerce, dentistry, education, engineering, home arts, inter-American relations, journalism, law, life science occupations, medicine, nursing, optometry, pharmacy, recreation, and veterinary science. Students desiring to modify these curricular outlines in terms of liberal arts majors should consult the advisers in the respective curricula.

PRE-AGRICULTURAL CURRICULA

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; mechanical drawing, 1 unit; foreign language, 3 units in one language.

Students should ascertain the lower division requirements of the agricultural college they expect to enter.

CURRICULUM IN PLANT SCIENCE

	Units	
	1st Sem.	2d Sem.
Freshman Year		
P.E. (activity courses)-----	$\frac{1}{2}$	$\frac{1}{2}$
Health Ed. 21, Principles-----	2	-
Chem. 1A-1B, General-----	5	5
Botany 2A-2B, General-----	4	4
Physics 2A-2B, General-----	3	3
English 1, Composition-----	-	3
Electives-----	2	1
	16 $\frac{1}{2}$	16 $\frac{1}{2}$
Sophomore Year		
P.E. (activity courses)-----	$\frac{1}{2}$	$\frac{1}{2}$
Econ. 1A-1B, Principles-----	3	3
English 2, Literature-----	-	3
Chem. 101, Elem. Organic, and 102, Laboratory-----	4	3
Geology 1A, Physical, or 2A, General-----	3	-
Bact. 1, General-----	-	4
Zoology 1A, General-----	4	-
Psychology 1, General-----	-	3
Elective-----	2	-
	16 $\frac{1}{2}$	16 $\frac{1}{2}$

CURRICULUM IN ANIMAL SCIENCE

	Units	
	1st Sem.	2d Sem.
Freshman Year		
P.E. (activity courses)-----	$\frac{1}{2}$	$\frac{1}{2}$
Chem. 1A-1B, General-----	5	5
Zoology 1A-1B, General-----	4	4
Physics 2A-2B, General-----	3	3
English 1, Comp. and 2, Lit.-----	3	3
	15 $\frac{1}{2}$	15 $\frac{1}{2}$
Sophomore Year		
P.E. (activity courses)-----	$\frac{1}{2}$	$\frac{1}{2}$
Health Ed. 21, Principles-----	2	-
Psychology 1, General-----	3	-
Econ. 1A-1B, Principles-----	3	3
Bact. 1, General-----	-	4
Botany 1, Introduction-----	4	-
Chem. 101, Intro. Organic, and 102, Laboratory-----	4	3
Zoo. 100, Embryology-----	-	3
Zoo. 20, Human Anatomy and Physiol. or 8 Human Anatomy-----	-	3
	16 $\frac{1}{2}$	16 $\frac{1}{2}$

COMMERCE CURRICULUM

The first two years of the curriculum 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. The choice of the major field should be made at the beginning of the junior year. The student then follows a program of studies that is designed to provide a vocational ability in at least one particular area: (A) Accounting; (B) Banking and Finance; (C) Business Administration; (D) Marketing; (E) Insurance; (F) Personnel Administration; (G) Office Management; and (H) Secretarial.

Lower Division			Units
	Units		Units
P.E. (activity courses)-----	2	Econ. 1A-1B, Principles-----	6
Engl. 8, Bus. Engl., and 2, Lit.-----	6	Com. 2, Math of Finance, except for Marketing, Personnel Administration, and Secretarial fields-----	3
Health Educ. 21, Principles-----	2	Com. 14A-14B, Prin., (or 16A-16B for Secretarial field)-----	6
Psychology 1, General-----	3	Com. 18A-18B, Com'l Law-----	6
Natural Science (including Geog. 1, except for Marketing field)-----	9-12	Electives-----	5-11
Hist., Pol. Sci., or Sociology-----	3-6		60
Geog. 10, Economic, except for Marketing field-----	3		

Sub-fields

Sub-fields, designated below, must include the following courses:

Marketing:		Office Management:	
Com. 20, Consumer Problems-----	3	Speech Arts 2A, Fund-----	3
Com. 24, Merchandising-----	3	Secretarial:	
Com. 25, Salesmanship-----	3	Com. A, Business Math-----	1
Com. 27, Advertising Prin.-----	3	Com. 1A-1B, Typewriting-----	6
Art 7, Line, Color, Display-----	2	Com. 5A-5B, Shorthand-----	10
Personnel Administration:		(Students knowing typewriting or shorthand must take placement examinations in these subjects before enrolling in 1A-1B or 5A-5B. It is recommended that shorthand be taken in the junior year).	
Com. 3A, Rotary Calculator-----	1		
Com. 3B, Key-driven Calculator-----	1		
Com. 3C, Printing Calculator-----	1		
Com. 20, Consumer Problems-----	3		
Psych. 11, Applied-----	3		

Upper Division

	Units
Minor (in addition to courses applied toward the major)-----	9
Major-----	24-25

For (A) Accounting; (B) Banking and Finance; (C) Business Administration; (D) Marketing; (E) Insurance; (F) Personnel Administration, the following courses must be included: Economics 111, Economic History of the United States, or 170, Government and Business, or Commerce 123, Marketing Principles; Economics 140, Statistical Methods; Commerce 121, Business Administration; and 15 units selected from one of the following groups:

- Accounting:** Com. 118A-118B, 160A-160B, 161A-161B, 162, 164A-164B, 165A-165B, 166.
- Banking and Finance:** Com. 133, 134, 137, 154; Econ. 131, 135, 142.
- Business Administration:** Com. 118A-118B, 123, 125, 126, 127A, 133, 134, 137, 153, 154, 184; Econ. 128, 135, 142, 150, 166, 170.
- Marketing:** Com. 120, 123, 124, 137, 153, 154, 184, 185, 186, 187A-187B, 188, 189, 196; Home Econ. 160A-160B.
- Insurance:** Com. 118A-118B, 125, 126, 127A-127B, 128A-128B, 128C-128D, 128E-128F, 133, 134; Econ. 133. Recommended: Econ. 170; Soc. 50, 51, 153.
- Personnel Administration:** Com. 103A, 121, 153, 154; Econ. 150, 151, 154, 185; Psych. 105A, 121, 145, 152.

For G. *Office Management*: Major: 24 units to include the following courses: Com. 103A, 105A-105B, 108, 121, 153, 154, 161A; plus nine units of directed electives selected from: Com. 113A-113B, 137, 162; Econ. 135, 140, 142, 150, 170; Psych. 121.

For H. *Secretarial*: Major: 24 units to include the following courses: Com. 103A, 105A-105B, 108, 113A-113B, 153; plus nine units of directed electives selected from: Com. 121, 123, 164A-164B, 186, 188; Econ. 111, 135, 142, 150, 170, with approval of the departmental representative.

Electives (to include minimum 40 upper division unit requirement) ----- 17-27
60

PRE-DENTAL 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 high school program should include the following subjects: Elementary algebra, 1 unit; plane geometry, 1 unit; chemistry, 1 unit; physics, 1 unit; foreign language, 3 units in one language; mechanical drawing, 1 unit.

Lower Division			
Freshman Year		Sophomore Year	
	Units 1st Sem. 2d Sem.		Units 1st Sem. 2d Sem.
P. E. (activity courses) -----	$\frac{1}{2}$ $\frac{1}{2}$	P. E. (activity courses) -----	$\frac{1}{2}$ $\frac{1}{2}$
Health Ed. 21, Principles -----	2 -	Chem. 5, Quant. Anal. -----	3 -
Chem. 1A-1B, General -----	5 5	Zoo. 1A-1B, General -----	4 4
Phys. 2A-2B, General -----	3 3	Math. C, Int. Alg., and D, Trig. -----	3 3
Phys. 3A-3B, Physical Meas. -----	1 1	Social Science (year course selected from Anth. 1A-1B, General; Econ. 1A-1B, Principles; History 4A-4B, Modern Europe or 8A-8B, the Americas, or 17A-17B, Amer. Civilization; Pol. Sci. 1A-1B, Intro. to Government -----	3 3
Engl. 1, Comp., and 2, Lit. -----	3 3	Electives (a course in public speaking is recommended) -----	3 6
Psych. 1, General -----	- 3		
Elective -----	0-2 0-1		
	16 $\frac{1}{2}$ 16 $\frac{1}{2}$		16 $\frac{1}{2}$ 16 $\frac{1}{2}$

The following courses are suggested for a third year in preparation for dentistry for those who fail to receive an acceptance from a dental college after completing the prescribed 60 units.

Upper Division			
Junior Year		Senior Year	
	Units 1st Sem. 2d Sem.		Units 1st Sem. 2d Sem.
Chem. 101, Intro. Organic, and 102, Lab. -----	4 3	Art 119 A, Ceramics (see pre-requisite) -----	2 -
Zoo. 106, Comp. Anat. of Vertebrates -----	4 -	Psych. 11, Applied -----	- 3
Zoo. 100, Embryology -----	- 4	Additional Year Course in Soc. Sci. -----	3 3
		Electives -----	3 3
			16 16

The curriculum for Dental Hygiene is essentially the same as the above for pre-dentistry.

ENGINEERING CURRICULA

The engineering program is designed to give a student a sound training in the fundamentals of 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 of specialization. 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 and development should plan to complete their education at the 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.

MINOR FIELD

Students majoring in engineering must elect a minor in one of the following fields: Chemistry, economics, mathematics, or physics.

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.

Lower Division

Courses must be included to satisfy all requirements for the A. B. degree pending final approval for the requirements of the B. S. degree. See section entitled: Lower Division Requirements for all Curricula.

Lower Division			
Freshman Year		Sophomore Year	
	Units 1st Sem. 2d Sem.		Units 1st Sem. 2d Sem.
P.E. (Activity courses) -----	$\frac{1}{2}$ $\frac{1}{2}$	P.E. (Activity courses) -----	$\frac{1}{2}$ $\frac{1}{2}$
Math. 3A, Anal. Geom. -----	3 -	Math. 4A, 2d Course Calculus -----	3 -
Math. 3B, 1st Course -----	- 3	Math. 4B, 3d Course Calculus -----	- 3
Calculus -----	- 3	Phys. 4B, Electricity -----	4 -
Phys. 4A, Mechanics -----	- 4	Phys. 4C, Heat, Sound, Light -----	- 4
Chem. 1A-1B, General -----	5 5	Econ. 1A-1B, Principles -----	3 3
Engl. 1, Freshman -----	3 -	Engr. 21, Descriptive -----	3 -
Composition -----	3 -	Engr. 23, Materials -----	- 2
H.Ed. 21, Principles -----	2 -	*Electives (see below) -----	3 4
Psych. 1, General -----	3 -		
Electives -----	- 3		
	16 $\frac{1}{2}$ 15 $\frac{1}{2}$		16 $\frac{1}{2}$ 16 $\frac{1}{2}$

* One of the following groups of courses is required, dependent upon the field of specialization desired in the upper division:

Upper Division			
For Civil Engineering		For Chemical Engineering	
	Units 1st Sem. 2d Sem.		Units 1st Sem. 2d Sem.
Engr. 1A-1B, Plane Surveying -----	3 3	Chem. 5, Quantitative Analysis -----	3 -
For Mechanical, Electrical and Aeronautical Engineering		Chem. 101, Organic Chemistry -----	- 4
Engr. 1A, Plane Surveying -----	3 -	For Engineering Economics	
Engr. 22, Machine Drawing -----	- 3	Com. 14A-14B, Accounting -----	3 3

Students should, if possible, complete all of the college lower division requirements in the sophomore year. Any not completed must be completed in the junior year.

Upper Division

All upper division requirements for the A. B. degree must be met pending final approval for the requirements of the B. S. degree. These include:

Examination in American History and United States Constitution.

Completion of a minimum of 24 upper division units for the major.

Completion of nine upper division units for a minor in one of the following fields: Chemistry, economics, mathematics, or physics.

The courses required for the engineering major include a core group plus those required for each field of specialization. These are indicated below.

The choice of field of specialization and the choice of electives must be approved by the engineering department. Students normally will submit master plans for their upper division program, for departmental approval, at the beginning of the junior year. Any subsequent deviation from this plan must be approved by the department.

Required of all engineering students:

Units			Units		
Junior Year			Senior Year		
1st Sem.	2d Sem.		1st Sem.	2d Sem.	
Engr. 102A-102B, Anal. Mechanics	3	3	Engr. 128, Engr. Thermodynamics	3	-
Engr. 100A-100B, Elec. Engineering	3	3	Engr. 105, Hydraulics	-	3
Engr. 140, Strength of Materials	-	3	Engr. 199, Senior Report	-	2

Additional requirements for various fields of specialization:

Aeronautical Engineering

Units			Units		
Junior Year			Senior Year		
1st Sem.	2d Sem.		1st Sem.	2d Sem.	
Engr. 122, Machine Design	3	-	Engr. 156, Aerodynamics	-	3
Engr. 141, Materials Engr. Lab.	-	2	Engr. 142, Stress Analysis	3	-
Math. 118A or 119 or 124	3	-	Engr. 129, Heat, Power Lab.	2	-
Engr. 101A-101B, Elec. Engr. Lab.	2	2	Econ. 131 or 150 or 170	3	3
Electives	2	3	Electives	5	5
	16	16		16	16

Chemical Engineering

Units			Units		
Junior Year			Senior Year		
1st Sem.	2d Sem.		1st Sem.	2d Sem.	
Chem. 102, Organic Chem. Lab.	-	3	Chem. 110A-110B, Physical Chem.	3	3
Engr. 141, Materials Engr. Lab.	-	2	Chem. 144A-144B, Chem. Engr.	3	3
Math. 118A or 119 or 124	3	-	Engr. 106, Hydraulics Lab.	-	2
Econ. 131 or 150 or 170	3	-	Engr. 129, Heat, Power Lab.	2	-
Electives	3	2	Econ. 131 or 150 or 170	-	3
	15	16	Electives	5	-
				16	16

Civil Engineering

Units			Units		
Junior Year			Senior Year		
1st Sem.	2d Sem.		1st Sem.	2d Sem.	
Engr. 130, Route, Constr., Survey	3	-	Engr. 106, Hydraulics Lab.	-	2
Engr. 131, Adv. Surveying	-	3	Econ. 131 or 150 or 170	3	3
Engr. 141, Materials of Engr. Lab.	-	2	Electives	9	6
Math. 118A or 119 or 124	3	-		15	16
Astr. 3, Surveyor's Astron.	3	-			
Electives	-	2			
	15	16			

Electrical Engineering

Units			Units		
Junior Year			Senior Year		
1st Sem.	2d Sem.		1st Sem.	2d Sem.	
Engr. 101A-101B, Elec. Engr. Lab.	2	2	Phys. 107, Elect. Measurements	-	2
Engr. 141, Materials Engr. Lab.	-	2	Phys. 102, Electronics	3	-
Math. 118A or 119 or 124	3	-	Engr. 129, Heat, Power Lab.	2	-
Econ. 131 or 150 or 170	3	-	Econ. 131 or 150 or 170	-	3
Electives	2	3	Electives	8	6
	16	16		16	16

Mechanical Engineering

Units			Units		
Junior Year			Senior Year		
1st Sem.	2d Sem.		1st Sem.	2d Sem.	
Engr. 101A-101B, Elec. Engr. Lab.	2	2	Engr. 122, Machine Design	3	-
Engr. 141, Materials of Engr. Lab.	-	2	Engr. 129, Heat, Power Lab.	2	-
Math. 118A or 119 or 124	3	-	Engr. 106, Hydraulics Lab.	-	2
Econ. 131 or 150 or 170	3	3	Engr. 145, Internal Combust. Engr.	-	3
Electives	2	-	Electives	8	6
	16	16		16	16

Engineering Economics

Units			Units		
Junior Year			Senior Year		
1st Sem.	2d Sem.		1st Sem.	2d Sem.	
Com. 121, Business Admin.	-	3	Econ. 170, Gov't and Business	3	-
Econ. 133, Corp. Finance	3	-	Econ. 150, Labor Problems	3	-
Com. 18A, Commercial Law	3	-	Econ. 131, Public Finance	-	3
Econ. 140, Statistics	-	3	* Electives	6	8
* Electives	3	-		15	16
	15	15			

* Electives must include at least one of the following engineering laboratory courses: 101A, 101B, 106, 129, 141.

Electronics Engineering

Units		Units	
1st Sem.	2d Sem.	1st Sem.	2d Sem.
Junior Year		Senior Year	
Phys. 102, Basic Electronics	3	Engr. 124 or Phys. 124	
Engr. 104 or Phys. 104, Commun.	3	Radio Meas.	2
Phys. 122, Electronics Lab.	2	Engr. 150, Industrial Electron.	2
Math. 118A or 119 or 124	3	Phys. 152, Advanced Electronics	2
Econ. 131 or 150 170	3	Phys. 107, Elect. Measurements	2
Engr. 101A, Elect. Engr. Lab.	2	Econ. 131 or 150 or 170	3
	16	Engr. 101B, Elect. Engr. Lab.	2
	15	Electives	3
			16

PRE-FORESTRY CURRICULUM

Students desiring to enter professional training in forestry should ascertain the entrance requirements of the college to which they expect to transfer and should make whatever changes in the following suggested pre-forestry courses that may seem desirable in satisfying the requirements of that college.

The high school program should include the following subjects: English, 4 units; Elementary Algebra and Plane Geometry, 2 units; Intermediate Algebra, 1 unit; Solid Geometry, $\frac{1}{2}$ unit; Trigonometry, $\frac{1}{2}$ unit; Physics, 1 unit; Chemistry, 1 unit; History, 1 unit; Geometrical Drawing, 1 unit; foreign language, 2 to 4 units, preferably German or French.

Units		Units	
1st Sem.	2d Sem.	1st Sem.	2d Sem.
Freshman Year		Sophomore Year	
P.E. (activity courses)	$\frac{1}{2}$	P.E. (activity courses)	$\frac{1}{2}$
Chem. 1A-1B, General	5	Physics 2A-2B, General	3
Botany 2A-2B, General	4	Physics 3A-3B, Phys. Meas.	1
Engr. 1, Comp., and 2, Lit.	3	Engr. 1A-1B, Plane Surveying	3
Math. 3A, Plane Anal. Geom.	3	Econ. 1A-1B, Principles	3
Math. 3B, first course in Calculus	3	Geology 2A, General	2
	15 $\frac{1}{2}$	Health Ed. 21, Principles	2
	15 $\frac{1}{2}$	Psychology 1, General	3
		Chem. 101, Intro. Organic	4
			16 $\frac{1}{2}$

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 Arts and Sciences. (For specific information on the *general major*, refer to the section entitled: Upper Division Requirements for the Bachelor of Arts Degree in Arts and Sciences.) By appropriate selection of courses, the student may prepare for the fields of journalism, radio, community recreation, home service in industry, merchandising, and several phases of social work.

The outline of courses listed below is suggested as a plan for the *general major* with Home Economics as a field of concentration.

Units		Units	
1st Sem.	2d Sem.	1st Sem.	2d Sem.
Freshman Year		Sophomore Year	
P.E. (activity courses)	$\frac{1}{2}$	P.E. (activity courses)	$\frac{1}{2}$
Engr. 1, Comp., and 2, Lit.	3	Home Econ. 61A-61B, Nutrition	3
Psychology 1, General	3	Home Econ. 5, Food Preparation	3
Health Educ. 21, Principles	2	Home Econ. 10, Clothing	3
Chem. 2A-2B, General	3	Soc. 50, Contemp. Soc. Prob.	3
Home Econ. 1, Home and Fam. Life	3	Soc. 51, Principles	3
Electives (see lower division requirements)	6	Electives (complete lower division requirements)	6
	15 $\frac{1}{2}$		15 $\frac{1}{2}$

Prepare for U. S. History-Constitution requirement for graduation.

Suggested electives for the first two years: Biol. 10A-10B or 1; Zoo. 20; Physics 2A-2B; Speech Arts 2A-2B; History 17A-17B; Health Educ. 90; Art 6B, 61B.

