SAN DIEGO STATE COLLEGE

BULLETIN
AND
ANNOUNCEMENT
OF COURSES

FOR THE YEAR 1950-1951
BULLETIN

AND

Announcement of Courses

VOLUME 37
JUNE, 1950

SAN DIEGO STATE COLLEGE
SAN DIEGO, CALIFORNIA
### CALENDAR 1950-1951

#### SUMMER SESSION, 1950
- **Term I** - June 19-July 28
- **Term IIA** - July 31-August 18
- **Term II** - July 31-September 1

<table>
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<tr>
<th>Term</th>
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| Term I | June 19-July 28 | Qualifying examinations for all entering students (8:30 a.m.-12:30 p.m.)
| Term IIA | July 31-August 18 | Applications for admission must be filed on or before this date.
| Term II | July 31-September 1 | Qualifying examinations for all entering students (8:30 a.m.-12:30 p.m.).

#### 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 6-8, 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 9** | College aptitude test for transfer students registering late (10:30-11:30 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.-12:30 p.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 29** | College aptitude test for transfer students registering late (8:30 a.m.-10:30 a.m.).
- **September 22-23** | Registration and payment of fees.
- **September 25** | Last date for late registration.
- **September 25** | 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.
SAN DIEGO STATE COLLEGE

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 20
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
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 the arts, 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 type of Spanish Colonial Art and Architecture. Located in the Campus, the Fine Arts Building, 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 over 110,000 books and receives more than 700 different periodicals selected to meet the requirements of a modern educational institution. Trained librarians are available to render assistance to students and faculty in their reading and reference work.

THE COLLEGE

ACCRREDITATION

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 halls. 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 Quetral Hall, 5102 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.

A group of 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 those 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 Personal 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 have been made available through the efforts of the alumni, civic organizations, student organizations, businesses 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 to 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 received with the office of the Dean of Women prior to October 15th. Scholarships available for 1950-51:

ALPHA GAMMA DELTA. This sorority presents a $50 award each year to a student in the senior class 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. Nomination is made by the Engineering Department of the College. At least sophomore standing is required for nomination.

ANONYMOUS (B). A scholarship of $100 is given each year to a student 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 is awarded 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.

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 fresh man and one to an entering freshman woman. The scholarships will be awarded to students who have demonstrated leadership in high school activities.

JONES, SYBIL ELIZA MEMORIAL. A scholarship of $100 is awarded annually to a student in drama. Applicant must be officially enrolled in at least four years of high school and have participated in drama and school activities. Final selection will be made by the Committee on Loans and Scholarships.

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

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.

PANHELLENIC (S. D. S. C.). Fifty dollars annually is given to women students selected by this organization.

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. (OM, HR, AND IZ CHAPTERS). Scholarships ranging from $35 a semester to $100 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.

CHAMBER OF COMMERCE MUSIC SCHOLARSHIPS. Several scholarships of $30 each 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.

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

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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 who exhibit 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 scholarships 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 Scholarship, 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. $20 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 and funded 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 second semester.

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 Lasker 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.

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WOMEN’S CIVIC LEAGUE. The Women’s Civic League sponsors an annual award of $50 to a deserving woman student selected by the league.
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 the 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 individuals who full slightly below the above standard may be admitted to provisional status if qualifying examination scores indicate probable success in college. One year or more units of college work with grade average of C or better. Full credit is allowed for 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 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 satisfactorily the usual requirements for the A.B. Degree, three semester units of college work at this college. Non-high school graduates shall be required to complete college work for each semester courses lacking high school graduation. College 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 college. Applicants must show an average grade of C or better for all college work, 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 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 90 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 part of the regular college offerings and are taught by staff members of the college, but moved to a late afternoon or evening time 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 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 fee is $20 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.