Upper Division

Home Economics courses to satisfy the general major in home arts should be selected from the following:

Units		Units	
1st Sem.	2d Sem.	1st Sem.	2d Sem.
Home Econ. 101, Clothing Selection	3	Home Econ. 160B, Non-Textiles	2
Home Econ. 105, Family Meals	3	Home Econ. 150, Home Management	3
Home Econ. 135, Marriage and Family	3	Home Econ. 170, Child Care	3
Home Econ. 160A, Textiles	2	Home Econ. 102, Child Growth and Development	3

The General Major consists of 36 upper division units representing three fields with 9 to 15 units in each field. Six units in the lower division in each field is normally required as preparation for the upper division. The two fields in addition to Home Economics should be selected in consultation with the adviser in Home Arts.

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.

Competition for opportunities in international affairs is severe. Preparation for employment as a foreign representative of an American business organization implies concentration in economics. Students pursuing this curriculum as a guide for training for the Foreign Service should include additional courses in foreign language, history, political science, geography, and economics, in order more effectively to prepare for the competitive comprehensive examinations required for appointment to the Service and for entrance to the Foreign Officers Training School at Washington, D. C.

A high school program should include three units in one foreign language, preferably Spanish.

Lower Division							
		Units				Units	
		1st Sem.	2d Sem.			1st Sem.	2d Sem.
Freshman Year				Sophomore Year			
P. E. (activity courses) ---		$\frac{1}{2}$	$\frac{1}{2}$	P. E. (activity courses) ---		$\frac{1}{2}$	$\frac{1}{2}$
Health Educ. 21, Principles		2	-	Natural Science		3	3
Engl. 1, Comp., and 2, Lit.		3	3	Econ. 1A-1B, Principles		3	3
Spanish		0-3	0-3	Pol. Sci. 1A-1B, Intro., or			
Natural Sci. (including				71A-71B, Am. Gov't		3	3
Geog. 1. See lower div.				Electives (including addi-		6	6
requirements)		3	3	tional Spanish if needed)			
Hist. 8A-8B, Americas		3	3			15 $\frac{1}{2}$	15 $\frac{1}{2}$
Psychology 1, General		-	3				
Electives		2-5	1-4				
		16 $\frac{1}{2}$	16 $\frac{1}{2}$				

Upper Division							
		Units				Units	
		1st Sem.	2d Sem.			1st Sem.	2d Sem.
Junior Year				Senior Year			
Econ. 195, Inter. Econ. Rel.		-	3	Econ. 190, Foreign Trade		-	3
Pol. Sci. 150A-150B, Inter				Econ. 198, Invest. and			
Rel.		3	3	Report		3	-
Hist. 173A-173B, Expan-				Hist. 161, Mexico and			
sion U. S.		3	3	Carrib.		3	-
Span. 104A-104B, Span.				Hist. 162, So. Am. Since			
Am. Lit.		3	3	Indep.		-	3
Econ. elective		3	-	Geog. 116, Latin America		-	3
Electives		3	3	Geog. 121, North America		3	-
Exam. in U. S. Constitution		-	-	Electives from econ., hist.,			
		15	15	pol. sci., or geog. to com-		3	3
				plete the general major		3	3
				Electives		3	3
						15	15

PRE-JOURNALISM CURRICULUM

Students desiring to emphasize journalism in working for the A. B. degree should take a general major with journalism as one of the three major fields of study. (For explanation of the general major, refer to: Upper Division Requirements for the Bachelor of Arts Degree in Arts and Sciences.)

The curriculum suggested below recognizes the widely held contention that for work in the newspaper, magazine, or publishing fields more than vocational training is needed. A competent journalist must have a broad educational background, with particular emphasis on the social sciences.

For specialized journalism (such as foreign correspondence, scientific, financial, or political reporting) the student should include specialized courses. Additional social science courses are recommended as electives.

Students preparing to transfer to other colleges for degrees in journalism should ascertain entrance requirements of the prospective college, and should mold their programs accordingly.

For students undecided upon any field of specialization within journalism the following curriculum is suggested:

Lower Division							
		Units				Units	
		1st Sem.	2d Sem.			1st Sem.	2d Sem.
Freshman Year				Sophomore Year			
P. E. (activity courses) ---		$\frac{1}{2}$	$\frac{1}{2}$	P. E. (activity courses) ---		$\frac{1}{2}$	$\frac{1}{2}$
Health Ed. 21, Principles		2	-	Journ. 51A, Elements		3	-
Engl. 1, Comp., and 2, Lit.		3	3	Journ. 51B, News Gather-			
Psych. 1, General; 5, Prin-				ing and Reporting		-	3
ciples, or 11, Applied		3	3	For. Lang. (if not completed			
Hist. 4A-4B, Mod. Eur. or				in high school)		3	3
8A-8B, Americas or 17A-				Natural Science		3	3
17B Amer. Civil (if 17A-				Econ. 1A-1B, Principles; or			
17B elected, must be in				Sociol. 50, Contemp. Soc.			
Soph. Yr.)		3	3	Prob., and 51, Principles		3	3
Natural Sci. (see lower div.				Lib. Sci. 10, Use of Library		2	-
requirements)		3	3	Journ. 92, Special Projects		1	1
Journ. 92, Special Projects		1	1	Elective		-	2
Commerce 2A, Pers. Use						15 $\frac{1}{2}$	15 $\frac{1}{2}$
Typewrit.		-	3				
		15 $\frac{1}{2}$	16 $\frac{1}{2}$				

Upper Division

On acquiring upper division status, the student should confer with his adviser to plan courses meeting specific and specialized needs and the requirements for the A. B. degree with a general major, including the U. S. Constitution and American history graduation requirements.

LABORATORY TECHNICIAN—CLINICAL, MEDICAL, OR PUBLIC HEALTH

The license for medical technologist requires five years of experience as a clinical technician to qualify for examination for licensure. The clinical laboratory technician qualifying examination for licensure requires six months apprenticeship, while the public health bacteriologist licensure requires six months in a public health laboratory or twelve months in a clinical laboratory. The student should plan his program in consultation with his adviser.

Lower Division					
Units			Units		
Freshman Year	1st Sem.	2d Sem.	Sophomore Year	1st Sem.	2d Sem.
P.E. (activity courses)-----	$\frac{1}{2}$	$\frac{1}{2}$	P.E. (activity courses)-----	$\frac{1}{2}$	$\frac{1}{2}$
Health Ed. 21, Principles-----		2	*Chem. 5, Quant. Anal.-----		3
Psychology 1, General-----	3		Bacteriology 1, General-----	4	
Chemistry 1A-1B, General-----	5	5	**Physics 2A, General-----	3	
English 1, Comp., and 2, Lit.-----	3	3	**Physics 3A, Phys. Meas.-----	1	
Zoo. 1A, General, or Biol.-----			**Physiology 1A, 1C, General-----		5
10A-10B, General-----	3-4	0-3	Foreign Lang. (if needed)-----	3	3
Social Science-----		3	Social Science-----	3	3
Electives-----		3	(See U.S. Hist.-Const. requirements)		
	15 $\frac{1}{2}$	16 $\frac{1}{2}$	Elective-----	2	2
				16 $\frac{1}{2}$	16 $\frac{1}{2}$

Upper Division					
Units			Units		
Jr. Yr.	Sr. Yr.		Jr. Yr.	Sr. Yr.	
*Chem. 101, Organic-----	4		*Zoo. 109, Hematology-----	3	
*Chem. 114, 115, 116, Biochem.-----	5	3	Electives (to satisfy A.B. or B.S. degree requirements including major and minor. Recommended: Zoo. 100, 104, 108, 126)-----	5	18
Bact. 102, 103, Bact. and Sero.-----	5	4		28	27
*Bact. 105, Bact. Metabolism-----		2			
*Bact. 106, Virology-----	2				
*Zoo. 128, Parasitology-----	4				

* Not required for Public Health Bacteriologist.

** Not required for Clinical Laboratory Technician nor Public Health Bacteriologist.

PRE-LEGAL CURRICULUM

The entrance requirements of schools of law range from two years to three and four years of pre-legal work. The lower division requirements of the arts and sciences curricula should be met in full whether the pre-legal 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.

Lower Division					
Units			Units		
Freshman Year	1st Sem.	2d Sem.	Sophomore Year	1st Sem.	2d Sem.
P.E. (activity courses)-----	$\frac{1}{2}$	$\frac{1}{2}$	P.E. (activity courses)-----	$\frac{1}{2}$	$\frac{1}{2}$
Health Ed. 21, Principles-----		2	Natural Science (if needed to complete requirements)-----	3	3
Foreign Lang. (if needed)-----	3	3	Econ. 1A-1B, Principles-----	3	3
Natural Science (see lower division requirements)-----	3-6	3-6	Philosophy (6 units selected from 1A-1B, 3A-3B, 20)-----	3	3
Engl. 1, Comp., and 2, Lit.-----	3	3	Pol. Sci. (6 units selected from 1A-1B, 71A-71B)-----	3	3
Com. 14A-14B, Accounting-----	3	3	Electives-----	3	3
Psychology 1, General-----	3			15 $\frac{1}{2}$	15 $\frac{1}{2}$
Electives-----		4			
	15 $\frac{1}{2}$	15 $\frac{1}{2}$			

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 pre-legal adviser. These courses are not to be considered as general electives.

The student must complete a master plan approved by the pre-legal 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

Students planning to enter any of the terminal curricula listed below should include in their high school program the following subjects: elementary algebra, 1 unit; plane geometry, 1 unit; chemistry, 1 unit; physics, 1 unit; French or German, 3 units.

Lower Division					
Units			Units		
Freshman Year	1st Sem.	2d Sem.	Sophomore Year	1st Sem.	2d Sem.
P.E. (activity courses)-----	$\frac{1}{2}$	$\frac{1}{2}$	P.E. (activity courses)-----	$\frac{1}{2}$	$\frac{1}{2}$
Engl. 1, Comp. and 2, Lit.-----	3	3	Botany 2A-2B, General, or Botany 1-----	4	4
Zoo. 1A-1B, General-----	4	4	Bact. 1, General-----	4	-
Social Science (see lower division requirements)-----	3	3	Psychology 1, General-----	-	3
Chem. 1A-1B, General-----	5	5	Speech 2A, Fundamentals-----	3	-
	15 $\frac{1}{2}$	15 $\frac{1}{2}$	Social Science (complete lower div. requirements)-----	3	3
			Electives (see lower div. requirements)-----	2	6
				16 $\frac{1}{2}$	16 $\frac{1}{2}$

Prepare for U. S. History-Constitution graduation requirement.

Upper Division

Work in the upper division should be planned in consultation with the Chairman of the Division of Life Sciences. A terminal curriculum is offered leading to the following occupational fields: Entomology, fish and game, and wild life. Courses may be selected from those listed below.

WILD LIFE, FISH AND GAME

General Entomology	Taxonomy of Plants
Economic Entomology	Microtechnique
Medical Entomology	Mammalogy
Systematic Entomology	Ornithology
Cold Blooded Vertebrates	Economic Biology
Parasitology	Organic Chemistry
General Physiology	Statistics
Ecology	Public Administration

PRE-MEDICAL CURRICULUM

The entrance requirements of medical colleges ordinarily range from three to four years of pre-medical 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 pre-medical work should include an arrangement of courses to meet the requirements of the medical college which the student expects to enter.

A student who is pursuing a four-year pre-medical curriculum should major in chemistry or zoology in his junior and senior years, and must meet all upper division requirements for the A.B. degree in the liberal arts curricula.

The high school program should include the following subjects: elementary algebra, 1 unit; plane geometry, 1 unit; chemistry, 1 unit; physics, 1 unit; French or German, 3 units. Two units of Latin are recommended.

Lower Division

Units			Units		
Freshman Year	1st Sem.	2d Sem.	Sophomore Year	1st Sem.	2d Sem.
P.E. (activity courses)-----	$\frac{1}{2}$	$\frac{1}{2}$	P.E. (activity courses)-----	$\frac{1}{2}$	$\frac{1}{2}$
Health Ed. 21, Principles-----	2	-	Zoology 1A-1B, General-----	4	4
Chem. 1A-1B, General-----	5	5	Chem. 5, Quantitative Anal.-----	3	-
Psych. 1, General-----	-	3	Soc. Sci.-----	3	3
Engl. 1, Comp. and 2, Lit.-----	3	3	French or German (if needed)-----	3	3
French or German (if needed)-----	3	3	Elective-----	3	6
Elective-----	3	2	Prepare for U. S. Constitution — American history, graduation requirement.-----		
	16 $\frac{1}{2}$	16 $\frac{1}{2}$		16 $\frac{1}{2}$	16 $\frac{1}{2}$

Upper Division

Units			Units		
Junior Year	1st Sem.	2d Sem.	Senior Year	1st Sem.	2d Sem.
Phys. 2A-2B, General-----	3	3	Upper division requirements and electives for the major in chemistry or zoology, the minor and the degree-----	15	15
Phys. 3A-3B, Physical Measure-----	1	1		15	15
Chem. 101, Intro. Organic, and 102, Organic Chem. Laboratory-----	4	3			
Zool. 100, Embryology-----	-	4			
Zool. 106, Comp. Anat. of the Vertebrates-----	4	-			
Electives-----	4	4			
	16	15			

PRE-NURSING CURRICULUM

A student who plans to complete a curriculum in nursing leading to a degree and a certificate in nursing in another collegiate institution should ascertain the lower division requirements of that institution.

The high school program should include the following subjects: elementary algebra, 1 unit; plane geometry, 1 unit; chemistry, 1 unit; physics, 1 unit; French or German, 3 units; domestic science (foods), 1 unit; 2 units of Latin are recommended. See separate bulletin for Bachelor of Science Degree in Nursing Education.

Units			Units		
Freshman Year	1st Sem.	2d Sem.	Sophomore Year	1st Sem.	2d Sem.
P.E. (activity courses)-----	$\frac{1}{2}$	$\frac{1}{2}$	P.E. (activity courses)-----	$\frac{1}{2}$	$\frac{1}{2}$
Health Educ. 21, Principles-----	-	2	Psych. 1, Gen., and 11, Applied-----	3	3
Biol. A, Solutions and Dosage-----	2	-	Econ. 1A-1B, Prin., or Sociol. 50, Contemp. Soc. Prob., and 51, Principles-----	3	3
Chem. 2A-2B, Fundamentals, or 1A, General-----	3-5	0-3	Bacteriology 1, General-----	4	-
Home Econ. 61A-61B, Nutrition-----	-	3	Physiology 1A, 1C, Human Physiology-----	-	5
Engl. 1, Comp., and 2, Lit.-----	3	3	Zoology 8, Human Anatomy-----	3	-
French or German (if needed)-----	3	3	Electives-----	3	5
Electives-----	3-6	2-5		16 $\frac{1}{2}$	16 $\frac{1}{2}$
	16 $\frac{1}{2}$	16 $\frac{1}{2}$			

PRE-OPTOMETRY CURRICULUM

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.

The following curriculum prepares for junior standing in university schools of optometry. Student should consult the catalog of the school to which he expects to transfer.

Freshman Year	Units		Sophomore Year	Units	
	1st Sem.	2d Sem.		1st Sem.	2d Sem.
P.E. (activity courses) -----	$\frac{1}{2}$	$\frac{1}{2}$	P.E. (activity courses) -----	$\frac{1}{2}$	$\frac{1}{2}$
Chemistry 1A-1B, General -----	5	5	Physics 2A-2B, General -----	3	3
Engl. 1, Comp., and 2, Lit. -----	3	3	Physics 3A-3B, Physical Measure -----	1	1
Speech Arts 2A, Fundamentals -----	-	3	Psych. 1, General -----	-	3
Foreign Language (if needed) -----	3	3	Math. 3A, Plane Anal. -----	-	-
Soc. Sci. (or electives) -----	5	2	Geom. -----	3	-
	16 $\frac{1}{2}$	16 $\frac{1}{2}$	Soc. Sci. (complete requirement) -----	3	3
			Physiol. 1A, 1C, Human -----	-	5
			Health Ed. 21, Principles -----	2	-
			Chem. 101, Intro. Organic -----	4	-
				16 $\frac{1}{2}$	15 $\frac{1}{2}$

PRE-PHARMACY CURRICULUM

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.

Some colleges of pharmacy offer a four-year curriculum, others a six-year 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. At San Diego State College the following pre-pharmacy curricula are offered:

For the Four-Year Curriculum	Units		For the Six-Year Curriculum	Units	
	1st Sem.	2d Sem.		1st Sem.	2d Sem.
P.E. (activity courses) -----	$\frac{1}{2}$	$\frac{1}{2}$	Freshman year same as for the four-year curriculum.		
Engl. 1, Comp., and 2, Lit. -----	3	3	P.E. (activity courses) -----	$\frac{1}{2}$	$\frac{1}{2}$
Chemistry 1A-1B, General -----	5	5	Foreign Language (if needed) -----	0-3	0-3
Zoology 1A-1B, General -----	4	4	Social Science (recommend including Hist. 17A-17B) -----	6	6
Botany 1, Introduction -----	4	-	Physics 2A-2B, General -----	3	3
Math. 3A, Plane Anal. -----	-	-	Physics 3A-3B, Phys. Meas. -----	1	1
Geom. or Math. 1, Alg. and Trig. (Prerequisite: Math. C and D or two years of high school algebra and $\frac{1}{2}$ year of Trig.) -----	-	3	Psychology 1, General -----	-	3
	16 $\frac{1}{2}$	15 $\frac{1}{2}$	Health Ed. 21, Prin. -----	2	-
				15 $\frac{1}{2}$	15 $\frac{1}{2}$

The following courses are also commonly required or recommended: Chemistry 5, Quantitative Analysis 101, Introductory Organic 102, Organic Chemistry Laboratory, Physiology 1A, Human Physiology or Zoology 20, Human Anatomy and Physiology.

PUBLIC ADMINISTRATION CURRICULUM

The Public Administration curriculum is an adaptation of the *general major* designed for students interested in taking the junior administrative examination for entrance into local, state, or federal government service. It is also designed to prepare students for graduate work in the field of Public Administration. Students planning to enter graduate work in this field should consult with the adviser in Public Administration in planning the student program.

The outline of courses suggested below is for the purpose of guiding the student in planning the *general major*. For further information on the *general major* refer to the section entitled: Upper Division Requirements for the Bachelor of Arts Degree in Arts and Sciences.

in Arts and Sciences.

Lower Division					
Units			Units		
Freshman Year	1st Sem.	2d Sem.	Sophomore Year	1st Sem.	2d Sem.
P. E. (activity course) ----	$\frac{1}{2}$	$\frac{1}{2}$	P. E. (activity courses) ---	$\frac{1}{2}$	$\frac{1}{2}$
Health Educ. 21, Prin. ----	-	2	Pol. Sci. 71A-71B, Am. ----	-	-
Engl. 1, Comp., and 2, Lit. ----	3	3	Gov't -----	3	3
Psych. 1, Gen., and 5, Prin. ----	3	3	Econ. 1A-1B, Principles ----	3	3
Geog. 1, Elements (Nat. Sci.) ----	3	-	Hist. 17A-17B, Am. -----	-	-
Foreign language (if needed) ----	3	3	Civilization -----	3	3
Electives (see lower div. requirements) ----	3	4	Electives (to include Math C, or equivalent, and completion of lower div. requirements) ----	6	6
	15 $\frac{1}{2}$	15 $\frac{1}{2}$		15 $\frac{1}{2}$	15 $\frac{1}{2}$

Upper Division						
			Units			
			1st	2d		
			Sem.	Sem.	1st	2d
Junior Year					Sem.	Sem.
Pol. Sci. 140A-140B, Prin.						
Pub. Admin.	3	3				
Econ. 131, Pub. Finance....	-	3				
Econ. 140, Statistics	3	-				
Soc. Sci. (Upper div. courses to apply toward the third field for the general major, to be selected in consulta- tion with adviser)	3	3				
Electives	6	6				
	15	15				

RECREATION CURRICULUM

The curriculum in recreation is arranged under the plan of the general major to provide a program to train for recreation and camp leadership, work with youth groups, and related activities. See description of the general major in section entitled: Upper Division Requirements for the Bachelor of Arts Degree in Arts and Sciences.

Consultation with an adviser in the Department of Physical Education is advised in selecting courses and fields of study for the general major.