<table>
<thead>
<tr>
<th>A Partial Estimate of Expenses</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>One Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fees</td>
<td>$24.00</td>
<td>$31.50</td>
</tr>
<tr>
<td>Books</td>
<td>15.00</td>
<td>27.00</td>
</tr>
<tr>
<td>Board and room</td>
<td>27.00</td>
<td>49.00</td>
</tr>
<tr>
<td>Transportation, lunches, incidentals</td>
<td>20.00</td>
<td>60.00</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>5.00</td>
<td>10.00</td>
</tr>
</tbody>
</table>

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)

By all students:

- Tuition (auditors pay same fees as other students): $8.50
- Regular students (carrying over 5 units): $8.50
- Limited students (carrying 5 units or less) per unit: 2.50

Materials and service:

- Regular students per unit: 7.50
- Limited students per unit: 7.50

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 fees): 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

<table>
<thead>
<tr>
<th>Term</th>
<th>Units</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>I, six units</td>
<td></td>
<td>$36.00</td>
</tr>
<tr>
<td>II, six units</td>
<td></td>
<td>$36.00</td>
</tr>
<tr>
<td>IIIA, three units</td>
<td></td>
<td>$24.00</td>
</tr>
</tbody>
</table>
GENERAL REGULATIONS

INFORMATION

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

NUMERATING 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 500 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, conditionally passed; W, withdrawal passing; and TF, 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.

Grades 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 TF, 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 degree or a transcript of record at the college to qualify for 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 LIMIT

Students who have completed 0 to 29 units of work are classified as freshmen; 30 to 49 units as sophomores; 50 to 89 units as juniors; and 90 or more as seniors.

A unit of credit represents 50 minutes of lecture or recitation combined with 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.

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 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

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 115) 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 benefiting 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 196 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. Students who 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 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 course of the proper commanding officer must be filed before credit will be accorded. Additional units of credit may be granted to students who have documented 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 curriculum leading to the California teaching credentials. (2) The arts and sciences curriculum.

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

<table>
<thead>
<tr>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Education</td>
</tr>
<tr>
<td>Health Education 21</td>
</tr>
<tr>
<td>English</td>
</tr>
<tr>
<td>Psychology</td>
</tr>
<tr>
<td>Foreign Language (not required in commerce, engineering, or in teacher education in the elementary, junior high and special secondary curricula)</td>
</tr>
<tr>
<td>Social Sciences</td>
</tr>
<tr>
<td>Natural Sciences</td>
</tr>
<tr>
<td>Electives to make total of 90 units, including lower division preparation for the major and minor.</td>
</tr>
</tbody>
</table>

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. (21)
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: anthropology, economics, political science, sociology, and psychology. 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: botany, chemistry, geology, 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, physics, or zoology. 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 completed a year course in high school in either physics or chemistry, or those who have not completed a year course in high school in either chemistry or physics 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, zoology. The laboratory requirement may be satisfied by one of the following college courses:

<table>
<thead>
<tr>
<th>Life Sciences</th>
<th>Physical Sciences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bacteriology 1</td>
<td>Chemistry 1</td>
</tr>
<tr>
<td>Biology 10A and 10B</td>
<td>Chemistry 2A and 2B</td>
</tr>
<tr>
<td>Botany 1</td>
<td>Geology 1A and 1B</td>
</tr>
<tr>
<td>Physiology 1</td>
<td>Physics 4A and 4B</td>
</tr>
<tr>
<td>Zoology 1A</td>
<td>Physics 2A, 2B, 2B.A, and 3B</td>
</tr>
<tr>
<td></td>
<td>Astronomy 1 and 9 and 10</td>
</tr>
</tbody>
</table>

Reduction of unit requirement. 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, 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 each of these subjects in high school or by 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 grade of B or better in which case the repeated course will be classified as a "refresher." Trigonometry, intermediate algebra or solid geometry may repeat the corresponding

Reduction of unit requirement. 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, or zoology taken in the senior year with grade of B or better for the final semester.

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Reduction of unit requirement. 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, or zoology taken in the senior year with grade of B or better for the final semester.

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, 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

<table>
<thead>
<tr>
<th>Major and minor work are required as follows:</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minor (minimum in upper division courses)</td>
<td>9</td>
</tr>
<tr>
<td>Major (upper division courses)</td>
<td>24</td>
</tr>
</tbody>
</table>

At least 40 units in upper division courses must be completed, 50 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.

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.
MAJORS AND MINORS

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 work 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 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 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 the course work has 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 171A and 172B, or Political Science 71A and 71B, or Political Science 130A and 130B, or the equivalents of an examination in American history, institutions and ideals.
3. Completion of Political Science 101, or Political Science 130A and 130B, or the substitutes for that examination enumerated in item 2.
4. Completion of History 8A and 8B, or History 173A and 173B, or History Constitution, or the substitutes for that examination enumerated in item 2.
5. Completion of comparable courses in other institutions of collegiate grade, provided 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: \textit{Professional, Preprofessional, and Vocational Curricula}.
Students who seek more than one teaching credential must complete the requirements 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 obtained 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 courses 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 page.

Minimum Units and Credit Limitations

A minimum of 40 units in upper division courses must be completed. 90 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 90 units and carry upper division units for division courses or upper division credit provided that they have the written approval of the chairmen 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, 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 is 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 six 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 concentration 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 or 36 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 159 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 190, 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, metal-working, and electricity.

A Teaching Minor in Music: Candidates for the teaching minor in music are required to take elementary music courses and to pass auditions. In addition, students must pass written and oral examinations 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 should show credit for Music 1A or 1B when required 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, 6B, 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 (Trehle 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 six units of elective courses in the lower division; nine units chosen from Physical Education 100, 150A, 150B, 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 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, 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, recreation, Spanish, speech arts; also psychology as a nonteaching major with two teaching semester units in the upper division. Some departments permit six units of these 24 mental requirements. In addition to these undergraduate requirements two to six year for the programs for each department, refer to the sections entitled: Curricula requirements for admission to candidacy for the General Secondary Credential. This section also explains the dates 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 for men, physical education for women, physics, recreation, Spanish, and speech. In most fields, six semester units are required in the lower division and nine additional units are required in the upper division for the A.B. degree. This credit must be given the student a recommendation for the credential, for the programs for each department.

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 courses in education may be taken until admission is granted; any exception to this 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 credential:

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 2.0 or better for all credits 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 present, a tentative program approved by the authorized representative of his major field, minor field, and the education department.
9. All applicants must be approved by an interviewing committee of the college faculty. In its evaluation the committee will consider the following factors: by the State Board of Education: intelligence, achievement, 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 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 the 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 the 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.

### Freshman Year

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<tbody>
<tr>
<td>Physical Education (activity courses)</td>
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<tr>
<td>Art 6A-B, Design</td>
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<tr>
<td>English 1, Freshman Comp., English 2, Freshman Lit.</td>
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<tr>
<td>Health Educ. 21, Principles, Psychology 1, General</td>
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<tr>
<td>Physical Science 1A-B, Introduction (if chemistry and physics completed in high school, substitute other sciences. See course description.)</td>
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<tr>
<td>Electives, including social science, minor, or other lower division requirements</td>
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### Sophomore Year

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<tr>
<td>Physical Education (activity courses)</td>
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<tr>
<td>Art 61A, Crafts in the Elementary Schools</td>
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<tr>
<td>Biology 1, Survey (if no laboratory course in high school, take 10A-10B or Botany 1)</td>
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<tr>
<td>Geography 1, Elements (natural science credit) and Geography 2, Regions (social science credit)</td>
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<tr>
<td>Music 1A, Musicianship, and 7A, Materials for Elem. School</td>
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<tr>
<td>Music 2A-2B, Piano (or equivalent by examination) (may be taken in the junior year)</td>
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<tr>
<td>Speech Arts 1, Voice and Diction</td>
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<tr>
<td>Spanish 70, Span. for Elem. School Teachers (not required but recommended if no high school Spanish)</td>
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<tr>
<td>Physical Education 58, P.E. in Elem. School</td>
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<tr>
<td>Electives (complete lower division requirements and minor)</td>
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</table>

### 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 junior 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 the 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.
4. Elect Education 102A or 102B if needed to complete program. Permission to enter these courses must be secured from the instructor.

### Senior Year

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<tbody>
<tr>
<td>Educ. 102A, Measurement, and 102B, Child Growth and Development</td>
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<tr>
<td>Health Educ. 151, For Teachers (taken with practicums)</td>
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<tr>
<td>Education 147, Practicum-Primary Level</td>
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<tr>
<td>Proficiency in use of audio-visual equipment is required by examination. Specific instruction in audio-visual materials is given in each subject matter methods course.</td>
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<tr>
<td>Education 148, Practicum-Intermediate Level</td>
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<tr>
<td>Education 116, Directed Teaching, primary grades</td>
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</tbody>
</table>

### 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 consult with the Director of Secondary Education upon application to teacher education.
P.E. activity courses
Natural Science (include Geog. 1, Elements, Biol. 1, Survey, and Phys. Sci.)
Art 1A or 1B, Intro. See lower division requirements
Engl. 1, Comp., and 2, Lit.
Health Educ. 21, Prim.
Geog. 2, Regions (social science credit)
Electives (to complete lower division requirements)