Lower Division		Upper Division	
	Units		Units
Health Ed. 21, Principles	2	General Major	36
Phys. Educ.	7½-8	1. Sociology. 9-15 units selected from:	
Activity courses: 3 for men; 6 for women, selected from the following: 2A, 3A, 3B, 4, 5, 6, 9, 11A, 13, 14, 18		173, Criminology and Penology	(3)
Phys. Ed. 43, Prof. Act. (Men)	(2)	*174, Juvenile Delinquency	(3)
Phys. Ed. 51, First Aid	(2)	190, Fields of Social Work	(3)
Phys. Ed. 53, Phys. Ed for Elementary Schools	(2½)	110, Race Relations	(3)
Soc. Sci. (to include Sociol. 50, Contemp. Soc. Prob., and 51, Principles)	12	*185, Comm. Welfare Org.	(3)
Psych. 1, General	3	*187, Urban Sociology	(3)
Foreign Lang. (if two years not completed in high school)	6	2. Physical Education. 9-15 units selected from:	
Natural Sci. (Phy. Sci. 10, Photography, or Astronomy 1, Descriptive, Botany 4, Calif. Plants, Geol. 2A, General. Include laboratory science if needed)	12	145, Prof. Act. (men) or 156A-156B (women)	(2)
Engl. 1, Comp., and 2, Lit.	6	146, Prof. Act. (men) or 161 (women)	(2)
Speech Arts 2A, Fundamentals	3	*165, Community Recreation	(3)
Electives	8-8½	*170A-170B, Recreational Leadership	(4)
Prepare for U. S. Constitution and American History graduation requirements.		*183A-183B, Field Work in Recreation	(3-6)
	60	3. Select a third field for the general major from the following: Speech Arts, psychology, art, music, education, biological science, after consultation with adviser. (9-15)	
		Psych. 106 or Educ. 102B-102C	3-6
		Psych. 145	3
		Educ. 174, Audio-Visual-Radio Educ.	2
		Electives	13-16
			60

* These courses are required.

PRE-SOCIAL 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 outline of courses below meets the requirements for the general major. For description of the general major, refer to the section entitled: Upper Division Requirements for the Bachelor of Arts Degree in Arts and Sciences.

The following subjects should be completed in high school: elementary algebra, 1 unit; plane geometry, 1 unit; intermediate algebra, 1 unit; foreign language, 3 units in one language.

Lower Division			Units		
			1st Sem.	2d Sem.	
Freshman Year					
P. E. (activity courses)	½	½			
Engl. 1, Comp., and 2, Lit.	3	3			
Biol. 10A-10B, General	3	3			
Foreign Lang. (if needed)	3	3			
Psych. 1, Gen., and 11, Applied	3	3			
Electives (include natural science requirements. Recommended: Speech 2A-2B, Fund.)	3	3			
	15½	15½			
Sophomore Year			1st Sem.	2d Sem.	
P. E. (activity course)	½	½			
Econ. 1A-1B, Principal	3	3			
Soc. 50, Contemp. Soc. Prob.	3	3			
Soc. 51, Principles	-	3			
Pol. Sci. 1A-1B, Intro., or 71A-71B, Am. Govt.	3	3			
Health Educ. 21, Principles	2	-			
Electives (include natural science, if needed. Recommended: anthropology)	4	6			
	15½	15½			

Prepare for U. S. History-Constitution graduation requirement.

Upper Division		Units	
	Units		Units
Soc. 103, Elem. Soc. Statistics	3	Psych. 151, Clinical Appraisal	3
Soc. 187, Urban Sociology	3	Pol. Sci., six units selected from:	6
Soc. 190, Fields of Soc. Work	3	140A-140B, Prin. Public Admin.	(3)
Soc. elective	3	or 142, State Govt.	(3)
Econ., nine units selected from:	9	143, Mun. and Co. Govt.	(3)
150, Labor Problems	(3)	Zoo. 165, Human Heredity, or 155, Genetics	(3)
170, Govt. and Business	(3)	Upper division elective	4
185, Soc. Insurance	(3)	Additional electives	20
195, Inter. Econ. Relations	(3)		
102, Comp. Econ. Systems	(3)		
131, Public Finance	(3)		
Psych. 145, Social Psychology	3		60
Psych. 150, Abnormal Psychology	3		

PRE-VETERINARY CURRICULUM

Most colleges of veterinary medicine require but one year (32 units) of pre-veterinary college work. There are a few colleges which require two years and it is best to consult the bulletin of the college to which admission is desired for special requirements.

	Units			Units	
	1st Sem.	2d Sem.		1st Sem.	2d Sem.
Freshman Year			Sophomore Year		
P. E. (activity courses) ----	1	1	P. E. (activity courses) ----	1	1
Chemistry 1A-1B, General -	5	5	Physics 2A-2B, General ----	3	3
Zoology 1A-1B, General ----	4	4	Chem. 101, Intro. Organic --	4	-
English 1, Comp., and 2, Lit.	3	3	Zoo. 100, Embryology ----	-	4
Psychology 1, General ----	3	-	Statistics (offered in Econ.,	-	-
Health Educ. 21, Principles	-	2	Psych., or Soc.) ----	3	-
Electives ----	3	2	Social Science ----	3	3
	16½	16½	Electives (recommended:		
			Math, Foreign Lang.,	3	6
			Entomology) ----	-	-
				16½	16½

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

Freshmen are not admitted to upper division courses.

A sophomore may enroll in an upper division course for lower division credit provided he has earned an average grade of not less than 1.5 in all college work undertaken, and provided he receives the instructor's permission to enroll in the course.

A second semester sophomore may enroll in an upper division course for upper division credit without the foregoing grade limitations provided the units earned in the upper division course or courses are in excess of the 60 units required in the lower division.

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 Arts and Sciences or the Dean of Education.

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

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.

PREREQUISITIES

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.

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 and in music 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, the general junior high school, and the special secondary credentials. For specific information, refer to the outlines of requirements for these credentials.

Lower Division Courses

1A-1B. Survey of Music (2-2) Year, I

Correlation of music and other arts. Elements, structure, instrumental timbre of music. Folk music of various countries. Attendance required at local concerts. Previous musical background not required. No credit for music majors.

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.

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.

51. Survey of Mexican Art (2) I

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

52A-52B. Survey of Oriental Art (3-3) Year, I, II

A study of the art of the great cultures of the Orient. (52A is a prerequisite for 52B.)

Upper Division Courses

100. Great Music (3) Summer

A listening course designed especially for the layman and concert-goer. Masterpieces of instrumental and vocal music will be performed by means of recordings and by local musicians. A study of artistic trends and their effect upon musical composition and performance. Correlation of musical art and other arts. No prerequisites. No credit for music majors.

102A-102B. Music History (2-2) Year, I

The various movements in the development of music as related to the other arts. The chronological development of the art of music with particular emphasis on the larger works. Considerable attention is given to the works of modern composers. Many symphonic works are studied from the orchestral scores. Music majors are required to complete additional assignments for full credit. Prerequisite: Aesthetics 1A or 1B.

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.

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.

162. History and Philosophy of the Dance (2) I (Offered 1951-52)

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.

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, 9 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 general junior high school, 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.

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.

54. Social Anthropology (3) II

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

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

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

152. World Ethnography (3) I (Not offered in 1950-51)

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 (Not offered in 1950-51)

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.

165. Ethnology and Race Psychology (3) I (Not offered in 1950-51)

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 (3) I, II

ART

IN THE DIVISION OF FINE ARTS

Major

A *major in arts and sciences* is offered in art. Every student who plans to major in art, whether under the liberal arts program or the teacher training program, should complete the following basic courses: Aesthetics 5 or 51, and 50, Art A-B, 6A-6B, and 14A. Under the liberal arts program 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 four units of art electives; upper division: Aesthetics 150, Art 106A or B or C, 106D, 111A, 117A-117B, 119A-119B, and four units of art electives. This program points 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 4 115B, 116A-116B, 117A, and 6 units of art electives. This program points 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 credential and the special secondary credential. Students planning to teach art in the secondary schools should add to the list of basic courses required of all art majors the following courses: Lower division: Art 61A-61B, and six units of art electives; upper division: Aesthetics 150,

Art 116A, 112A, 106A, 119A, 195, and six units of art electives. Speech Arts 140A should also be completed. For further information, refer to the outlines of requirements for the special secondary and general secondary credentials.

Minor

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

A *teaching minor* is offered in art for the general secondary, the general junior high school, and the special secondary credentials. Art may be offered only as a second teaching minor for the general elementary and the kindergarten-primary credentials. For specific information, refer to the outlines of requirements for 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.

	Units
Aesthetics 5, Art Orientation	2
Aesthetics 50, History and Appreciation of Art	2
Aesthetics 51, Survey of Mexican Art	2
Aesthetics 52A-52B, Survey of Oriental Art	6
Art 8, Costume and Home-furnishing	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

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.

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.)

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-112B. Design and Composition (2-2) Year, I, II

Imaginative organization of space by means of color, dark and light, perspective, and textures of various materials. Prerequisites: Art A-B, 6A-6B.

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

Painting from nude and costume models and advanced composition in oil. Portraiture. 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. Special Studies

A student with the necessary grade point average may apply for work in an upper division art course and register for Art 166, Special Studies. (See Honor Group.)

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.

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.

Art 199. Special Problems in Art

Admission by permission of chairman of department.

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 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 general junior high school, the special secondary, the general elementary, and the kindergarten-primary credentials. For specific information, refer to the requirements of the teaching minor for these credentials.

Lower Division Courses

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.
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.
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. Prerequisite: Astronomy 1 or permission of the instructor.

Upper Division Courses

101. **Principles of Astronomy (3) I**
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.
105. **Historic Development of Astronomy (3) I (Not offered in 1950-51)**
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**
Fundamental principles with applications in the fields of astronomy, physics, and engineering.
110. **Introduction to Study of Variable Stars (3) II**
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**

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 or 2) 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 high school or life sciences in high school.

Minor

A minor in arts and sciences is offered in bacteriology. Lower division requirements: Bacteriology 1, Chemistry 1A-1B. Recommended: Zoology 20 or Physiology 1A. Upper division requirements: Chemistry 101, Bacteriology 102 and 103. Recommended: Chemistry 102, 114A, 115, 116, Bacteriology 105, 106, and 199.

A teaching minor is not offered in bacteriology.

Lower Division Courses

1. **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.

Upper Division Courses

101. **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.

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

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

105. **Bacterial Metabolism (2) I**

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.

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, host-responses and methods treatment. Prerequisite: Bacteriology 102, 103, or equivalent.

199. **Special Problems (1 or 2) 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.

BIOLOGY IN THE DIVISION OF LIFE SCIENCES

Major

A *major in arts and sciences* is not offered in biology; however, courses in biology may be used as part of the *life science major in arts and sciences*. Refer to the description of the *life science major* in the section entitled: Upper Division Requirements for the Bachelor of Arts Degree in Arts and Sciences.

A *teaching major* is not offered in biology; however, Biology 10A-10B may be used for the year course required in a biological science for the *general science major* for the general junior high school credential or the *physical science major* for the general secondary credential. For specific information, refer to the outlines of requirements for these credentials.

Minor

A *minor* is not offered in biology; however, biology may be used as part of the *general science minor* for the general junior high school and special secondary credentials. For specific information, refer to the outlines of requirements for the teaching minor for these credentials.

Lower Division Courses

A. Solution and Dosage (2) I

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

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 and one hour of demonstration and discussion per week. Not open to students with credit for Biology 40, 10A-10B, Zoology 1A-1B, Botany 1 or 2A-2B.

10A-10B. General Biology (3-3) Year, I, II

A year course with three hours of laboratory per week. Designed for students not intending to specialize in botany or zoology. Not open to students with credit for Biology 1, 40, Zoology 1A, 1B, Botany 1, 2A or 2B. Biology 10A is prerequisite for 10B.

BOTANY IN THE DIVISION OF LIFE SCIENCES

Major

A *major in Arts and Sciences* is offered in botany. Lower division requirements: Botany 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 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, nine 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 general junior high, 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 the outlines of requirements for 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 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

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.

Upper Division Courses

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.

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: Biology 10A-10B 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 three hours per week laboratory or field work.

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 2A-2B, or 4.

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 2A-2B.

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. Prerequisite: Zoology 1A, Biology 1, or Biology 10B. Not open to students who have credit for Zoology 153.

155. Genetics (2) II

Principles of plant and animal genetics. Primarily for science majors. Two lectures per week. Not open to students with credit for Zoology 155. Prerequisites: Biology 10A-10B, Zoology 1A-1B or Botany 2A-2B.

156. Genetics Laboratory (2) II

Experiments and demonstrations illustrating the mechanism of heredity in plants and animals. Six hours of laboratory per week. Prerequisite: Zoology 155 or Botany 155, or concurrent registration in either. Not open to students with credit for Zoology 156.

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.

199. Special Problems (1-2) 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.

CHEMISTRY

IN THE DIVISION OF PHYSICAL SCIENCES

Major

A major in arts and sciences is offered in chemistry. Two plans are provided: One for students expecting to enter chemistry as professional chemists; the other for students intending to use chemistry in a related field. In addition, varying degrees of concentration in chemistry are available in the teaching major in physical science and in the chemical engineering option of the engineering major.

A teaching major is offered in chemistry for the general secondary credential or as part of the general science major for the general junior high school credential or as part of the physical science major for 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 chemistry. The minor must include Chemistry 1A-1B plus at least nine units of credit in upper division chemistry courses.

A teaching minor is offered in chemistry for the general secondary credential or as part of the general science minor for the general junior high, the special secondary, the general elementary, and the kindergarten-primary credentials. For specific information, refer to the outlines of the requirements for these credentials.

Curricula for Chemistry Majors in Arts and Sciences

Plan A, outlined below, is recommended for all students who intend to become professional chemists and leads to the A.B. degree. It is based upon the recommendations of the Committee for Professional Training of Chemists of the American Chemical Society, and 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.

Plan B 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 admittance to medical schools. This plan is also suitable for students interested in teaching in secondary schools who desire more intensive chemical training than that required in the physical science major.

The recommended sequence for courses for each plan is presented below. All courses except electives are required. Some variation in sequence is permissible with the consent of the faculty adviser.

A major for the B.S. degree is offered in Chemistry. The requirements are the same as those for the A.B. degree except, (1) no foreign language is required, and (2) the student's program must lead to a four year occupational objective approved by the chemistry department adviser for the B.S. degree.

	Units			Units	
	1st Sem.	2d Sem.		1st Sem.	2d Sem.
Plan A (For chemists)			Plan B (For related professions)		
First year			First year		
Chemistry 1A-1B	5	5	Chemistry 1A-1B	5	5
† Physics 4A	—	4	Physics 2A-2B	3	3
Mathematics 3A-3B	3	3	Physics 3A-3B	1	1
English 1 and 2	3	3	Mathematics 7A-7B	3	3
Psychology 1	3	—	English 1 and 2	3	3
Health Education 21	2	—	Physical Education	1½	1½
Physical Education	1½	1½		15½	15½
	16½	15½			
Second year			Second year		
Chemistry 5	3	—	Chemistry 5	3	—
Chemistry 101	—	4	Chemistry 101	—	4
† Physics 4B-4C	4	4	French or German 1, 2	3	3
Mathematics 4A-4B	3	3	Health Education 21	2	—
German 1, 2	3	3	Psychology 1	—	3
Social Science	3	3	* Elective	8	5
Physical Education	1½	1½	Physical Education	1½	1½
	16½	17½		16½	15½
Third year			Third year		
Chemistry 102-103	3	3	Chemistry 102-103	3	3
Chemistry 110A-110B	3	3	Chemistry 110A-110B	3	3
Chemistry 105	0-3	3-0	Chemistry 105	3-0	0-3
Minor	3-0	0-3	Minor	0-3	3-0
Social Science	3	3	Social Science	6	6
German	2-3	3-2		15	15
Elective	2	2	Fourth year		
	16	16	Chemistry elective	3	2
Fourth year			Minor	3	3
Chemistry 111	3	—	Electives	9	10
Chemistry elective	—	2		15	15
Minor	3	3			
Electives	9	10			
	15	15			

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.

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.

5. Elementary Quantitative Analysis (3) I, II

Theoretical consideration of the principles of gravimetric and volumetric analysis. Practice in standardizing reagents and analyzing samples. One lecture and quiz, and two laboratory periods per week. Prerequisite: Chemistry 1A-1B, and facility in the use of logarithms and slide rule.

* Should include preparation for minor.

† The physics sequence, 1A-1B-1C-1D, formerly offered, will fulfill the requirement of Physics 4A-4B-4C for students who started physics before September, 1949.

Upper Division Courses

101. Introductory Organic Chemistry (4) I, II

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) I, 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 (3) I, II

Advanced work in the theory and practice of volumetric, gravimetric, and electroanalysis. One lecture, one quiz, and two laboratory periods per week. Prerequisite: Chemistry 5.

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 5 and 101, or permission of the instructor.

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 5, 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 1950-51 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: Chemistry 1A-1B. Recommended Chemistry 110A-110B.

144A-144B. Principles of Chemical Engineering (3-3) Year, I

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.

155. Instrumental Methods of Analysis (2) 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. Two laboratory periods per week. Prerequisites: Chemistry 5 and 101. Chemistry 105 is recommended.

199. Special Problems (1-2) I, II

Supervised individual work in specialized branches of chemistry. Admission only by the consent of the 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.

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.

COMMERCE

IN THE DIVISION OF SOCIAL SCIENCES

Major

A major in arts and sciences is offered in commerce with concentration in one of the following sub-fields: (A) Accounting, (B) Banking and Finance, (C) Business Administration, (D) Marketing, (E) Insurance, (F) Personnel Administration, (G) Office Management, (H) Secretarial. In addition to meeting the general lower division requirements for all students (except the foreign language requirement), the following courses are required of commerce majors in the lower division: Economics 1A-1B; Commerce 2 (not required in Marketing or Secretarial sub-field); 14A-14B (students in Secretarial sub-field are required to take 1A-1B and 5A-5B); 18A-18B; Geography 1, Geography 10 the Secretarial sub-field take 16A-16B instead); English 8 and 2. or equivalent (not required of students in the Marketing sub-field); English 8 and 2. Students in the Marketing sub-field must also include Commerce 20, 24, 25, 27 and Art 7. Students in the Personnel Administration sub-field must include Commerce 3A-3B-3C, Arts 2A. Students in the Secretarial sub-field must include Commerce A, 1A-1B, 5A-5B. Upper division requirements: A minimum of 24 upper division units. The following courses must be included for students majoring in (A) Accounting, (B) Banking and Finance, (C) Business Administration, (D) Marketing, (E) Insurance, and (F) Personnel Administration: Economics 111 or 170 or Commerce 123; Economics 140; Commerce 121; and 15 units selected from one of the following sub-fields:

A. Accounting: Com. 118A-118B, 160A-160B, 161A-161B, 162, 164A-164B, 165A-165B, 166.

B. Banking and Finance: Com. 133, 134, 137, 154; Econ. 131, 135, 142.

- C. *Business Administration*: Com. 118A-118B, 123, 125, 126, 127A, 133, 134, 137, 153, 154, 184; Econ. 128, 135, 142, 150, 166, 170.
- D. *Marketing*: Com. 120, 123, 124, 137, 153, 154, 184, 185, 186, 187A-187B, 188, 189, 196; Home Econ. 160A-160B.
- E. *Insurance*: Com. 118A-118B, 125, 126, 127A-127B, 128A-128B, 128C-128D, 128E-128F, 133, 134; Econ. 133. Recommended: Econ. 170, Soc. 50, 51, 153.
- F. *Personnel Administration*: Com. 103A, 121, 153, 154; Econ. 150, 151, 154, 185; Psych. 105A, 121, 145, 152.

Students majoring in (G) *Office Management* must include the following courses: Com. 103A, 105A-105B, 108, 121, 153, 154, 161A; plus nine units of directed electives selected from: Com. 113A-113B, 137, 162; Econ. 135, 140, 142, 150, 170; Psych. 121.