Sophomore Year
Psychology 1, General
Speech 2A, Fundamentals
Electives (to include preparation for major and minor and completion of lower division requirements)

Junior Year
Health Educ. 151, H. Ed. for Teachers (either semester)
Educ. 184A, Sec. Sch.
Educ. 184B, Dev. and Learning
Electives (to include major and minor)

Senior Year
Educ. 100B, Methods in major and minor subjects
Educ. 184C, Teaching Process
Electives (to include major and minor)

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
P.E. (activity courses)
Aesth. 5, Art Orientation, or 51, Survey of Mexican Art
Aesth. 50, Hist. and Appreciation of Art
Art A-B, Draw., and Comp.
Art 6A-8B, Design
Art 14A, Lettering
Art 615A, Crafts in Elem. Sch.
Art 619, Crafts in Art
Art 620, Crafts in Art
Engl. 1, Comp., and 2, Lit.
Health Educ. 21, Princip.
Natural Sciences (see lower division requirements)
Psychology 1, General
Social Sciences (see lower division requirements)

Upper Division
Aesth. 150, Appreciation and Hist. of Art
Art 100A, Printmaking
Art 112A, Design and Composition
Art 116A, Advanced Painting
Art 119A, Ceramics
Art 120A, Costume Design
Art 120B, Design
Electives in upper division art
Speech Arts 140A, Stage Design
Health Educ. 151, H. Ed. for Teachers
Educ. 184A, Secondary School
Educ. 184B, Development and Learning
Educ. 184C, Teaching Process
Educ. 119, Art in Elem. Sch.
Educ. 100B A, Methods in Art and in the minor
Educ. 116, Directed Teaching
Electives, including minor

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
Com. 1A-1B, Typewriting (placement exam. before enrollment)
Com. 16A-16B, Secretarial Acctg.
Com. 18A-18B, Com'l Law (should be taken in junior year)
Bus. Educ. Subfield requirements: 9-10
Accounting: Any 9 units selected from Com. 20, 21, 24, 25, or 27.
Acctg.-Secretarial: Com. 5A-5B (placement exam. before enrollment. Should be taken in sophomore year).
Supervision and Mgmt.: Any 9 units selected from Com. 20, 21, 24, 25, or 27.
Secretarial: Com. 5A-5B (placement exam. before enrollment. Should be taken in sophomore year).
Real Estate and Ins.: Any 9 units selected from Com. 20, 21, 24, 25, or 27.

Upper Division
Health Educ. 151, for Teachers
Educ. 120A-121B, Practical Acctg.
Educ. 124A, Dev. and Learning
Educ. 184C, Teaching Process
Educ. 100B-100C, Obj. and Curric. in Bus. Educ.

Bus. Educ. Subfield requirements: 9-10
Accounting: Any 9 units selected from Com. 20, 21, 24, 25, or 27.
Acctg.-Secretarial: Com. 5A-5B (placement exam. before enrollment. Should be taken in sophomore year).
Supervision and Mgmt.: Any 9 units selected from Com. 20, 21, 24, 25, or 27.
Secretarial: Com. 5A-5B (placement exam. before enrollment. Should be taken in sophomore year).
Real Estate and Ins.: Any 9 units selected from Com. 20, 21, 24, 25, or 27.

General college requirements: 34-49
P. E. (activity courses) (2)
Engl. 8, Bus. Engl. (3)
Engl. 2 Freshman Lit. (3)
Psych. 1, General (3)
Geog. 1, Elements (a social science) (3)
Geog. 10, Economic (a social science) (3)
Natural Science (in addition to Geog. 10 and Econ. 1A-1B) (4-8)
Electives (3-8)

32-24733

PROFESSIONAL CURRICULA IN EDUCATION

32
### 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 \textit{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 6 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.