Students majoring in (H) *Secretarial Subfield* must include the following courses: Com. 103A, 105A-105B, 108, 113A-113B, 153; plus nine units of directed electives selected from: Com. 121, 123, 164A-164B, 186, 188; Econ. 111, 135, 142, 150, 170, with approval of the departmental adviser.

For a complete outline of the curriculum in commerce, refer to the section entitled: Preprofessional and Vocational Curricula.

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

Minor

A *Minor in arts and sciences* is offered in commerce. Lower division requirements: Commerce 14A-14B; Economics 1A-1B. Upper division requirements: nine units of upper division commerce courses selected from one group as outlined above under the major. Students who elect the marketing group must complete Commerce 24 and 25 or 27 in the lower division.

A *teaching minor* is not offered in commerce; however, certain courses in this field are required as part of the *teaching minor in business education* for the general secondary, the general junior high school, or the special secondary credential. For specific information, refer to the outlines of requirements for these credentials.

Lower Division Courses

Note: Courses in commerce may not be used to meet any part of the lower division social science requirement, nor may they be used as part of a social science major or minor.

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 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) 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) I

Development of speed in writing and transcription. Advanced dictation on letter forms, legal forms, speeches, and literary and technical material. Prerequisite: Commerce 5A-5B or equivalent. (6A is a prerequisite for 6B.)

English in Business (See English 8)

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.)

16A-16B. Secretarial Accounting (3-3) I

Course in secretarial accounting covering the principles of accounting and the application of those principles to the accounting work done by secretaries and teachers of business. Required for four-year secretarial and business education majors. (16A is a prerequisite for 16B.)

18A-18B. Commercial 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.

20. Consumer Problems (3) I

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 Commerce 120.

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.

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: Commerce 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, I**
Application of accounting practice and principles to accounting practice; the technical arrangement of accounting forms, records and reports found in business. Prerequisite: Commerce 14A or 16A. Commerce 65A is a prerequisite for 65B.
- 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 disposal 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: Commerce 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 commerce 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 Commerce 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 all the phases of marketing utilized in most distributive campaigns. Solutions of practical problems faced by producers, wholesalers, retailers and other middlemen in the marketing of their products. Prerequisite: Commerce 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: Commerce 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. Commerce 128C is a prerequisite for Commerce 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"; teacher proficiency in the analysis of cases or problems. Commerce 128E is a prerequisite for Commerce 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 Administration (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) 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 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: Commerce 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: Commerce 14A-14B.

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. Financial Statements (3) I

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

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.

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) 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: Commerce 27, or permission of instructor.

186. Store Management Problems (2) I

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: Commerce 24, or permission of instructor.

187A. Buying Techniques (2) I

Merchandising in 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: Commerce 24, or permission of instructor.

187B. Merchandising Techniques (2) I

Methods of dollar and unit control; pricing, turnover, inventory methods and control; legislation; budgets; arithmetic of merchandising; profitability of specific methods of merchandising. Prerequisite: Commerce 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: Commerce 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: Commerce 27 or permission of instructor.

196. Work Experience (2)

Supervised work in cooperating stores or offices; relationship between theory and practice in specific business conditions. (Takes place of Commerce 26.) Prerequisite: Permission of instructor.

198A-198B. Investigation and Report (1 to 3 each semester) Year, I

A comprehensive and an original study of a problem connected with business under the direction of one or more members of the commerce staff. Prerequisite: Senior standing and permission of the instructor. 198A is a prerequisite for 198B.

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. Secretarial Administration (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: Commerce 3A, Commerce 14A-14B, 121.

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: Commerce 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: Commerce 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 (3)

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 general junior high school, 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

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

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.

104A-104B. Spanish American Literature (3-3) Year, I

For a description of this course, see Spanish 104A-104B, which may be taken for credit in Comparative Literature by doing the required reading in English translation.

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.

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.

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.

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.

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 English 152A-152B.

155. Literature of the Continental Renaissance (3) II

Development of Renaissance literature in western and southern Europe. Studies in the works of Dante, Petrarch, Ariosto, Tasso, Erasmus, Calvin, Cervantes, Rabelais, Montaigne, and other significant authors.

158. Classicism in European Literature (3) I (Offered in 1951-52)

Aims, ideals, themes, influences, literary manners and methods of the period of classicism in European literatures, particularly that of France. Studies in the writings of Moliere, Racine, Descartes, Boileau, Montesquieu, Voltaire and others.

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 Stael, 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.

ECONOMICS

IN THE DIVISION OF SOCIAL SCIENCES

Major

A *major in arts and sciences* is offered in economics. Lower division requirements: Economics 1A-1B; Commerce 14A-14B; and at least one year sequence of 6 units from the following groups: Political Science 1A-1B, or 71A-71B; History 4A-4B, or 8A-8B, or 17A-17B; Psychology 1 and 5; Sociology 50-51; or Anthropology 1A-1B. Recommended: Commerce 18A-18B; Geography 1, 10; Mathematics C. Upper division requirements: A minimum of 24 upper division units including Economics 100A, 140, and 18 additional units in economics. A maximum of 6 of the additional units may be chosen from courses in a related field with the approval of the departmental representative.

A *teaching major* is offered in economics for the general secondary credential or 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 economics. The minor must include at least 15 units of work in economics, nine units of which must be from courses carrying upper division credit.

A *teaching minor* is offered in economics for the general secondary credential, or as part of the *social science minor* for the general junior high school, 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. 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: Sophomore standing. 1A prerequisite for 1B.

Upper Division Courses

- 100A. Intermediate Economic Theory (3) I, II**
Advanced economic theory with special reference to value and distribution. Special attention is given to marginal utility theory, and to the contribution of modern economic thought. Prerequisite: Economics 1A-1B.
- 100B. Intermediate Economic Theory (3) II**
Essentially a continuation of 100A, with emphasis on the income approach, employment, and the Keynesian analysis. Prerequisite: Economics 1A-1B. (Completion of Economics 100A recommended, but not a prerequisite for 100B.)
- 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**
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.
- 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.
- 128. 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.
- 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 Commerce 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.
- 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**
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**
Old age pensions, health insurance, unemployment insurance, and Social Security Act. Strength and weakness of existing systems.
- 190. Principles of Foreign Trade (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 Economic Relations (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 or 2) I, II**
Designed exclusively for seniors with a major in economics.

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 from Education 102A-102B, 102C-102D, 115A-115B with the approval of the Dean 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 Dean of Education. 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 (1) I

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:

- 100B-A, Methods in Art
- 100B-B, Methods in Accounting
- 100B-BE, Objectives and Curricula in Business Education
- 100B-E, Methods in English
- 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-PE, Methods in Phys. Ed. (Women)
- 100B-SC, Methods in 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

- 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. Not open for credit to students with credit for Home Economics 102.

- 102C. Growth and Development of the Adolescent (3) I, II

To improve understanding 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, 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.

- 112A. 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, 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 Director of Elementary or Secondary Education.

- 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 1A, or the equivalent. Not open to students who have had Music 7A.

- 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 the Elementary School (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. The summer course provides observation in the demonstration school.

123. Science in Elementary Education (3) I, 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) I, II

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, 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 1. 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, 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) I, II

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, 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.

145B-145C. Instrumental Conducting Methods (1-1) Year, I

Baton technique. Scores will be studied of works suitable for various levels of advancement for school orchestras and bands. Practical experience in conducting actual groups will be given in class.

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. Education Practicum is a unified course which deals with the interpretation and intelligent application of theory and practice in elementary education. The child and accumulated knowledge are studied as one affects the other. The psychology of learning is interpreted while the college student is immediately associated with children in the process of learning. Daily classes are held in which the psychology and philosophy of education are studied and analyzed as systems of knowledge and concurrently interpreted in reference to the actual teaching participation to which the student is assigned for one hour daily. The course includes Reading and Elementary School Methods(3); Elementary Art Education (1); Elementary Music Education (1); Language Arts (2); Arithmetic (3); Observation Audio-Visual-Radio Instruction is integrated with the course, equivalent to 2 units.

The course is taught by college teachers who supervise in the Campus Elementary School, and other faculty members.

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 Social Studies (2); Elementary Science Education (1); Elementary Art Education (1); Elementary Music Education (1); Education Psychology (learning process and theory of audio-visual education) (3); additional 4 units for General Elementary only: Curriculum in Elementary Education (2); Directed Teaching (2); Audio-Visual-Radio Instruction (0). 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 Director of Elementary Education, San Diego State College.

155. Principles of Guidance (3) I, II

A study of the basic principles of guidance and their function in the educational process.

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, 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 (2) 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

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.

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)

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. Prerequisite: Education 155, or equivalent.

232. Problems in Vocational Guidance (3) I, 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 Director of Secondary Education and instructor.
- 238. Field Work in School Guidance (3)**
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)**
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)**
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)**
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, 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)**
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, II**
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 Dean 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 Director of Secondary Education and instructor.
- 260. Federal, State, County and City School Organization, Administration and School Law (3)**
A study of the organization, administration and supervision of federal, state, city and county school systems. Includes school finance, housing, law, and business administration.
- 262. The Organization and Administration of Elementary Schools (3)**
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.
- 263. The Organization and Administration of the Secondary School (3)**
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)**
Principles and practices of supervision and methods of evaluating instruction and the curriculum in elementary education. Prerequisite: General Elementary Credential, teaching experience, Education 262, or equivalent, and permission of the instructor.
- 265. Secondary School Supervision (3)**
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) I**
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 and Business Administration (3)**
A study of public school finance at state and local levels, and an analysis of public school business administration procedures in elementary and secondary school districts. Includes study of state school law. Prerequisite: Valid Elementary or Secondary Credentials.
- 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
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)
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**
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 high 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 credit in this course.
No student can enroll in this course until he has completed at least 10 units of work in education.
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. Lower division requirements, Physics 4A-4B-4C; Mathematics 3A-3B, 4A-4B; Chemistry 1A-1B, Engineering 21, 23, or their equivalent. Upper division requirements: A minimum of 24 upper division units including the group required of all engineering students as outlined in the Engineering Curriculum in the section entitled: Preprofessional and Vocational Curricula.

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

NOTE: Courses in engineering may not be used to meet any part of the lower division natural science requirement, nor may they be used as part of a physical science major or minor.

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 Construction (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. Hydraulics (3) II

A general course in hydraulics including the fundamental principles of hydrostatics and hydrodynamics stressing design considerations of orifices, weirs, piping systems and canals. Prerequisites: Math. 4A, Physics 4A, Engr. 102A.

106. Hydraulics Laboratory (2) II

Laboratory determination of the characteristics of fluid flow through pipes, orifices, weirs; characteristics of various types of hydraulic machinery. One three-hour laboratory period and report per week. Prerequisite: Engr. 105, or taken concurrently.

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.

128. Applied Engineering Thermodynamics (3) I

The fundamental theory and principles of heat power engineering; the various types of heat power equipment and their operation, the practical application of basic theory to efficient operating practices is stressed. Prerequisites: Math. 4A, Physics 4B.

129. Heat Power Laboratory (2) I

Testing of steam generators and heat balance of same; steam turbine; reciprocating engine; internal combustion engines for heat balance; flue gases, fuel oils, lubricating oils and boiler feed water. Emphasis upon standard operating procedures. One three-hour laboratory period per week. Prerequisite: Engr. 128, or taken concurrently.

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.

131. Advanced Surveying (3) II

Special problems in surveying. Methods of geodetic surveying, map projections, U. S. public land surveys, and photogrammetry. Two lectures and one three-hour field period per week. Prerequisites: Astr. 3 (may be taken concurrently) and 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.

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. 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 as determined by examination.

Prospective majors of sophomore standing may, with the consent of the course instructor, and subject to general college regulations (credit for Upper Division and Graduate Courses is in section on Announcement of Courses), substitute six units of upper division electives for six units of required lower division work, such upper division units to be selected from the following: English 116A, 116B, 118A, 118B, 119A, 119B, 126A, 126B, 101A, 143A, 143B.

Students of Junior or Senior standing may substitute for any deficiencies in lower division requirements in English (except English 1) an equivalent number of units of upper division courses selected from the following: English 151, 116A, 116B, 120, 118A, 118B, 119A, 119B, 126A, 126B, 101A, 143A, 143B, 159.

A teaching major is offered in English for the general secondary or junior high school credential. For specific information, refer to the outlines of requirements for these credentials. English majors who have been admitted to candidacy for the general secondary credential may satisfy the foreign language requirement by one year of lower division foreign language, or equivalent, if 9 units of professional education units have been completed.

Minor

A minor in arts and sciences is offered in English. The minor must include at least 15 units of work in English, including English 1 or 41, and at least 12 units of electives, of which nine must be from courses carrying upper division credit.

A teaching minor is offered in English for the general secondary, the general junior high school, 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, giving credit toward the English major or minor or toward the Comparative Literature minor, see 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 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.

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.

2. Freshman Literature (3) I, II

A course designed to develop college reading skills through practice in the analysis of materials at varying levels of difficulty. Prerequisite: English 1 or 8.

6A-6B. The Study of Literature (3-3) Year, I

A basic course in reading imaginative literature with insight and vividness. Methods of developing an informed and trained critical attention to literary works, motion pictures, and radio presentations.

8. English in Business (3) I, II

Theory and practice of business correspondence. Business letters as applied to salesmanship; problems in writing credit and collections letters, applications for employment, adjustment letters, and sales letters. Prerequisites: English A, Cross English Test and Commerce 2A or its equivalent. (A satisfactory score on the college entrance English test may be substituted for English A.)

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.

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.

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.

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. Prerequisites: English 1 and English 2, 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. Prerequisites: English 1 and English 2, or equivalent.

63. Foundations of the Language (3) II

A study of the important features of English grammatical structure, with emphasis on present-day usage. Designed to make more significant the native language through a study of the elements which compose it.

Upper Division Courses

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.

110. Recreational Reading (1) I, II

An advanced course in the group reading of modern drama, poetry and fiction.

113. American English (3) I (Offered in 1951-52)

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.

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.

119A-119B. Nineteenth Century English Poetry (3-3) I

Semester 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. Semester II: Tennyson and Browning with their contemporaries and successors, relating English poetry to nineteenth century life and thought.

120. The Age of Milton (3) II

A study of the literature of the earlier seventeenth century, with emphasis on Jonson, Donne, and Milton. Consideration is given to the political, religious, and social backgrounds of the seventeenth century.

126A-126B. Nineteenth Century English Prose (3) I

Semester 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. Semester II: Late nineteenth century 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.
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. (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.
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."
- 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.
166. **Honors Course** (3) I, II
Special study open to members of the Honors Group in English (see The Honors Group under General Regulations). May be repeated with different materials.
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.

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) Emerson.
- 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.
230. **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.
238. **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. Lower division requirements: French 1, 2, 3, 4, 5, 6; German 1, 2, or Spanish 1, 2, or Latin 1, 2; 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 3 units may be selected from 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. An average of C grade or better is required in upper division major courses.

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 French for the general junior high school credential. For specific information, refer to requirements for this credential.

Minor

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

A *teaching minor* is offered in French for the general secondary, the general junior high school, the special secondary, the general elementary, and the kindergarten-primary credential. For specific information, refer to the outlines of requirements for these credentials.

Lower Division Courses

1. **Elementary** (3) I, II
Pronunciation, oral practice, readings on French culture and civilization, minimum essentials of grammar.
2. **Elementary** (3) I, II
Continuation of French 1. Prerequisite: French 1 or one year of high school French.
- 3, 4, 5, 6. Will take place of French C, D, in the fall semester of 1951.

10. Conversation (2) I

Practice in the spoken language; practical vocabulary, conversation on assigned topics; simple dialogues and plays. Prerequisite: French A or two years of high school French.

11. Conversation (2) II

Continuation of French 10. Prerequisite: French 10, French B, or three years of high school French.

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.

16. French Civilization (2) II

Continuation of French 15. No prerequisite.

B. Elementary (5) I (Offered for last time in Fall of 1950)

Intensive study of French grammar and syntax; daily written work discussed in class; class drill in conversational idiom and pronunciation; reading with oral discussion and resumes; diction; introduction to contemporary prose writers. Students who have had two years of French in high school should register for French B for which only four units will be allowed. For specific information, consult the chairman of the department.

C-D. Intermediate Reading (3-3) Year, I (Offered for last time in Spring of 1951)
Reading and composition; study of standard prose as a basis for class work, collateral reading with résumés and written reports; dictation. Prerequisite for C: French B or three years of high school French. Prerequisite for D: French C or four years of high school French.

SC. Scientific Reading (2) II

Reading taken from the fields of chemistry, physics, medicine, zoology, biology, etc. Outside readings of books and periodicals, with written reports. Prerequisite: French B or equivalent.

Upper Division Courses**101A-101B. Conversation and Composition (3-3) Year, I**

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 D, or its equivalent, with 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 D, or its equivalent, with 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 D, or its 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, Bordeaux, Bazin, Barrès, Romain Rolland, A. Gide, Marcel Proust, and others. Class reading, outside reading, and reports. Prerequisite: French D, or its equivalent, with grade of C.

111A-111B. Seventeenth Century Dramatic Literature (3-3) Year, I
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 D or its equivalent, with a grade of C.

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.

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.

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. Credit in this course does not count toward the 6-unit foreign language requirement.

GEOGRAPHY IN THE DIVISION OF SOCIAL SCIENCES

Major

A major in arts and sciences is offered in geography. Lower division requirements: Geography 1, 2; Geology 1A-1B. Recommended: A reading knowledge of French or German. Upper division requirements: A minimum of 24 upper division units in geography, or 18 units in geography and 6 units selected from related fields with approval of the departmental representative.

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 the outlines for requirements for these credentials.

Minor

A minor in arts and sciences is offered in geography. The minor must include at least 15 units of work in geography, 9 units of which must be from 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 general junior high school, the special secondary, the general elementary, and the kindergarten-primary credentials. For specific information, refer to requirements for these credentials.

Lower Division Courses

NOTE.—Geography 1 or 3 may not be used to meet any part of the 12-unit social science requirement. Geography 1 or 3 (but not both) may be used to meet part of the 12-unit natural science requirement.

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 lower division requirements.)

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. Aeronautical meteorology stressed in the fall semester. This course is classified as a natural science. (See lower division requirements.)

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 1950-51)

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.

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.

141. Advanced Economic Geography (3) I

A survey of the raw materials of world trade; their production and distribution as related to major geographic regions of the world. Prerequisite: Geography 1 or consent of instructor.

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 I, II (Credit to be arranged)

To be arranged after consultation with the chairman of the department. (See the Honor Group).

199. Special Studies (1-3) I, II**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, 21A-21B.

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 the outline of requirements for 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, nine units of which must be from courses carrying upper division credits.

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 general junior high school, 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. 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 2A except for one unit upon the completion of the laboratory section.)

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.

2A. General (3) I

Similar to Geology 1A but without laboratory. Emphasis upon origin and development of earth's surface features. Open to all students except those already presenting credit in Geology 1A. Two lectures and one demonstration and discussion hour weekly.

2B. Physiography of United States (3) I

A study of the land forms of the United States and their physiographic history as illustrative of universal geologic conditions. Two lectures and one discussion hour weekly. Prerequisite: Geology 1A or 2A.

21A-21B. Mineralogy (3-3) Year, I

Study of the common minerals and rocks. Use of the blowpipe, simple chemical reagents, and the petrographic microscope, but with emphasis upon sight determination. Prerequisite: High school chemistry, or equivalent.

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 2A-2B.

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.

199. Special Study (1-2) I, II

Individual work in field, library, laboratory, or museum under staff supervision. Open only to qualified students upon consultation.

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

1. Elementary (3) I, II

Pronunciation, oral practice, readings on German culture and civilization, minimum essentials of grammar.

2. Elementary (3) I, II

Continuation of German 1. Prerequisite: German 1 or one year of high school German.

3, 4, 5, 6. Will take the place of German C, D, in the Fall semester of 1951.

10. Conversation (2) I

Practice in the spoken language; practical vocabulary; conversation on assigned topics; simple dialogues and plays. Prerequisite: German A or two years of high school German.

11. Conversation (2) II

Continuation of German 10. Prerequisite: German 10, German B or three years of high school German.

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.

16. German Civilization (2) II

Continuation of German 15. No prerequisite.

B. Elementary (5) I (Offered for last time in Fall of 1950)

Pronunciation, reading and grammar, with practice in simple conversation, narration and description, both oral and written. Students who have had two years of German in high school should register for German B for which only 4 units will be allowed. For specific information, consult the chairman of the department.

C-D. Intermediate Review and Reading (2-2) Year, I

(Offered for last time in Spring 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 for C: German B or three years of high school German. Prerequisite for D: German C or four years of high school German.

SC-SD. Scientific Reading (3-3) Year, 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 SC: German B with a grade of C or three years of high school German; for SD: German SC, German C, with a grade of C, or four years of high school German.

Upper Division

101A-101B. Advanced Conversation and Composition (3-3) Year, I

(Not offered 1950-51)

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 D, or equivalent, with grade of C.

HEALTH EDUCATION

IN THE DIVISION OF HEALTH, PHYSICAL EDUCATION
AND RECREATION

Major is not offered in health education.

Minor

A minor in arts and sciences is offered in health education. The minor must include at least 15 units of work, nine units of which must be from courses carrying upper division credit. Courses will be determined in consultation between student and departmental representative.

A teaching minor is offered in health education for the general secondary, the general junior high school, and the special secondary credentials. Physical education majors may use health education as a second teaching minor only. For specific information, refer to the outlines of requirements for these credentials.

Lower Division Courses

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.

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.

Upper Division Courses

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.

Graduate Courses

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.

HISTORY

IN THE DIVISION OF SOCIAL SCIENCES

Major

A major in arts and sciences is offered in history. Lower division preparation for the major: 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 offered in history for the general secondary credential. History may also 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 history. The minor must include at least 15 units of work in history, nine units of which must be from courses carrying upper division credit including a year course.

A teaching minor is offered in history for the general secondary credential or as part of the social science minor for the general junior high school, the special secondary, the general elementary, and the kindergarten-primary credentials. For specific information, refer to the outlines of requirements for these credentials.

Explanation of Courses

NOTE: History 17A-17B does not count toward credit for a major or minor 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

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.

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.

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.

NOTE: This course is not open to freshmen.

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 fourth century A.D.

121A-121B. Medieval History (3-3) Year, I

Survey of the main events of European social, cultural, religious, political and economic history, between 500 and 1300 A.D.

131A-131B. Renaissance, Reformation and Counter-reformation (3-3) Year, I

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

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

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

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

Survey of political, constitutional, social and economic developments since 1066. Designed for pre-legal students, majors in English, and as a background for American History.

156A-156B. History of British Expansion (3-3) Year, I

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
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.
- 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
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.
- 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 1950-51 and alternate years)
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 religions, 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.

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.
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 SOCIAL SCIENCES

Major

A *major in arts and sciences* is not offered in home economics; however, students may elect a *general major* with the field of concentration in home economics. For specific information on the home arts curriculum, refer to the Home Arts Curriculum in the section entitled: Preprofessional and Vocational Curricula, and for further information on the general major, refer to section entitled: Upper Division Requirements for the Bachelor of Arts Degree in Arts and Sciences.

A *teaching major* is not offered in home economics.

Minor

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

A *teaching minor* is offered in home economics for the general secondary, general junior high, and special secondary credentials. Home economics 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

NOTE—Courses in home economics may not be used to meet any part of the 12-unit social science requirement, nor may they be used as part of a social science major or minor.

- Home and Family Life** (3) I, II
Consideration of necessary preparation for marriage, family budgets and money management; recreation, entertaining and social usage; finding a home, its furnishings and equipment with consideration of arrangement and care; child care, proper training and guidance. Open to men and women.
- Food Preparation** (3) I
Principles of food selection, preparation and service with consideration of aesthetic and nutritional values. Experience in food preparation and meal service.
- Fundamentals of Clothing** (3) I
Selection of clothing with self-analysis as a basis; wardrobe planning and buying procedures. A study of commercial patterns and principles of garment construction. One lecture and two three-hour laboratories per week.
- Clothing Design** (3) II
Selection and construction of children's and adults' garments; care, repair and make-over problems of clothing. One lecture and two three-hour laboratories per week. 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 efficiency and cost of operation. Efficient kitchen arrangement and storage space.

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.

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.

Upper Division Courses**100. Advanced Clothing Design (3) II**

Design and construction of tailored silk and wool garments, informal and formal type dresses. Costume assembling. Prerequisite: Home Economics 11 or equivalent.

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.

102. Child Growth and Development (3) I, II

This course deals with a study of the mental, emotional, social, and physical development during childhood and early adolescence. Directed observation required. Not open to students who have credit for Psychology 106 or Education 102B.

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.

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.

150. Home Management (3) I, II

Integration of the learning activity around a living situation with emphasis on cooperation and establishment of family goals. Management of time, energy, and money in relation to family living. (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.

170. Child Care and Development (3) I, II

A study of the prenatal and pre-school periods of child development. 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 lower division 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 2A; Industrial Arts 2 or 21 and 51 or 52; Industrial Arts 41 or 42, 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

NOTE: Courses in industrial arts may not be used to meet any part of the 12-unit physical science requirement, nor may they be used as part of a major in the physical sciences.

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.

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. Introductory General Shop (3) I

A general course introducing basic operations in wood, bench and sheet metal, forging, foundry, welding and electricity with special consideration given to the needs of the individual and the homemaker. One lecture and two laboratory sections per week.

32. Intermediate General Shop (2) II

Additional training in any two of the fields of wood, metal, welding, forging, or simple machining, to meet the needs and objectives of the individual. Two laboratory sections per week. Prerequisite: Industrial Arts 31 or permission of the instructor.

41. 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.)

42. 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 1950-51)

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.

141. 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 31 or 41.

143A-143B. 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 42 or permission of instructor.

146. Forging and Welding (2) (May not be offered in 1950-51)

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 31 or 41.

151A-151B. Furniture and Cabinet Making (2-2) (May not be offered in 1950-51)

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 31 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

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

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 members of the class. Two lectures per week.

JOURNALISM**IN THE DIVISION OF LANGUAGES AND LITERATURE****Major**

A *major in arts and sciences* is not offered in journalism. Students desiring major work in journalism at this college should plan for a *general major* with the field of concentration in journalism. For specific information regarding this plan, refer to the curriculum in pre-journalism in the section entitled: Pre-professional and Vocational Curricula, and to the description for the general major in the section entitled: Upper Division Requirements for the Bachelor of Arts Degree in Arts and Sciences.

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 Commerce 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 a general major or journalism minor requirements. As elective credit, such units not limited except at instructor's discretion.)

Upper Division Courses**101A. Magazine Article Writing (3) I**

The technique of the magazine article; article types; research techniques. Prerequisites: Junior standing, with average grade of B in all previous composition and journalism courses, plus permission of instructor.

101B. Magazine Article Marketing (3) II

Market analysis; slanting; the business of writing. Production of at least two full-length magazine articles, and marketing of same, required during the course. Prerequisite: Journalism 101A with grade of C or better.

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.

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.)

LATIN**IN THE DIVISION OF LANGUAGES AND LITERATURE**

Major and minor work are not offered in Latin.

Lower Division Courses**1. Elementary (3) I, II**

Study of the Latin language and Roman culture, with reading of selected prose passages.

2. Elementary (3) I, II

Continuation of Latin 1. Prerequisite: Latin 1 or one year of high school Latin.

B. Elementary (5) I (Offered for last time in Fall of 1950)

Thorough study of Latin grammar with daily written exercises and the translation of selected passages from Caesar, Cicero, and Pliny. The importance of these authors and their culture to western civilization will be considered. Students who have had two years of Latin in high school should register for Latin B for which only four units will be allowed. For specific information, consult the Chairman of the Department.

C-D. Intermediate (3-3) Year, I (Not offered in 1950-51)

Survey of Latin poetry with chief emphasis upon Vergil's *Aeneid*. Selections will be read from Catullus, Horace, Ovid, and others. Parallel European poetry will be considered. Latin B or equivalent is a prerequisite for Latin C. Latin C or equivalent is a prerequisite for Latin D.

LIBRARY SCIENCE**IN THE DIVISION OF SOCIAL SCIENCES**

Major and minor work are not offered in library science.

Lower Division Courses

NOTE.—Library science may not be used to satisfy any part of the 12-unit social science requirement, nor may it be used as part of a social science major or minor.

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.

LIFE SCIENCE**IN THE DIVISION OF LIFE SCIENCES****Major**

A major in arts and sciences is offered in life science. Lower division requirements: Zoology 1A-1B or Biology 10A-10B; Zoology 20 or Physiology 1A; Botany 2A-2B or Botany 1 or Bacteriology 1; Chemistry 1A-1B or 2A-2B; Physics 2A-2B-3A-3B. Recommended: Geology 1A, Astronomy 1. Upper division requirements: A minimum of 24 upper division units in zoology, bacteriology and botany of which 6 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 teaching major in life science is offered for the general secondary credential. A teaching major in general science is offered for the junior high school credential. For specific information refer to the outlines for this credential.

Minor

A minor in arts and sciences is offered in life science. Lower division requirements: Biology 10A-10B or equivalent; Zoology 20; Chemistry 2A-2B or 1A. Recommended: Astronomy, geology, physics. Upper division requirements: At least 9 upper division units in zoology and botany to be selected with the approval of the Chairman of the Division of Life Sciences.

A teaching minor in life science is offered for the general secondary credential. A teaching minor in general science is offered for the junior high school, special secondary, general elementary and kindergarten-primary credentials. For specific information, refer to the outlines for these credentials.

MATHEMATICS**IN THE DIVISION OF PHYSICAL SCIENCES****Major**

A major in arts and sciences is offered in mathematics. Lower division requirements: Mathematics 3A-3B, 4A. Recommended: Two or more of the following: Astronomy 1; Economics 1A-1B; Commerce 2; Engineering 1A, 21; Physics 4A-4B or 2A-2B-3A-3B; 10 units of French or German. Upper division requirements: A minimum of 24 upper division units in mathematics or 18 units in upper division mathematics and 6 upper division units from related areas. The selection of courses must be approved by the Chairman of the Department.

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 must include at least 15 units of work in mathematics, nine units of which must be from courses carrying upper division credit. The selection of courses must be approved by the Chairman of the Department.

A *teaching minor* is offered in mathematics for the general secondary, the general junior high school, 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

NOTE: Courses in mathematics may not be used to meet any part of the 12-unit natural science requirement.

- A. **Basic Mathematics (Algebra) (3) I, II**
Fundamentals of algebra and arithmetic with applications to everyday problems. For students who have had less than two years of high school mathematics or need training in this area.
- B. **Basic Mathematics (Geometry) (3) I, II**
Fundamentals of geometry including applications to everyday problems. For students who have had less than two years of high school mathematics or for students who need training in this area. Prerequisite: Mathematics A or its equivalent.
- 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.
- 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. **Plane 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, applications, and a brief treatment of solid analytic geometry. Prerequisite: Mathematics 4A. (Solid geometry is recommended). Not open for credit to students with credit for Math. 117.

7A-7B. Mathematical Analysis (3-3) Year, I

Designed for students who do not intend to prepare for a professional career in physical science or in engineering but who desire or need one year of college mathematics. Consideration is given to the processes and applications of algebra, trigonometry, and differential and integral calculus. Prerequisites: High school algebra and plane geometry. 7A is a prerequisite to 7B. Students with credit for Math. 1 or 3A will not receive credit for 7A. Students with credit for Math. 3B will not receive credit for 7B.

Upper Division Courses

104. **History of Mathematics (3) II**
History of mathematics down to early modern times. Prerequisite: Mathematics 3B or 7B.
105. **College Geometry (3) I**
A synthetic treatment of the points and lines associated with triangles and quadrilaterals, similarity, inversion, rules and compass construction, etc. Highly recommended for all teachers of high school geometry. Prerequisite: Mathematics 3B or 7B.
106. **Projective Geometry (3) I (Offered in 1951-52)**
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 (Offered in 1951-52)**
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, II**
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) I, 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 of first and second order 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-140B. **Mathematical Statistics (3-3) Year, I**
Graphical and arithmetical characterization of observed frequency distributions, theoretical discrete and continuous frequency distributions including binomial, Poisson, and normal distribution; linear and multiple correlation, large and small sample theory including Student's T, Chi-square, and the F distributions with applications. Prerequisite: Mathematics 117 or its equivalent.
199. **Special Study (1-2) I, II**
Supervised individual study in selected mathematical topics. Prerequisite: Permission of 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.

MUSIC IN THE DIVISION OF FINE ARTS

Major

A *major in arts and sciences* is offered in music. Lower division requirements: Music 1B-1C-1D, 4A-4B, 4 units of applied music (study of piano, voice, or orchestral instrument); Aesthetics 1A-1B. Upper division requirements: A minimum of 24 upper division units in music selected from the following: Music 105A-105B, 106, 107, 119A, 120A, 121A-121B, 128; 4 units of applied music, Aesthetics 102A-102B, and 4 units of music activity (Music 109, 110, 111, 112, 113, 114, 115, 125, 126, or 130). As laboratory work, each music major is required to carry one music activity per semester. It is recommended that both vocal and instrumental activities be included at some time during the college course. At least a C average in upper division music courses is necessary.

At least two months before graduation, each senior music major will present a recital before the music faculty. At this time, the faculty will select those students who are to be granted the privilege of a public recital.

A *teaching major* is offered in music for the general secondary credential and the special secondary credential in music. For specific information, refer to the outlines of requirements for these credentials.

Minor

A *minor in arts and sciences* is offered in music. The minor must include at least 15 units of work in music, 9 units of which must be from courses carrying upper division credit.

A *teaching minor* is offered in music for the general secondary, the general junior high school, 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 specific information, refer to the outlines of the requirements for these credentials.

Lower Division Courses

(Descriptions of courses in the field of music appreciation and history of music are listed under *aesthetics*.)

- 1A. **Musicianship—Fundamentals of Music** (3) I, II
The elements of music; scale construction; elementary music theory; drill in music reading both with syllables and with words; ear training, elementary music dictation. Basic course for all general elementary credential students. Music majors receive no credit toward graduation. All music majors are required to register for Section 1, only.
- 1B. **Musicianship—Music Reading and Ear Training** (2) I, II
Tonal and rhythmic dictation; rhythmic writing; sight singing. Basic course for majors and minors. Prerequisite: Music 1A.

1C-1D. **Musicianship—Advanced Music Reading and Ear Training** (2-2) Year, I
Tonal work in minor keys; modal scales; dissonant triads and seventh chords; interval feeling in all chords; rhythmic progression and elementary forms; rhythmic, melodic and harmonic dictation. Prerequisite: Music 1B. 1C is a prerequisite for 1D.

2A. **String Instruments** (1) I, II

Beginner's class in violin, viola, cello and string bass. Required of all music majors working for a Special Secondary credential unless this orchestral section is the major or minor field.

3A. **Woodwind Instruments** (1) I, II

Beginner's class in oboe, clarinet, flute and bassoon. Required of all music majors working for a Special Secondary credential unless this orchestral section is the major or minor field.

4A-4B. **Elementary Harmony** (3-3) Year, I

Scale construction, intervals, by-tones and diatonic harmonies. Transposition and original composition in the simpler forms. Prerequisites: Music 1A-1B, or the equivalent, and at least one year of piano study. 4A is a prerequisite for 4B.

5A. **Percussion Instruments—Drums** (1) I, II

Snare drum, bass drum, cymbals and small instruments of percussion group techniques from beginning work through all phases of concert and marching band requirements.

5B. **Percussion Instruments—Mallet Played** (1) I, II

Necessary technique and applied elementary theory to prepare the student in the fundamentals of playing the Tympani, Glockenspiel, Xylophone, Marimba, Vibraphone, Orchestra Bells and Chimes.

6A. **Brass Instruments** (1) I, II

Beginner's class in trumpet, French horn, baritone, trombone and tuba. Required of all music majors working for a Special Secondary credential unless this orchestral section is the major or minor field.

7A. **Music Materials for the Elementary School** (3) I, II, Summer

Study of the song material in the state music texts and in the supplementary texts. Appreciation materials applicable to the elementary school. Required course for all general elementary credential students. Prerequisite: Music 1A.

9A-B-C-D. **Treble Clef Sextette** ($\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$) I, II

Members selected by auditions from Treble Clef (Music 10).

10A-B-C-D. **Women's Glee Club—Treble Clef** ($\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$) I, II

Entrance upon examination.

11A-B-C-D. **Men's Quartet** ($\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$) I, II

Members selected by auditions from Men's Glee Club (Music 12).

12A-B-C-D. **Men's Glee Club** ($\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$) I, II

Entrance upon examination.

13A-B-C-D. **Orchestra** (1-1-1-1) I, II

Permission of the conductor required for membership.

14A-B-C-D. **Vocal Ensemble** ($\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$) I, II

Members selected by auditions from Choral Club (Music 15).

15A-B-C-D. **Choral Club** ($\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$) I, II

Entrance upon examination.

*16A-B-C-D. **Individual Study of an Orchestral Instrument** (1-1-1-1) I, II*17A-B-C-D. **Individual Study of Voice** (1-1-1-1) I, II*18A-B-C-D. **Individual Study of Piano or Organ** (1-1-1-1) I, II
Prerequisite: The ability to play artistically hymns and folk songs of the type found in the Golden Book of Favorite Songs.

* See explanation below for conditions under which credit may be given for music study under private instructors.

- 20A-B-C-D. Chorus** ($\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$) I, II
Open to anyone interested in singing standard choral works. No examination required. No public performances.
- 24A. Beginning Instrumental Ensemble** ($\frac{1}{2}$) I, II
Open to all instrumental students. Group playing of simple orchestral and band scores. Prerequisite: Music 2A, 3A, 6A, or equivalencies, one or more.
- 24B. Intermediate Instrumental Ensemble** ($\frac{1}{2}$) I, II
Continuation of group performance of orchestral and band scores of more advanced grade. Material covered will prepare the student for minor parts in either concert orchestra or symphonic band. Prerequisites: Music 24A or equivalent.
- 25A-B-C-D. Marching Band** (1-1-1-1) I, II
Permission of Conductor required for membership.
- 26A-B-C-D. Symphonic Band** (1-1-1-1) I, II
Permission of the Conductor required for membership.
- 28A-28B. Piano** (1-1) Year, I
Fundamental playing and reading technics for the pianoforte. Emphasis upon playing by ear, and the development of interpretative ability. For beginners only. No credit for music majors and minors.
- 28C-28D. Continuation of First Year Piano** (1-1) Year, I
Study of more advanced piano literature. Considerable emphasis upon ensemble piano playing and accompanying. Prerequisites: Music 28A-28B, and consent of instructor. No credit for music majors. Credit will be given to music minors. 28C is a prerequisite for 28D.
- 29A-29B. Class Voice** (1-1) Year, I
A class for beginners in the vocal field taking up the problems of breath control, tone placement, articulation and enunciation. Frequent performance before class required. Limited to 15. 29A or equivalent is a prerequisite for 29B.
- 29C-29D. Continuation of First Year Voice** (1-1) Year, I
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. Limited to 15. 29C or equivalent is a prerequisite for 29D.
- 30A-30B. Chamber Music** (1-1) Year, I
String and woodwind ensembles. The consent of the instructor necessary for admission to class.
- 31. Opera Technique** (2)
Training in the interpretation and characterization of light and grand opera. Specific work in coordination of operatic ensemble.

Upper Division Courses

(For description of courses in the field of music appreciation and history of music, see *aesthetics*.)

- 101. Survey of Harmony and Musical Form** (2)
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.
- 105A-105B. Advanced Harmony and Composition** (3-3) Year, I
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.
- 106. 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 4A-4B.