#### Lower Division

<table>
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<tr>
<th>Course Description</th>
<th>Units</th>
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<tbody>
<tr>
<td>P.E. (activity course)</td>
<td>2</td>
</tr>
<tr>
<td>Engl. 1, Comp., and 2, Lit.</td>
<td>6</td>
</tr>
<tr>
<td>Social Science</td>
<td>9-12</td>
</tr>
<tr>
<td>Natural Science</td>
<td>9-12</td>
</tr>
<tr>
<td>Psychology 1, General</td>
<td>3</td>
</tr>
<tr>
<td>Health Educ. 21, Principles</td>
<td>2</td>
</tr>
<tr>
<td>Music 1A-3A,4A,6A,7A,9A</td>
<td>6</td>
</tr>
<tr>
<td>Music 2A,3A,6A,9A</td>
<td>3</td>
</tr>
<tr>
<td>Music 29 or 17, and 18, Applied</td>
<td>(Must show 4 units in voice and 4 units in piano. May be taken in lower or upper division.)</td>
</tr>
<tr>
<td>Music 9, 10, 11, 12, 13, 14, 15, 20, 25, 29, or 30, Activities</td>
<td>0-3</td>
</tr>
<tr>
<td>Aesth. 1A-1B, Survey</td>
<td>4</td>
</tr>
<tr>
<td>Minor (English, social science, or natural science recommended)</td>
<td>0-6</td>
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</table>

#### Upper Division

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Units</th>
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<tbody>
<tr>
<td>Aesth. 102A-102B, Mus. Hist.</td>
<td>4</td>
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<tr>
<td>Music 106, Counterpoint</td>
<td>2</td>
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<tr>
<td>Music 107, Form and Analysis</td>
<td>2</td>
</tr>
<tr>
<td>Music 110A, Instrumental Conducting</td>
<td>1</td>
</tr>
<tr>
<td>Music 120A, Vocal Conducting</td>
<td>2</td>
</tr>
<tr>
<td>Music 121A, Instrumentation</td>
<td>2</td>
</tr>
<tr>
<td>Music 111, 112, 113, 115, 126, or 130, Activities</td>
<td>3-0</td>
</tr>
<tr>
<td>Music 117 or 118, Applied (Must show 4 units in voice and 4 units in piano. May be taken in upper or lower division.)</td>
<td>8-0</td>
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<tr>
<td>Minor (English, social science, or natural science recommended)</td>
<td>0-6</td>
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</tbody>
</table>

### 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

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Units</th>
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<tbody>
<tr>
<td>Health Ed. 151, For Teachers</td>
<td>2</td>
</tr>
<tr>
<td>Educ. 184A, Sec. Sch.</td>
<td>4</td>
</tr>
<tr>
<td>Educ. 184B, Dev. and Learning</td>
<td>4</td>
</tr>
<tr>
<td>Educ. 184C, Teaching Process</td>
<td>4</td>
</tr>
<tr>
<td>Educ. 100B-PE, Methods in P.E. and in minor</td>
<td>4</td>
</tr>
<tr>
<td>Educ. 116, Directed Teaching</td>
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<tr>
<td>Physical Education</td>
<td>25-26</td>
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<tr>
<td>Physiol. of Exercise</td>
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<tr>
<td>Physiol. of Exercise</td>
<td>3</td>
</tr>
<tr>
<td>Physiol. of Exercise</td>
<td>2</td>
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<tr>
<td>Physiol. of Exercise</td>
<td>2</td>
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<tr>
<td>Minor</td>
<td>9</td>
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<td>Electives</td>
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#### Upper Division

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Units</th>
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<tbody>
<tr>
<td>Health Ed. 151, For Teachers</td>
<td>2</td>
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<tr>
<td>Educ. 184A, Sec. Sch.</td>
<td>4</td>
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<tr>
<td>Educ. 184B, Dev. and Learning</td>
<td>4</td>
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<tr>
<td>Educ. 184C, Teaching Process</td>
<td>4</td>
</tr>
<tr>
<td>Educ. 145, Organization and Admin. of Mus. Educ.</td>
<td>2</td>
</tr>
<tr>
<td>Educ. 100B-ML, Methods in music major and in minor subject</td>
<td>4</td>
</tr>
<tr>
<td>Educ. 116, Directed Teaching</td>
<td>6</td>
</tr>
</tbody>
</table>
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 high, junior high, and elementary schools.