- 107. Form and Analysis** (2) II
Aural and visual analysis of music forms through a consideration of structure, harmonic content, and style. Prerequisite: Music 105A-105B.
- 109A-B-C-D. Treble Clef Sextette** ($\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$) I, II
Members selected by auditions from Treble Clef (Music 110).
- 110A-B-C-D. Women's Glee Club—Treble Clef** ($\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$) I, II
Entrance upon examination. A maximum of 2 units in glee club may be counted toward the A.B. degree.
- 111A-B-C-D. Men's Quartet** ($\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$) I, II
Members selected by auditions from Men's Glee Club (Music 112).
- 112A-B-C-D. Men's Glee Club** ($\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$) I, II
Entrance upon examination. A maximum of 2 units in glee club may be counted toward the A.B. degree.
- 113A-B-C-D. Orchestra** (1-1-1-1) I, II
Permission of the conductor required for membership. A maximum of 4 units in orchestra may be counted toward the A.B. degree.
- 114A-B-C-D. Vocal Ensemble** ($\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$) I, II
Members selected by auditions from Choral Club (Music 115).
- 115A-B-C-D. Choral Club** ($\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$) I, II
Entrance upon examination. A maximum of 2 units in choral club may be counted toward the A.B. degree.
- *116A-B-C-D. Advanced Individual Study of an Orchestral Instrument** (1-1-1-1) I, II
- *117A-B-C-D. Advanced Individual Study of Voice** (1-1-1-1) I, II
- *118A-B-C-D. Advanced Individual Study of Piano or Organ** (1-1-1-1) I, II
- 119A. Instrumental Conducting** (1) I, II
Conducting and reading of orchestral scores.
- 120A. Vocal Conducting** (1) I, II
The theory of vocal conducting together with practical experience gained from directing the college chorus. Prerequisite: Upper division music major or minor.
- 121A-121B. Instrumentation and Arranging** (2-2) Year, I
Arranging of music for full orchestra. Selected works of pupils to be performed by standard orchestras. 121A is a prerequisite for 121B.
- 124A. Beginning Instrumental Ensemble** ($\frac{1}{2}$) I, II
Open to all instrumental students. Group playing of simple orchestral and band scores. Prerequisite: Music 2A, 3A, 6A, or equivalencies, one or more.
- 124B. Intermediate Instrumental Ensemble** ($\frac{1}{2}$) I, II
Continuation of group performance of orchestral and band scores of more advanced grade. Material covered will prepare the student for minor parts in either concert orchestra or symphonic band. Prerequisites: Music 24A or 124A, or equivalent.
- 125A-B-C-D. Marching Band** (1-1-1-1) I, II
Permission of conductor required for membership.
- 126A-B-C-D. Symphonic Band** (1-1-1-1) I, II
Permission of the conductor required for membership. A maximum of 4 units in band may be counted toward the A.B. degree.
- 128. Methods in Teaching Piano** (3) Summer
Teaching of beginning intermediate and beginning 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 in class groups.

* See explanation below for conditions under which credit may be given for music study under private instructors.

130A-130B. Chamber Music (1-1) Year, I
String quintet and woodwind ensembles only. Permission of the instructor necessary for class membership.

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 inter-relationship of musical developments and trends in other arts. Completion of an acceptable thesis in fields of investigation chosen by the student. Prerequisites: Aesthetics 102A-102B 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

NOTE: Courses in philosophy may not be used to meet any part of the 12-unit social science requirement, nor may they be used as part of a social science major or minor.

1A-1B. Introduction to Philosophy (3-3) I, II
The major problems of philosophy and some significant approaches to their solution. The treatment is primarily critical and analytic rather than historical. Through free class discussion, each student is encouraged to develop for himself a world-view. Prerequisite: 1A is prerequisite for 1B.

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) II

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.

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) II

(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

Definition, classification, and division. The forms of reasoning. Analysis of propositions. Immediate inference. The syllogism. Dilemmas. Modern symbolic logic.

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

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 not offered in physical education.

A general major is offered in the field of recreation. For specific requirements, refer to the outline for the curriculum in recreation in the section on Preprofessional and Vocational Curricula, and for further information on the general major to the section on Upper Division Requirements for the Bachelor of Arts Degree in Arts and Sciences.

A teaching major is offered in physical education for the general secondary and the special secondary credentials. Refer to the outlines of requirements for these credentials.

Minor

A *minor in arts and sciences* is offered in physical education or in recreation. The plan for these minors must be approved by the departmental representative. A minor consists of at least 15 units of work in one field, nine units of which must be upper division credit. For further information on the minor in recreation, refer to the section entitled: Upper Division Requirements for the Bachelor of Arts Degree in Arts and Sciences.

A *teaching minor* is offered in physical education for the general secondary, the general junior high school, 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 specific information, refer to the outlines of requirements for these credentials.

A *teaching minor in recreation* is offered only as a second minor for students majoring in physical education. Nonphysical education majors may select recreation as a teaching minor for the general junior high school or the special secondary credential. For specific information, refer to the outlines of requirements for these credentials.

Candidates for a teaching credential in physical education should refer to the section on Admission to Teacher Education, and to the curriculum outline entitled: A.B. Degree with Special Secondary Credential in Physical Education.

With the exceptions listed, all lower division students must elect one or more courses each semester. Two units of activity credit must be offered for graduation. Exceptions: (a) Veterans of World War II; (b) students over 25 years of age. Students carrying fewer than 12 units during any semester may 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.

MEN'S DEPARTMENT

A medical examination is given each student when entering and recommendation is made as to type of activity most beneficial. Developmental 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.

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. The complete uniform will be furnished by the student.

Lower Division Courses

ACTIVITY COURSES

- | | |
|---|---------------------------------------|
| 1A-1B-1C-1D. Developmental Physical Education ($\frac{1}{2}$) 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 |

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

A medical examination is given each student when entering and recommendation is made as to type of activity most beneficial. Developmental 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.

Freshmen are required to choose from courses numbered 1-10. Sophomores may choose from all courses offered. An activity course may be taken for credit once only. The complete uniform will be furnished by the student.

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

- 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 ($\frac{1}{2}$) I, II
Practice in dance techniques and rhythms. 3A is a prerequisite for 3B.

TEAM SPORTS

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.
19. 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

PROFESSIONAL THEORY COURSES

Men and Women

Lower Division Courses

43. **Professional Activities (Men) (2) I**
Presents an opportunity for majors to develop the skills and techniques of the dance as well as other phases of the activity program. Organization and presentation of materials are emphasized.
44. **Professional Activities (Men) (2) II**
Emphasis is placed on acquiring the skills, teaching techniques, and development of knowledge and interests in the combative activities, tumbling, apparatus, and stunts.
51. **First Aid and Safety Education (2) I, II**
Accepted procedure in meeting the emergencies which arise daily in any of the many places where the physical education teacher is called on for first aid. Attention to the prevention and minimizing of common accidents. Course contents qualifies for American Red Cross Certificate.
53. **Physical Education in the Elementary School (2½) 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.
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 his professional training.

Upper Division Courses

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 drills 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.
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 (Offered in 1951-52)**
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.
- 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.
165. **Administration of Community Recreation (3) I**
The principles of organization and promotion of leisure time and recreation activities. Content consists of a study of recreation leadership, the growth of the recreation movement, the operation of areas and facilities, program of activities, features, services, organization and administration problems. A required course for Recreation minors.
168. **Physiology of Exercise (3) II**
A non-laboratory 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, campercraft, and outdoor education.
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.
- 184A-184B. **Field Work in Recreation (1 to 3-1 to 3) Year, I**
Observation and participation in supervised group activities in the field. Practical experience in the various public and semi-public community recreational agencies.
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 or 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 division.

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.

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

Lower Division Courses

Major and minor work not offered in physical science.

1A. 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 high school course in physics with grades of A or B, a college course in physics or astronomy, or Physical Science 40.

1B. 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 with a high school course in chemistry with grades of A or B, or a college course in chemistry or geology. Physical Science 1A not a prerequisite.

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. Will not satisfy laboratory requirements in physical science for the A.B. degree.

Upper Division Courses

110. Photography for Teachers (3)

Designed for more mature students to learn photographic skills useful in teaching.

PHYSICS IN THE DIVISION OF PHYSICAL SCIENCES

Major

A major in arts and sciences is offered in physics for the A. B. degree. Lower division requirements: Physics 4A-4B-4C; Mathematics 3A-3B, 4A-4B; Chemistry 1A-1B or their equivalents. Recommended: A reading knowledge of French or German. Upper division requirements: A minimum of 24 upper division units in physics including Physics 105A-105B, 110, three units chosen from 102 or 170, and 199 (two units). Six of the 24 units may be selected from a related field with approval of the student's departmental adviser.

A major in Physics is offered for the B. S. degree. The requirements are the same as those for the A. B. degree except, (1) no foreign language is required, and (2) the student's program must lead to a four year occupational objective approved by the physics department adviser for the B. S. degree.

A teaching major is offered in physics for the general secondary credential or as part of the general science major for the general junior high school credential or as part of the physical science major for 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 physics. The minor must include at least 15 units of work in physics, nine units of which must be from courses carrying upper division credit.

A teaching minor is offered in physics for the general secondary credential or as part of the general science minor for the general junior high, 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

NOTE: A maximum of 12 units of lower division physics credit may be applied toward the A. B. or B. S. degrees.

1A-1B-1C-1D. Principles of Physics

(Discontinued. Equivalent course is 4A-4B-4C.)

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.

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.

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 or 1C.

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) I

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 1D or 2B-3B or 4C.

107. Electrical Measurement (2) II

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 1C or 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) I (Offered in 1951-52)

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 (Offered in 1951-52)

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 1C or 2B-3B or 4C.

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.

126. Optical Measurements (2) I

An experimental study of lenses, optical systems and instruments, including the study of the wave character of light and the measurement of the wave length of light. An hour lecture and a three-hour laboratory per week. Prerequisite: Previous or concurrent registration in Physics 106, or permission of instructor.

128. Experimental Atomic Physics (2) I

Measurements of the specific charge and the charge of the electron. Measurements and analysis of data in radio activity, X-rays, cosmic rays, atomic spectra. Prerequisite: Previous or concurrent registration in Physics 158, or permission of instructor.

132. Heat and Pyrometry Laboratory (2) I (Offered in 1951-52)

Laboratory work selected from experiments in thermal expansion, specific heat, heat of combustion, radiation, calibration and use of various temperature measuring devices. An hour lecture and a three-hour laboratory per week. Prerequisite: Previous or concurrent registration in Physics 112, or permission of instructor.

134. Acoustical Measurements (2) II (Offered in 1951-52)

Experimental study of wave motion, velocity of sound in various media, diffraction, refraction and reflection of sound, microphone and loudspeaker characteristics. An hour of lecture and a three-hour laboratory per week. Prerequisite: Previous or concurrent registration in Physics 114, or permission of instructor.

144. Acoustics of Music (3) I

Fundamentals of acoustics and audition underlying musical phenomena presented in descriptive and nonmathematical terms. Prerequisite: A technical understanding of music.

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) II

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 Group. Enrollment through the department chairman, subject to the approval by the Committee on Honors. For requirements for admission to this group, refer to The Honors Group in the section on General Regulations.

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) Year, 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 | |

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 physiology, however, may be used as part of the major in zoology and are recommended as part of the lower division requirements for the major in psychology. For specific information, refer to these departments.

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. Prerequisites: 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 10A-10B 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. This major consists of 36 units of work in political science and closely related work chosen from the fields of economics, geography, history, philosophy, psychology, and sociology. Under the direction of the chairman of the department, the 36 units will be distributed as follows:

(a) Required courses: Political Science 1A-1B and 71A-71B (one year-course of which should be taken in the lower division) and Political Science 199.

(b) Eighteen upper division units in political science distributed among two of the following group: Group I: Theory and government—courses numbered 100-139; Group II: Administration—courses numbered 140-149; Group III: International affairs—courses numbered 150-179.

(c) Six units of upper division work selected from the related fields listed above, this work to be chosen under the direction of the chairman of the department and to be outside the field of the student's minor.

Students majoring in political science are advised to become as familiar as possible with the related fields listed above. Majors should have a reading knowledge of at least one foreign language.

A *teaching major* is not offered in political science; however, courses in political science 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 political science. The minor consists of 15 units of work, nine units of which must be from courses carrying upper division credit.

A *teaching minor* is not offered in political science for the general secondary credential; however, courses in political science may be used as part of the *social science minor* for the general junior high school, the special secondary, the general elementary, and the kindergarten-primary credentials. Refer to the outlines of requirements for these credentials.

Lower Division Courses**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.

1B. Introduction to Government (3) I, II

A comparative survey of selected foreign governments: Their constitutional principles, political institutions, and governmental problems.

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.

NOTE—Not open to freshmen.

Upper Division Courses**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.

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.

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.

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.

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.

139A-139B. American Constitutional Development (3-3) Year, I, II

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 and capital outlay, budget procedures, organization and administration of personnel 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.

150A-150B. International Relations (3-3) Year, I, II

An 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.

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.

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. Special Studies in Government (2-6) I, II

Directed study and research in the field of government. 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. Two plans are provided: 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 1, 5, and 6; 6 units in biology, physiology, and/or zoology; 3 units in philosophy; and 6 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 non-professional 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:

Pre-clinical: Psychology 105B, 106, 131, 145, 150, 151, 152, 160A. The following courses are recommended in other departments: Anthropology 1A-1B; Biology 10A-10B, or Physiology 1A and 1C; Philosophy 1A-1B or 3A-3B, 20, and 129; Sociology 105 and 135; 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 psychometrist 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: Commerce 130A, and 153; Economics 1A-1B, 100A, 150, 151, 185, and 170; Philosophy 20; Political Science 144, and 145; Sociology 50, 51; and 6 units selected from Sociology 105, 135, 180, 190; and Speech Arts 2A; a minor in commerce, 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 of Psychology as a part of the fulfillment of requirements for the School Psychologist credential only. Refer to the outline of requirements for this degree and credential in the section on Professional Curricula in Education.

Lower Division Courses

NOTE—Courses in psychology may not be used to meet any part of the 12-unit social science requirement, nor may they be used as part of a social science major or minor.

1. General (3) I, II

An introduction to some of the facts, principles, and concepts which are basic to understanding human behavior.

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.

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.

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.
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** (to be arranged) I, II
A special study arrangement for students admitted to the Honors Group. Enrollment through the Department Chairman, subject to the approval by the Committee on Honors. (See Honors Group under General Regulations.)
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.
177. **History of Psychology** (3) II
A survey of the historical background of modern psychology. Limited to psychology majors with senior standing.

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. Credit limited to 3 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 work is not offered in recreation. 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: Four semesters of physical education activity courses and in addition a minimum of 6 lower division units to include Physical Education 51, 53, and electives chosen from Art 6B or fields of dance, drama, or music. Upper division requirements: A minimum of 9 units, including Physical Education 165, 170A-170B, and 184A. Consultation with the Chairman of the Division of Health, Physical Education, and Recreation is advised.

A *teaching minor* in recreation is offered for the junior high school and special secondary credentials. Students with a major in physical education may use this minor as second minor only. For specific information, refer to the outlines for these credentials.

ROMANCE LANGUAGES

IN THE DIVISION OF LANGUAGES AND LITERATURE

Major

A *major in arts and sciences* is offered in romance languages. Lower division requirements: French 1, 2, 3, 4, 5, 6, and Spanish 1, 2, 3, 4, 5, 6; History 4A-4B or History 8A-8B (for those who emphasize Spanish in the upper division). Upper division requirements: A minimum of 24 upper division units, of which no less than 9 shall be in one language, including French or Spanish 199.

A *teaching major* in romance languages is offered for the junior high and general secondary credentials. For specific information, refer to the outline of requirements for this credential.

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 general junior high school, 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 the sections in the bulletin under Majors and Minors for these credentials.

SOCIAL SCIENCE

IN THE DIVISION OF SOCIAL SCIENCES

Major

A major in arts and sciences in social science is offered. Lower division requirements: 6 units in each of three of the following fields, the selection to be made on advice of the division adviser: (1) Economics, (2) geography, (3) history, (4) political science, and (5) sociology-anthropology. Upper division requirements: Complete a minimum of 30 units selected with the approval of the division adviser, as follows: Upper division courses to the extent of 6 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.

A teaching major is offered in social science for the junior high school, and general secondary credentials. For specific information, refer to the outlines for these credentials.

Minor

A minor in arts and sciences is not offered in social science.

A teaching minor in social science is offered for the junior high school, special secondary, and general elementary and kindergarten-primary credentials. For specific information, refer to the outlines for these credentials.

SOCIOLOGY

IN THE DIVISION OF SOCIAL SCIENCES

Major

A major in arts and sciences is offered in sociology. 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 general junior high school, 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

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.

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.

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.

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. Prerequisite: Sophomore standing.

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.

170. Social Pathology (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. Credit limited to three units.

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. Lower division requirements: Spanish 1, 2, 3, 4, 5, 6; French 1, 2, or German 1, 2, or Latin 1, 2; 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 116, 118, 119, 120; History 161, 162; Political Science 165; or Comparative Literature 101A, 140A-140B, 152A-152B, 155, 158, 159, in consultation with the Chairman of the Department. An average of C grade or better is required in upper division major courses.

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 the outlines of requirements for these credentials.

Minor

A *minor in arts and sciences* is offered in Spanish. The minor must include at least 15 units of work in Spanish, 9 units of which must be from courses carrying upper division credit.

A *teaching minor* is offered in Spanish for the general secondary, the general junior high school, the special secondary, the general elementary, and the kindergarten-primary credential. For specific information, refer to the outlines of requirements for these credentials.

Lower Division Courses**1. Elementary (3) I, II**

Pronunciation, oral practice, readings on Spanish culture and civilization, minimum essentials of grammar.

2. Elementary (3) I, II

Continuation of Spanish 1. Prerequisite: Spanish 1 or one year of high school Spanish.

2, 3, 4, 5. Will take the place of Spanish C, D, in the Fall semester of 1951.

10. Conversation (2) I

Practice in the spoken language; practical vocabulary; conversation on assigned topics; simple dialogues and plays. Prerequisite: Spanish A or two years of high school Spanish.

11. Conversation (2) II

Continuation of Spanish 10. Prerequisite: Spanish 10, Spanish B or three years of high school Spanish.

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.

16. Spanish Civilization (2) II

Continuation of Spanish 15. No prerequisite.

B. Elementary (5) I (Offered for last time in Fall of 1950)

Intensive study of Spanish grammar and syntax, with daily written work; class drill in conversational idiom and pronunciation; reading with oral discussion and resumes; dictation; introduction to contemporary prose writers. Students who have had two years of Spanish in high school should register for Spanish B for which only four units will be allowed. For specific information, consult the chairman of the department.

C-D. Intermediate Spanish (3-3) Year, I (Offered for last time in Spring 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 for C: Spanish B or three years of high school Spanish. Prerequisite for D: Spanish C or four years of high school Spanish.

50. Spanish Commercial Correspondence (3) I

(Offered in Fall of 1950 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 B. This course may substitute for Spanish C in the C-D sequence.

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. Prerequisite: Two years of high school Spanish or one year of college Spanish or permission of instructor.

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 D, or its equivalent, with 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 *Rogueria*; 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: A grade of C in Spanish D or permission from the instructor.

104A-104B. Spanish-American Literature (3-3) Year, I

Reading from representative Spanish-American authors during the colonial revolutionary and modern periods. Lectures, class reading, collateral reading and reports. Prerequisite: A grade of C in Spanish D or permission from the instructor. Students who do not read Spanish may take this course for credit in comparative literature, doing the required reading in English translation.

105A-105B. Modern Spanish Drama (3-3) Year, I

The development of the drama of Spain from the beginning of the nineteenth century to the present time. Prerequisite: A grade of C in Spanish D or permission from the instructor.

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: A grade of C in Spanish D or permission from the instructor.

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: Grade of C in Spanish D, or permission of the instructor.

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**Spanish 201. Old Spanish (2) I**

A study of the language and literature of Spain from the 12th to the 15th centuries.

Spanish 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.

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.

SPEECH ARTS**IN THE DIVISION OF LANGUAGE AND LITERATURE****Major**

A *major in arts and sciences* is offered in speech. 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; 6 units selected from 155, 140A-140B, 179A-179B, 192A-192B (the first semesters of any of these courses may be combined); 6 units selected from 181, 182, 183 or 184, 159A-159B, 161 and 191, or combinations of the first semesters of any of these courses; 6 units selected from 152, 154A, 154B, 108, 118A, 176, 192A, 192B.

A *teaching major* is offered in speech for the general secondary and the special secondary credentials. For specific information, refer to the outlines of requirements for these credentials.

Minor

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

A *teaching minor* is offered in speech for the general secondary, the general junior high school, 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 specific information, refer to the outlines of requirements for these credentials.

Lower Division Courses**A. Speech for Communication (2) I, II**

Primarily for those who have not passed the speech test. Training in communication, obtaining and organizing material, and drill in enunciation, pronunciation, vocabulary and oral grammar. Individual laboratory practice for specific speech problems.

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.

2A. Fundamentals of Public Speaking (3) 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 type forms of speech.

2B. Extemporaneous Speaking (or Forum 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. 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. Interpretation (3) I, II

Oral reading of various types of material suitable for popular audiences: Stories, humorous sketches, light and sentimental verse. Prerequisite: 2A or 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 lispers.

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.

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. 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**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.

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, II

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-118B. Playwriting (3-3) Year, I

The first semester deals with the one-act play and its technique. Plays are analyzed and creative writing is encouraged. New plays are read and discussed in class during their period of development. Some of the plays will be produced. The second semester continues with analyses of long plays and students continue creative writing. Prerequisite: 118A or permission of the instructor is prerequisite for 118B.

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.

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) Summer

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. Directed 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.

161A-161B-161C-161D. Advanced Intercollegiate Debate (1-1-1-1) I, II**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, intercollegiate 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.

166. Honors Course

See The Honors Group under General Regulations.

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. 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 stammering. Required course for Special Corrective Credential. Not open to students with credit in Education 179A-179B. (Speech Arts 179A is a prerequisite for 179B.)

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.

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 News Writing and Broadcasting (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.

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: 2A or 2B.

199. Special Problems in Speech and Dramatic Art (1-3) I, II

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. Lower division requirements: Zoology 1A-1B; Chemistry 1A-1B or 2A-2B. Recommended: German or French; Botany 1. Upper division requirements: A minimum of 24 upper division units, at least 18 units of which must be in zoology and 6 units of which may be in related courses in botany, chemistry, physics, physiology, or bacteriology selected with approval of the departmental representative.

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, nine 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 general junior high school, 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. Students who have credit for Biology 10B do not receive credit for Zoology 1A. Prerequisite for Zoology 1B: Biology 10B or 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 10A, 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 10A or Zoology 1A. Lectures three hours per week. Credit reduced to 2 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 10B.
101. **General Physiology** (4) II
Fundamentals of plant and animal functions. Two lectures and two laboratory periods per week. Prerequisites: Biology 10A-10B 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 10A-10B.
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 10B.
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, or Biology 10A-10B; 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 10B. 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 10B.
- 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 10B.
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 10B.
119. **Field Zoology** (4) 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 10B. 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 10B.
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 10B.
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: Biology 10A-10B or Zoology 1A-1B.
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.
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, Biology 1, or Biology 10B. Not open to students who have credit for Botany 153.
155. **Genetics** (2) II
Principles of plant and animal genetics. Primarily for science majors. Two lectures per week. Not open to students with credit for Botany 155. Prerequisites: Biology 10A-10B, Zoology 1A-1B or Botany 2A-2B.
156. **Genetics Laboratory** (2) II
Experiments and demonstrations illustrating the mechanism of heredity in plants and animals. Six hours of laboratory per week. Prerequisite: Zoology 155 or Botany 155, or concurrent registration in either. Not open to students with credit for Botany 156.
160. **Evolution** (2) II
The development of theories of evolution. Two lectures per week.
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.
199. **Special Study** (1-2) 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.

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.

298. 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		
* English 41, English Composition, and 42, Freshman Literature	3	3
Physical Science 40, Man and His Physical World, or equivalent (see lower division requirements.)	-	3
Biology 40, Man and His Biological World, or equivalent (see lower division requirements.)	3	-
Social Science 40, Contemporary Problems	3	-
Sociology 45, Marriage and the Family	-	3
Health Education 21, Principles of Healthful Living	-	2
Psychology 40, Psychology and Life	3	-
Physical Education (activity courses)	3	4
Elective	3	4
	15½	15½

COURSES OF INSTRUCTION

BIOLOGY

40. Man and His Biological World (3) I, II

General concepts of biology; living, reproduction, inheritance, evolution. Biology in action; scientific methods, scientific attitudes, contributions of biologists. Man as a biological animal; his biological needs, his place in the biological world. One demonstration and three lecture periods per week. Equivalent of Biology 1.

ENGLISH

40. English Fundamentals

Elements of composition. Drill in grammar, usage, vocabulary building, reading skills, theme writing. Course credit is equivalent to passing English A qualifying examination and may be counted toward graduation as an elective, but does not satisfy lower division English requirements. Equivalent of English A.

* Students who do not pass the English A qualifying examination must register in English 40, Pre-College English, which is a prerequisite for English 41. Credit in English 40 may be counted toward graduation as an elective but not to satisfy lower division English requirements.

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.

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**40. 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 1A.

PSYCHOLOGY**40. 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**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.

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**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.

DIRECTORY

1949-50

HEPNER, WALTER R.	President
Ed.D., University of Southern California. 1935.*	
HARDY, EDWARD L. (Retired 1935)	President
B.L., University of Wisconsin; M.A., University of Chicago; LL.D., La Verne College. 1910.*	
ACKLEY, JOHN WILLIAM	Assistant Professor of Speech Arts
A.M., and two years of graduate study at the University of Southern California. 1947.*	
ADAMS, EILEEN (Mrs. Bert)	Junior Librarian
A.B., Willamette University; B.S., University of Denver. 1949.*	
ADAMS, JOHN R.	Professor of English
Ph.D., University of Southern California. 1928.*	
ALCORN, MARVIN DOUGLAS	Associate Professor of Education
Ed.D., University of Southern California. 1941.*	
AMSDEN, GEORGIA C.	Associate Professor of Commerce
Diploma, Gregg College, Chicago; special secretarial training in various colleges. 1925.*	
ANDERSON, GRAYDON K.	Assistant Professor of Economics
Two years of graduate study at University of Minnesota and University of Wisconsin. 1949.*	
ANDREWS, JULIA GETHMAN	Assistant Professor of Art
M.A., Columbia University; two and one-half years of graduate study at Teachers College, Columbia University. 1947.*	
APPLE, JOE ALTON	Associate Professor of Education
Ed.D., Teachers College, Columbia University. 1947.*	
ATKINSON, DAVIS F.	Instructor in Commerce
M.A., and one-half year graduate study at Stanford University. 1949.*	
AULT, JESSE W. (Retired 1948)	Dean of Professional Education
	Professor of Education
BACON, GUINIVERE KOTTER (Mrs. George)	Associate Professor of Education
M.A., Stanford University. One year graduate study at Stanford University, Teachers College of Columbia University, University of Southern California, and University of California at Los Angeles. 1928.*	
BAIRD, OSCAR	Professor of Physics
M.A., University of California. Three years graduate study at University of Minnesota, University of California, University of Southern California, University of Oregon. 1921.	
BAKER, CLIFFORD H., JR.	Instructor in Spanish
M.A., University of California. Four years graduate study, University of California. 1937.*	
BALLANTINE, FRANCIS A.	Assistant Professor of Education
Ph.D., University of Michigan. 1949.*	
BARNHART, KENNETH EDWIN	Professor of Sociology
Ph.D., University of Chicago. 1939.*	
BAUM, DONALD ELWOOD	Assistant Professor of Music
M.A., University of Iowa. 1947.*	
BECKER, CALLIE D. (Mrs. E. J.)	Senior Librarian
A.B., Emory University. 1946.*	
BELL, GERTRUDE S. (Retired 1938)	Professor of Psychology

* Date of appointment.

- BENTON, CARL WEBBER.....Instructor in Physical Education
B.S., University of California at Los Angeles. 1948.*
- BIRCH, AILEEN J. (Mrs. C. E.).....Instructor in Education
A.B., San Diego State College. 1949.*
- BLOCK, EDWARD A.....Associate Professor of English
Ph.D., University of California. 1946.*
- BROADBENT, HARRY H.....Assistant Professor of Physical Education
A.B., University of Oklahoma; one and one-half years of graduate study at the University of Pennsylvania. 1949.*
- BROOKS, BAYLOR.....Assistant Professor of Geology
B.A., Stanford University. Two years graduate study at University of Arizona and Stanford University. 1931.*
- BROWN, ELIZABETH McPIKE (Mrs. L. P.).....Professor of French
Ph.D., University of Chicago. 1926.*
- BROWN, EUGENE P.....Assistant Professor of Commerce
M.A., University of Oklahoma. One year graduate study at University of Chicago, University of Southern California and University of Mexico. 1947.*
- BROWN, LESLIE PARKER.....Professor of Spanish and French
Ph.D., University of Southern California. 1922.*
- BRUNER, WILLIAM S.....Assistant Professor of English
M.A., Claremont Colleges. 1948.*
- BRYDEGAARD, MARGARET A. (Mrs. H.).....Associate Professor of Education
M.A., and graduate study, Claremont Colleges. 1936.*
- BURNETT, GAIL ALLEN.....Assistant Professor of English
Ph.D., University of Southern California. 1947.*
- CAMERON, ROY ERNEST.....Professor of Economics
Ph.D., University of California. 1929.*
- CAMPBELL, LOIS BERYL.....Assistant Professor of Education
M.A., Teachers College, Columbia University. 1947.*
- CARLSON, HILDING B.....Associate Professor of Psychology
Ph.D., University of Chicago. 1948.*
- CARLSON, THORSTEN ROBERT.....Principal of Campus Laboratory School;
Associate Professor of Education
Ph.D., University of Minnesota. 1948.*
- CASSEL, RUSSELL N.....Assistant Professor of Education
D.Ed., University of Southern California. 1949.*
- CAVE, MARY F.....Assistant Professor of Physical Education
B.S., University of North Dakota; one-half year's study at Bennington College. 1946.*
- CHADWICK, LEONARD E.....Assistant Professor of Economics
B.S., and two and one-half years of graduate study at the University of California. 1949.*
- CHOPLIN, ROSA MARIA (Mrs. Ralph).....Acting Instructor in Spanish
A.B., University of California at Los Angeles; one year graduate study at University of Southern California. 1948.*
- CHURCHILL, CHARLES W.....Assistant Professor of Sociology
Ph.D., New York University. 1949.*
- COLLINS, MYRON D.....Lecturer in Music
Diplomas, University Extension Conservatory, Chicago; extensive private instruction. 1948.*
- COMIN, NORITA (Mrs.).....Acting Assistant Professor of Home Economics
B.S., University of Minnesota. 1949.*
- CORBETT, KATHERINE E.....Associate Professor of Education
M.A., Teachers College, Columbia University. 1921.*

* Date of appointment.

- CORRIGAN, ROBERT FORD.....Assistant Professor of Speech Arts
M.A., University of Iowa. 1947.*
- CROUCH, JAMES ENSIGN.....Professor of Biology
Ph.D., University of Southern California. 1932.*
- CUNKLE, ELIZABETH CLARK (Mrs. LaChance).....Junior Librarian
B.S., Columbia University. 1948.*
- CUNNINGHAM, CORNELIUS CARMAN.....Associate Professor of Speech Arts
Ph.D., University of Iowa. 1947.*
- DEBRECHT, EUGENE F.....Director of Extension Service
Assistant Professor of Commerce
M.A., Stanford University. 1949.*
- DEHNEL, PAULA A.....Acting Instructor in Biology
M.A., University of California. 1948.*
- DEPUTY, ERBY CHESTER.....Professor of Education
Ph.D., Columbia University. 1931.*
- DICKHAUT, FLORENCE LILLIAN SMITH (Mrs. Charles A.).....Professor of English
M.A., University of Chicago. 1917.*
- DIRKS, JOHN H.....Instructor in Art
B.A., San Diego State College; one-half year of graduate study at the University of Southern California. 1947.*
- DURR, IRMA SUE (Mrs. Robert L.).....Junior Librarian
B.S., George Peabody College. 1949.*
- EAGLE, JOHN E.....Associate Professor of Mathematics
Ed.D., Stanford University. 1946.*
- EARNEST, SUE W. (Mrs. L. E.).....Assistant Professor of Speech Arts
Ph.D., University of Southern California. 1947.*
- EELLS, KENNETH W.....Associate Professor of Psychology
A.B., Ph.D., University of Chicago. 1949.*
- EMERSON, ARTHUR T.....Acting Assistant Professor of Mathematics
B.S., U. S. Naval Academy; one year graduate study at Naval War College. 1947-1948, 1949.*
- ENGLANDER, HERMAN S.....Acting Instructor in Mathematics
B.S., California Institute of Technology. 1947.*
- EVENSON, PATTEE E.....Associate Professor of Music
M.M., University of Michigan; specialized training at Universities of Minnesota, Rochester, and Southern California; private instruction in Paris, London and the United States. 1949.*
- FELTON, JOHN R.....Assistant Professor of Economics
M.A., and one and one-half years of graduate study at the University of California. 1948.*
- FERRIS, HORACE G.....Instructor in Physics
Ph.D., University of California. 1949.*
- FOLSOM, HANNAH W.....Instructor in English
M. A., Wellesley College; one and one-half years of graduate study at University of California. 1947.*
- FOLSOM, MARK P.....Acting Assistant Professor of Journalism
Assistant Professor of Education
A.B., and one year graduate study at University of California at Los Angeles and the University of Arizona. 1949.*
- FRIEDRICH, KURT.....Assistant Professor of Education
Ed.D., Columbia Teachers College. 1949.*
- GELDREICH, EDWARD W.....Assistant Professor of Psychology
M.A., 1935, University of Cincinnati; three years graduate study at the University of Chicago. 1947.*
- GENERALES, MINOS D.....Associate 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. 1949.*

* Date of appointment.

- GERMANN, LULA Senior Librarian
B.S., State Teachers College, Hays, Kansas. 1926.*
- GIBSON, ERNEST DANA Associate Professor of Commerce
Ed.D., New York University. 1947.*
- GJERDE, CLAYTON M. Assistant Professor of Education
M.A., and two years of graduate study at the University of Minnesota. 1948.*
- GLEASON, JOHN MORTIMER Assistant Professor of Mathematics
M.A., University of California. One and a half years graduate study at University of Southern California, University of California at Los Angeles and Claremont Colleges. 1930.*
- GRESS, IRVIN S. Assistant Professor of Psychology
M.Ed., University of Pittsburgh. Two years graduate study at Columbia University, Pennsylvania State College and University of Pittsburgh. 1946.*
- GROSS, GEORGE C. Acting Instructor in English
A.B., San Diego State College; one year graduate study at San Diego State College and University of Southern California. 1949.*
- GULICK, SIDNEY L., JR. Professor of English
Ph.D., Yale University. 1945.*
- HALLEY, ROBERT Acting Instructor in Mathematics
M.A., University of California at Los Angeles. 1949.*
- HAMMACK, EDITH CHASTAIN Associate Professor of Education
B.A., San Jose State College. 1911.*
- HAMMACK, ISABELLA STEWART Associate Professor of Education
M.A., University of California. One-half year graduate study at University of California. 1936.*
- HARCLEROAD, FRED F., JR. Director of Secondary Education and Audio-Visual Education; Associate Professor of Education
Ph.D., Stanford University. 1946.*
- HARRINGTON, AWONA B. Junior Librarian
M.S., University of Southern California. 1949.*
- HARRINGTON, NEIL J. Acting Instructor in Chemistry
B.S., Monmouth College; one year of graduate study at DePaul University and Northwestern University. 1948.*
- HARVEY, ALBERT R. Assistant Professor of Mathematics
Ph.D., Harvard University. 1949.*
- HARVEY, DOROTHY R. (Mrs. F. A.) Assistant Professor in Botany
M.A., University of Southern California. One year graduate study at University of Southern California and University of Chicago. 1924.*
- HARWOOD, ROBERT DANIEL Professor of Zoology
Ph.D., Cornell University. 1928.*
- HASKELL, HARRIET Assistant Professor of English
Ph.D., University of Wisconsin. 1940.*
- HAVER, CLARE L. (Mrs. R.) Acting Instructor in Education
A.B., Western Washington College of Education. 1949.*
- HAYNES, GERALDINE K. (Mrs. Lloyd) Senior Librarian
B.S., University of Illinois. 1931.*
- HISCOX, ETHEL M. Assistant Professor of Music
M.A., New York University. Voice study with Lila Robeson and Herbert Wither-
spoon of New York Metropolitan Opera Co. 1947.*
- HOUSEMAN, RICHARD A. Associate Professor of Education
Ed.D., Teachers College, Columbia University. 1948.*
- HOUSER, LOWELL D. Associate Professor of Art
Diploma, Chicago Art Institute. Five years' special study in Mexico, Yucatan, Haiti, and New York City. 1938.*
- HUNTER, JAMES J., JR. Professor of Education
Ph.D., Syracuse University. 1946.*

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- ISENSE, ROBERT W. Assistant Professor of Chemistry
Ph.D., Oregon State College. 1948.*
- JACKSON, EVERETT GEE Professor of Art
Three years special study in Mexico. M.A., 1939, University of Southern California. 1930.*
- JACOBSEN, HELEN M. Senior Librarian
B.S., University of California. 1946.*
- JOHNSON, FRANK LOUIS Associate Professor of English
Ph.D., University of Wisconsin. 1939.*
- JOHNSON, MYRTLE (Retired 1946) Professor of Biology
- JONES, KENNETH K., JR. Instructor in Speech Arts
M.A., Stanford University. 1948.*
- JOSEPH, LIONEL Assistant Professor of Chemistry
Ph.D., Washington University. 1947.*
- KALBFELL, DAVID C. Assistant Professor of Physics
Ph.D., University of California. 1948.*
- KAMM, MADGE E. Assistant Professor of Education
M.A., Teachers College, Columbia University. 1947.*
- KAPLAN, OSCAR J. Associate Professor of Psychology
Ph.D., University of California. 1946.*
- KASCH, FREDERICK W. Assistant Professor of Physical Education
M.S., University of Illinois; one-half year of graduate study at New York University. 1948.*
- KEENEY, JOSEPH SUMNER Professor of English
Ph.D., University of California. 1933.*
- KENNEDY, CHESTER B. Associate Professor of English
Ph.D., University of California. 1937.*
- KIDWELL, WILLIAM M. Director of Placement; Assistant Professor of Psychology
Ed.D., Stanford University. 1949.*
- KITZINGER, ANGELA M. Assistant Professor of Health Education
M.A., Teachers College, Columbia University. Year of additional work at Central School of Hygiene and Physical Education and at Folk High School, Ollerup, Denmark. 1945.*
- KLAPP, ORRIN E. Assistant Professor of Sociology
Ph.D., University of Chicago. 1948.*
- LAMDEN, CHARLES W. Associate Professor of Commerce
Ph.D., University of California. Certified Public Accountant. 1946.*
- LAURITSEN, WILLIAM H. Professor of Health Education
Ph.D., Ohio State University. 1947.*
- LEBARRON, EVANGELINE O. Assistant Professor of Commerce
B.A., University of Iowa. One and one-half years of graduate work at Claremont Colleges, University of Southern California, University of Minnesota and University of Hawaii. 1946-48, 1949.*
- LEIB, JULIUS Associate Professor of Music
Three years special study at Leipzig Conservatory. 1938.*
- LEIFFER, DONALD B. Professor of Political Science
Ph.D., Harvard University. 1948.*
- LEMME, MAURICE M. Associate Professor of Mathematics
Ph.D., Purdue University. 1948.*
- LEONARD, CHARLES B. Professor of History
Ph.D., University of California. 1921.*
- LESLEY, LEWIS B. Professor of History
Ph.D., University of California. 1924.*

* Date of appointment.