**Lower Division Units**

<table>
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<tr>
<th>Course</th>
<th>Units</th>
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<tbody>
<tr>
<td>English, Comp., and 2 Lit.</td>
<td>6</td>
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<tr>
<td>Speech 2A, Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>Natural Science (including Biol., Survey, or equivalent; Zoo. Hist.</td>
<td>2</td>
</tr>
<tr>
<td>Medical Anatomy; Physiol. 1A, and 1C (if laboratory course needed),</td>
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<tr>
<td>Human Physiology; and a physical science, if needed)</td>
<td>9-12</td>
</tr>
<tr>
<td>Psychology 1, General</td>
<td>3</td>
</tr>
<tr>
<td>Health Educ. 21, Principles</td>
<td>2</td>
</tr>
<tr>
<td>Physical Education</td>
<td>13</td>
</tr>
<tr>
<td>P.E. 1A, Fund. Skills</td>
<td>2</td>
</tr>
<tr>
<td>P.E. 2A, Folk Dancing</td>
<td>2</td>
</tr>
<tr>
<td>P.E. 3A-3B, Mod. Dance</td>
<td>1</td>
</tr>
<tr>
<td>P.E. 4, Fieldball, Soccer, and Speedball</td>
<td>1</td>
</tr>
<tr>
<td>P.E. 5, Softball, Volleyball, and Hockey</td>
<td>1</td>
</tr>
<tr>
<td>P.E. 6, Basketball</td>
<td>1</td>
</tr>
<tr>
<td>P.E. 13A, Archery</td>
<td>2</td>
</tr>
<tr>
<td>P.E. 14A, Badminton</td>
<td>2</td>
</tr>
<tr>
<td>P.E. 18A, Tennis</td>
<td>1</td>
</tr>
<tr>
<td>P.E. 51, First Aid and Safety</td>
<td>2</td>
</tr>
<tr>
<td>P.E. 3S, In Elem. Sch.</td>
<td>2</td>
</tr>
<tr>
<td>P.E. 16, Intro</td>
<td>2</td>
</tr>
<tr>
<td>Minor Electives</td>
<td>6</td>
</tr>
<tr>
<td>Electives</td>
<td>3-9</td>
</tr>
</tbody>
</table>

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

**Upper Division Units**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Education</td>
<td>27</td>
</tr>
<tr>
<td>155, Appl. Anat. and Kines</td>
<td>3</td>
</tr>
<tr>
<td>156A-156B, Sports Methods</td>
<td>4</td>
</tr>
<tr>
<td>160, Teaching Body Mech.</td>
<td>2</td>
</tr>
<tr>
<td>161, Folk Dancing Materials and Adv. Techniques</td>
<td>2</td>
</tr>
<tr>
<td>194A-194B, Methods in Modern Dance</td>
<td>4</td>
</tr>
<tr>
<td>198, Physiol. of Exercise</td>
<td>3</td>
</tr>
<tr>
<td>170B, Rec'1 Leadership</td>
<td>2</td>
</tr>
<tr>
<td>177, Ind. Prog. Adapt.</td>
<td>3</td>
</tr>
<tr>
<td>185, Tech. of Ind. Sports</td>
<td>1</td>
</tr>
<tr>
<td>190, A. Admin. of P.E. in Sch.</td>
<td>3</td>
</tr>
<tr>
<td>Health Educ. 151, For Teachers</td>
<td>2</td>
</tr>
<tr>
<td>Educ. 184A, Sec. Sch.</td>
<td>4</td>
</tr>
<tr>
<td>Educ. 184B, Devel. and Learning</td>
<td>4</td>
</tr>
<tr>
<td>Educ. 184C, Teaching Process</td>
<td>4</td>
</tr>
<tr>
<td>Educ. 100B-PE, Methods in P.E. and in minor</td>
<td>4</td>
</tr>
<tr>
<td>Educ. 116, Directed Teaching</td>
<td>6</td>
</tr>
<tr>
<td>Minor Electives</td>
<td>3</td>
</tr>
</tbody>
</table>

**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**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychology 1, General</td>
<td>3</td>
</tr>
<tr>
<td>Speech Arts 2A, Fundamentals of Public Speaking, or equivalent</td>
<td>3</td>
</tr>
<tr>
<td>Speech Arts 11A or 11B, Interpretation</td>
<td>3</td>
</tr>
<tr>
<td>Speech Arts electives</td>
<td>6</td>
</tr>
</tbody>
</table>

**Upper Division Units**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speech Arts 150, Phonetics</td>
<td>3</td>
</tr>
<tr>
<td>Speech Arts 221, Articulatory Problems of Speech or Education 176,</td>
<td>3</td>
</tr>
<tr>
<td>Problems of Speech Correction and Articulation</td>
<td>3</td>
</tr>
<tr>
<td>Speech Arts 179A-179B or Education 178A-179B, Nervous Speech Disorders</td>
<td>6</td>
</tr>
<tr>
<td>Psychology 161, Foundations of Personality</td>
<td></td>
</tr>
</tbody>
</table>