- LINLEY, JAMES Assistant Professor of Education
Ph.D., University of Southern California. 1945.*
- LIVINGSTON, GEORGE R. (Retired 1949) Professor of Mathematics
M.A., University of California. One year graduate study since 1922 at University of California, University of California at Los Angeles and University of Southern California. 1921.*
- LOCKMAN, EVELYN Assistant Professor of Physical Education
M.A., George Peabody College; one year of graduate study at the University of Wisconsin and New York University. 1948.*
- LUCE, LAWRENCE W. Acting Instructor in Industrial Arts
M.S., Stout Institute. 1949.*
- LUCIO, WILLIAM HOWARD Director of Elementary Education;
Ph.D., University of California. 1939.* Professor of Education
- MADDEN, RICHARD Dean of Education; Professor of Education
Ph.D., Columbia University. 1939.*
- MARCHAND, ERNEST L. Professor of English
Ph.D., University of Wisconsin. 1946.*
- McBLAIR, WILLIAM Acting Instructor in Biology
B.A., San Diego State College; one year of graduate work at the University of California. 1948.*
- McCLINTIC, JOSEPH O. Professor of Economics
Ph.D., University of Wisconsin. 1946.*
- McCOLLOM, IVAN N. Director of Summer Sessions; Professor of Psychology
Ed.D., Colorado State College of Education. 1946.*
- McGAUGHEY, JANET M. (Mrs. J. R.) Assistant Professor of Music
B.M., M.M., University of Michigan. 1947.*
- McLONEY, WIRT L. Instructor in Physical Science
M.A., Colorado State College of Education. 1949.*
- MENDENHALL, MARY Dean of Women; Professor of Philosophy
Ph.D., Yale University. 1939.*
- MERRILL, JOHN E. Assistant Professor of History
A.M., Harvard University. Two years graduate study at Stanford University. 1946.*
- MERZBACHER, CLAUDE FELL Instructor in Chemistry
M.A., Claremont Graduate School. Licensed Professional Chemical Engineer. 1947.*
- MESSIER, LEONARD N. Assistant Professor of French
Ph.D., University of California. 1946.*
- MILLER, DOROTHY A. Acting Instructor in Chemistry
M.S., State University of Iowa. 1947.*
- MILNE, DAVID S. Associate Professor of Sociology
Ph.D., University of Chicago. 1946.*
- MOE, CHESNEY R. Professor of Physics
Ph.D., University of Southern California. 1931.*
- MOLITOR, VINNIE CLARK (Retired 1938) Associate Professor of Geography
- MOORE, EDWENA B. (Mrs. E. J.) Instructor in Education
B.A., San Diego State College; one year graduate study at Claremont Colleges. 1947.*
- MORGAN, CHARLES Instructor in Engineering
M.S., University of California. 1949.*
- MYERS, MABEL A. Associate Professor of Biology
Ph.D., Cornell University. 1946.*
- NASATIR, ABRAHAM PHINEAS Professor of History
Ph.D., University of California. 1928.*

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- NICHOLS, AMBROSE R., JR. Associate Professor of Chemistry
Ph.D., University of Wisconsin. 1939.*
- NIEBAUER, RUBY R. Assistant Professor of Education
M.S., University of Wisconsin. 1949.*
- NORLAND, CALVERT E. Instructor in Biology
M.S., University of California. One and one-half years graduate study at University of California; one and one-half years graduate study at Claremont Colleges. 1947.*
- OLSON, ANDREW C., JR. Assistant Professor of Biology
M.S., University of Idaho. One year graduate study at University of California. 1946.*
- OSBORN, CLARENCE G. Professor of History and Political Science
Ph.D., Stanford University. 1928, 1929, 1937.*
- PEASE, GLENN R. Acting Assistant Professor of Psychology
Ph.D., State University of Iowa. 1947.*
- PEIFFER, HERBERT C., JR. Dean of Students;
Ph.D., Stanford University. 1937.* Professor of Psychology and Guidance
- PEREZ, ROSE MARIE Junior Librarian
M.A., University of Chicago. 1948.*
- PERRY, FAY V. (Mrs. J. M.) Director of Guidance for Provisional Students;
Ed.D., University of Southern California. 1936.* Professor of Sociology
- PETERSON, CHARLES E. Dean of Men; Professor of Physical Education
M.A., Claremont Colleges. 1921.*
- PFAFF, PAUL LEWIS Associate Professor of Speech Arts
M.A., University of Southern California. Two years study at University of Southern California. 1931.*
- PHILLIPS, GEORGE L. Assistant Professor of English
Ph.D., Boston University. 1947.*
- PHILLIPS, WALTER THOMAS Professor of Spanish
Ph.D., University of Southern California. 1927.*
- POST, LAUREN CHESTER Professor of Geography
Ph.D., University of California. 1937.*
- POVENMIRE, E. KINGSLEY Associate Professor of Speech Arts
M.F.A., Yale University. 1946.*
- PRESTON, DUDLEY A. Assistant Professor of Biology
Ph.D., University of Minnesota. 1948.*
- RAGEN, KATHERINE M. Assistant Professor of History
Ph.D., University of Wisconsin. 1947.*
- RENSHAW, MORTON J. Coordinator, Personnel Services Center;
Ph.D., Stanford University. 1948.* Assistant Professor of Psychology
- RICHARDSON, M. BRUCE Lecturer in Engineering
A.B., Aeronautical Engineer, Stanford University. Registered Mechanical Engineer. 1948.*
- RICHARDSON, ROBERT W. Professor of Geography
Ph.D., University of California. 1939-1942, 1948.*
- ROBERTS, ELLIS E. Instructor in Physical Science
Ph.D., Stanford University. 1949.*
- ROBINSON, DUDLEY HUGH Professor of Chemistry
Ph.D., University of Southern California. Registered Chemical Engineer. 1928.*
- ROBINSON, EVELYN L. Assistant Professor of Physical Education
M.S., University of Southern California. 1946.*
- ROGERS, SPENCER LEE Professor of Anthropology
Ph.D., University of Southern California. 1930.*

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- ROHFLEISCH, KRAMER J. ----- Associate Professor of History
Ph.D., University of California. 1947.*
- ROWE, ROBERT D. ----- Professor of Chemistry
Ph.D., Stanford University. 1946.*
- RUJA, HARRY ----- Assistant Professor of Philosophy and Psychology
Ph.D., Princeton University; one year post doctoral study at University of California at Los Angeles. 1947.*
- RUOCCO, ILSE H. (Mrs. L.) ----- Associate Professor of Art
M.A., Columbia University. 1934.*
- RYAN, FREDERICK L. ----- Professor of Economics
Ph.D., University of California. 1946.*
- SCHEVILL, KARL E. ----- Instructor in Spanish
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- SCHEY, OLE ----- Acting Assistant Professor of Mathematics
M.A., and two years of graduate study at the University of Minnesota and the University of California at Los Angeles. 1947.*
- SCHRUPP, MANFRED H. ----- Assistant Professor of Education
M.Ed., and one and one-half years of graduate study at the University of Minnesota. 1948.*
- SCHUNERT, JIM R. ----- Assistant Professor of Education
M.A., and one year of graduate study at the University of Minnesota. 1948.*
- SCHUTTE, WILLIAM H. ----- Assistant Professor of Physical Education
M.S., University of Southern California. 1947.*
- SCHWARTZ, EVA H. (Mrs. H.) ----- Acting Instructor in Chemistry
M.S., and one and one-half years graduate study at University of California. 1946.*
- SCHWOB, MARION LYON (Mrs. W. E.) ----- Associate Professor of Physical Education
M.S., University of Southern California. 1934.*
- SCOTT, FRANK L. ----- Assistant Professor of Physical Education
M.A., University of Michigan. 1947.*
- SELLMAN, HUNTON D. ----- Professor of Speech Arts
M.S., University of Arizona. Three and one-half years graduate study at University of California, University of North Carolina and Yale University. 1946.*
- SHANNON, FLORENCE S. (Mrs. E. L.) ----- Assistant Professor of Physical Education
M.S., University of Southern California. 1933.*
- SHELAR, EUGENE ----- Assistant Professor of Biology
Ph.D., Cornell University. 1949.*
- SHIELDS, ALLAN E. ----- Assistant Professor of Philosophy
M.A., and one year additional graduate study at University of Southern California. 1949.*
- SHIELDS, KARENA P. ----- Acting Assistant Professor of English
A.B. and one year of graduate study at the University of Southern California. 1948.*
- SHOUSE, CLAUDE F. ----- Assistant Professor of English
M.A., University of Kentucky; one and one-half years graduate study at University of Pittsburgh and University of Southern California. 1946.*
- SHUTTS, WILLIAM H. ----- Assistant Professor of Engineering
M.S., University of Colorado. 1949.*
- SILVERNAIL, CHESTER J. ----- Instructor in Astronomy
M.A., Claremont Graduate School. 1949.*
- SJOSTRAND, THOR H. ----- Instructor in Engineering
M.S., Stanford University. 1947-48, 1949.*
- SKILLING, W. T. (Retired 1936) ----- Professor of Astronomy
- SMART, KEITH L. ----- Instructor in Biology
M.A., University of California. 1949.*

* Date of appointment.

- SMITH, CHARLES ROBERTS ----- Assistant Professor of Physical Education
M.S., University of Southern California. 1933.*
- SMITH, CLIFFORD EDWARD ----- Professor of Astronomy
Ph.D., University of California. 1937.*
- SMITH, DEANE FRANKLIN ----- Associate Professor of Music
M.Mus., Northwestern University. 1939.*
- SMITH, LEILA DEBORAH (Retired 1948) ----- Professor of Music
M.A., Columbia University. One-half year study at Stanford University and Northwestern University. 1922.*
- SMITH, LOUIS E., JR. ----- Associate Professor of Physics
Ph.D., University of Washington. 1946.*
- SORENSEN, GEORGE N. ----- Associate Professor of Art
M.A., University of Southern California. 1946.*
- SPANGLER, JOHN A. ----- Assistant Professor of Chemistry
Ph.D., West Virginia University. 1946.*
- SPORTSMAN, CHARLES C. ----- Assistant Professor of Physical Education
M.S., University of Southern California. 1947.*
- SPRINGSTON, CHRISTINE ----- Associate Professor of Music
M.A., University of Washington. Diplôme d'exécution, Conservatoire Américain, Fontainebleau, France. 1930.*
- STEINMETZ, HARRY CHARLES ----- Associate Professor of Psychology
Ph.D., Purdue University. 1930.*
- STONE, HAMILTON L. ----- Assistant Professor of Engineering
B.S., U. S. Naval Academy. Two and one-half years of graduate study. Registered Mechanical Engineer. 1947.*
- STONE, JOHN PAUL ----- Head Librarian; Professor of Library Science
Ph.D., University of Chicago. 1930.*
- STORM, ALVENA (Mrs. Eugene) ----- Associate Professor of Geography
A.M., University of California. 1926.*
- STOUGH, MORROW F. ----- Assistant Professor of Education
Ph.D., University of California. 1950.*
- STOVALL, HARRIET B. (Mrs. S. L.) ----- Senior Librarian
Graduate, Berkshire Athenaeum, Massachusetts. 1925.*
- STRAUB, LURA LYNN ----- Assistant Professor of Commerce
M.C.S., Indiana University. 1948.*
- STRAUSS, WILLIAM L. ----- Acting Assistant Professor of History
Ph.D., Harvard University. 1949.*
- SUTTON, JOSEPHINE M. ----- Junior Librarian
A.B., University of Oklahoma. 1947.*
- SWIGGETT, JEAN D. ----- Associate Professor of Art
M.F.A., University of Southern California. 1946.*
- TALBOY, RUTH A. ----- Assistant Professor of Home Arts
M.A., Stanford University. 1947.*
- TANNER, JESSIE R. (Retired 1936) ----- Associate Professor of Physical Education
and Director of Physical Education for Women
B.S. and Bachelor's Teaching Diploma. Teachers College, Columbia University. Graduate study at University of California and University of Southern California. 1904.*
- TAYLOR, KENNETH M. ----- Assistant Professor of Biology
Ph.D., University of California at Los Angeles. 1949.*
- TAYLOR, MERRELL A. ----- Assistant Professor of Biology
M.A., University of Michigan. 1946.*
- TERHUNE, JOHN A. ----- Lecturer in Physics
M.S., Harvard University. 1946.*

* Date of appointment.

- TERRY, WILLIAM L. ----- Lecturer in Physical Education
M.S., Indiana University; two years of additional study at University of Kentucky and University of Illinois. 1946.*
- THEOBALD, JOHN R. ----- Professor of English
Ph.D., University of Iowa. 1946.*
- TIDWELL, JAMES N. ----- Associate Professor of English
Ph.D., Ohio State University. 1947.*
- TOLLEFSEN, DOROTHY J. ----- Assistant Professor of Physical Education
M.A., University of California. 1946.*
- TORBERT, FRANCES B. (Mrs. H.) ----- Associate Professor of Commerce
M.A., University of Southern California. One year graduate work at Stanford University. 1937.*
- TRAIL, MABEL COY ----- Associate Professor of English
Ph.D., University of Southern California. 1935.*
- TUCKER, GORDON H. ----- Professor of Biology
Ph.D., University of North Carolina. 1945.*
- VAN CLEAVE, MAURICE ----- Lecturer in Commerce
B.S., U. S. Naval Academy; one year graduate study at U. S. Naval War College. Public Accountant. 1948.*
- VOEKS, VIRGINIA W. ----- Assistant Professor of Psychology
Ph.D., Yale University. 1949.*
- WALBA, HAROLD ----- Instructor in Chemistry
Ph.D., University of California. 1949.*
- WALKER, DONALD E. ----- Instructor in Sociology
M.Th., University of Southern California; one and one-half years graduate study at Stanford University. 1949.*
- WALKER, HILDE KRAMER (Mrs.) ----- Assistant Professor of German
M.A., Northwestern University. 1931.*
- WALLING, CURTIS R. ----- Associate Professor of Engineering
E.E., Stanford University; one and one-half years of graduate study at Stanford University and the University of Southern California. Registered Electrical Engineer. 1931.*
- WATENPAUGH, FRANK M. ----- Associate Professor of Commerce
M.A., University of Southern California. Two years graduate study at University of Southern California and University of Oregon. Public Accountant. 1935.*
- WATSON, DONALD R. ----- Dean of Arts and Sciences
Ed.D., University of Southern California. 1939.* Professor of Physical Science
- WEBB, CHARLES R., JR. ----- Assistant Professor of History
Ph.D., Harvard University. 1949.*
- WEST, EDNA A. ----- Assistant Professor of Commerce
M.A., Claremont Colleges. 1948.*
- WHITE, ALFRED E. ----- Registrar; Director of Educational Research;
Ed.D., Stanford University. 1946.* Associate Professor of Guidance
- WILKERSON, DYXIE C. (Mrs. D.) ----- Instructor in English
M.A., Oklahoma Agricultural and Mechanical College; one year of graduate study at the University of Southern California. 1946-48, 1949.*
- WOLF, ERNEST M. ----- Instructor in Foreign Languages
Ph.D., University of Bonn. 1947.*
- WRIGHT, WILLIAM H. ----- Professor of Commerce
Ph.D., University of Southern California. Public Accountant. 1921.*
- ZIEGENFUSS, GEORGE ----- Assistant Professor of Physical Education
M.A., and one year of graduate study at Teachers College, Columbia. 1948.*

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ASSISTANT INSTRUCTORS

- BURKHARDT, FREDERIC S. ----- Assistant in Education
A.B., Dartmouth College.
- BYRNE, CHARLES T. ----- Assistant in Journalism
A.B., San Diego State College.
- CRAWFORD, RONALD M. ----- Assistant in Biology
A.B., San Diego State College.
- GRASTY, GEORGE M. ----- Assistant in Biology
A.B., University of Texas.
- HARVEY, HARRY T. ----- Assistant in Biology
A.B., San Diego State College.
- HAYDEN, BERNARR F. ----- Assistant in Education
A.B., San Diego State College.
- HEATHMAN, IVAN C. ----- Assistant in Education
A.B., San Diego State College.
- KING, ROBERT E. ----- Assistant in Psychology
A.B., San Diego State College.
- McCLINTON, JOSEPH R. ----- Assistant in Biology
A.B., San Diego State College.
- NEAL, RICHARD W. ----- Assistant in Biology
A.B., San Diego State College.
- RUTLEDGE, CLYDE K. ----- Assistant in Physics
A.B., San Diego State College.
- UPDEGRAFF, WILLIAM D., JR. ----- Assistant in Biology
A.B., San Diego State College.
- VULLIET, WILLIAM G. ----- Assistant in Physics
B.S., San Diego State College.

LECTURERS

- BLAKE, DEAN ----- Lecturer in Meteorology
Meteorologist, U. S. Weather Bureau. 1927.*
- BURGERT, ROBERT H. ----- Lecturer in Education
San Diego City Schools. 1948.*
- CONSIDINE, CHARLES R. ----- Lecturer in Commerce
Industrial Engineer; Public Accountant. 1946.*
- DE JULIEN, LORENZ F. ----- Lecturer in Commerce
Self employed. 1949.*
- ENGLER, CARL H. ----- Lecturer in Health
M.D., University of Southern California. 1949.*
- GELCHER, JOSEPH ----- Lecturer in Commerce
Insurance underwriter. 1946.*
- GOODWIN, JOHN H. ----- Lecturer in Commerce
Insurance broker. 1947.*
- GRECO, ANTHONY ----- Lecturer in Physical Education
Self employed. 1950.*
- HARBERT, SELMA C. ----- Lecturer in Speech Arts
M.A., Stanford University. 1950.*
- HUFF, GEORGE D., M.D. ----- Lecturer in Health and Hygiene
Practicing physician. 1939.*
- HUNTINGTON, LUCILE H. (Mrs.) ----- Lecturer in Commerce
Self employed. 1949.*

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KARPINSKI, CHARLES E.	Lecturer in Commerce
Attorney at Law. 1949.*	
KOEPPE, CLARENCE E., DR.	Lecturer in Geography
Ph.D., Clark University. 1948.*	
KRUSE, PAUL J.	Lecturer in Education
Ph.D., Columbia University.	
LINDSLEY, BYRON F.	Lecturer in Commerce
Attorney at law. 1947.*	
MCLEES, BERTRAM	Lecturer in Commerce
Deputy District Attorney. 1946.*	
PANOSH, ANNA M. (Mrs. L. C.)	Lecturer in Spanish
A.B., University of Denver. One year graduate study at University of Mexico, Centro de Estudios Historicos and University of California. 1946.*	
SAND, MARGARET C.	Lecturer in Psychology
Ph.D., Columbia University. 1950.*	
SARKISIAN, SARKIS S., M.D.	Lecturer in Biology
Practicing physician. 1949.*	
SLOBIN, HERMON L.	Lecturer in Mathematics
Ph.D., Clark University. 1949.*	
SNODGRASS, HERMAN G.	Lecturer in Political Science
Civil Service Training Officer, U. S. Naval Air Station. 1948.*	
STANFORTH, ROBERT O.	Lecturer in Commerce
Swing & Scharnikow, Attorneys. 1948.*	
STEINBERG, WILLIAM	Lecturer in Education
San Diego City Schools. 1949.*	
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.	
VAN CLEAVE, MAURICE	Lecturer in Commerce
B.S., U. S. Naval Academy. 1948.*	
WILEY, JOAN G. (Mrs. J. N.)	Lecturer in Psychology and Sociology
M.S.S., University of Buffalo. 1947.*	

MEDICAL STAFF

Carl H. Engler, M.D.	Medical Examiner
O. S. Harbough, M.D.	Medical Examiner
James R. Phalen, M.D.	Medical Examiner
Frances E. White, M.D.	Medical Examiner
Marilyn M. Fenwick, P.H.N.	Nurse

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Georgia Hochstetler	Secretary, Campus Laboratory School
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Constance King, B.S.	Secretary, Dean of Women
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Mildred H. LeCompte	Secretary to the Librarian
Ruth E. Little, A.B.	Mimeograph Office
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LIBRARY CLERICAL STAFF

Harrison, Elizabeth	Book Repair Clerk
Hemenway, Francis F.	Assistant Secretary to Librarian
Hord, Phyllis J.	Junior Library Clerk
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MAINTENANCE STAFF

Timothy Hallahan, A.B.	Supervisor of Buildings and Grounds
William Duns	Head Gardener
Floyd A. Kirkpatrick	Head Custodian
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INDEX

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