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 advisor appointed by the Dean of Education.
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 361A, 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. A master's degree in psychology or educational psychology.
4. Each applicant must complete the following course requirements:
   a. Child development, mental hygiene, and counseling and guidance, including interviewing:
      Units
      Education 102B, Child Growth and Development, or Psychology 100, Development Psychology 3
      Psychology 132, Personality Adjustment 2
      Psychology 150, 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 211, Field Work in Social Case Work 3
      Psychology 211, Introduction to Clinical Appraisal or Psychology 211, Advanced Clinical Psychology 3
   c. Educational psychology and educational measurements including field work and elementary and secondary 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 2
   d. Individual and group mental tests including field work:
      Psychology 195A, Introduction to Psychological Testing 3
      Psychology 100B, Individual Mental Testing 3
      Psychology 200, 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 170A, 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 36 semester units of training distributed approximately as follows and approved by the credential advisor:
   a. Six units selected from the following: Education 102A, or Education 102D; Education 102B or Education 102C; Education 150.
   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 respective area desired, then continue with the graduate program. For further details regarding upper division requirements, 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 384A, The Secondary School 4
Education 384B, Development and Learning 4
Education 384C, 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 6 semester units 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 160B, Methods of Teaching (in the major and minor subjects) (available Fall Semester only) 4
   Education 250, Curricular Problems of the Secondary School 3
   Education 250, 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:

<table>
<thead>
<tr>
<th>Graduate Year</th>
<th>Art 200A-200B, Special Problems in Art</th>
<th>4</th>
</tr>
</thead>
</table>

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.

<table>
<thead>
<tr>
<th>Lower Division</th>
<th>Art A-B, Drawing and Composition</th>
<th>2.4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Art 6A-6B, Design</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Art elective (Art 14A, Lettering, recommended)</td>
<td>0.2</td>
</tr>
<tr>
<td></td>
<td>Aesthetics 50, Appreciation and History of Art</td>
<td>2</td>
</tr>
</tbody>
</table>

| Upper Division | Aesthetics 5, Art Orientation, or Art 51, Survey of Mexican 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:

<table>
<thead>
<tr>
<th>Graduate Year</th>
<th>Select four units from the following: Commerce 208, Secretarial Administration</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Commerce 213, Problems in Business Education</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Commerce 223, Problems of Distributive Business</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Commerce 223, Administration and Supervision of Business Education</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Commerce 290, Advanced Problem Analysis (Accounting)</td>
<td>2</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Lower Division</th>
<th>Commerce 14A-14B, Principles of Accounting</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Economics 1A-1B, Principles of Economics</td>
<td>6</td>
</tr>
</tbody>
</table>

| Upper Division | Upper division commerce courses selected with approval of the departmental representative | 9 |

PROFESSIONAL CURRICULA IN EDUCATION

Major in Chemistry

<table>
<thead>
<tr>
<th>Lower Division</th>
<th>Chemistry 1A-1B, General</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Chemistry 5, Quantitative Analysis</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Mathematics 1A-1B, Mathematical Analysis, or 3A-3B, Plane Analytic Geometry and First Course in Calculus, and 4A-4B, Second and Third Course in Calculus</td>
<td>6-12</td>
</tr>
<tr>
<td></td>
<td>Physics 2A-2B, General, and 3A-3B, Physical Measurements (or 4A-4B-4C, Principles)</td>
<td>8-12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Upper Division</th>
<th>Chemistry 101, 102, 103, Organic Chemistry</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Chemistry 305, Advanced Quantitative Analysis</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Chemistry 110A-110B, Physical Chemistry</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Electives in upper division chemistry, or electives in a related field approved by the departmental representative</td>
<td>5</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Lower Division</th>
<th>Chemistry 1A-1B, General</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Chemistry 5, Quantitative Analysis</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Physics 2A-2B, General, and 3A-3B, Physical Measurements (or 4A-4B-4C, Principles)</td>
<td>8-12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Upper Division</th>
<th>Chemistry 101, Organic</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Electives in upper division chemistry selected with approval of departmental representative</td>
<td>5</td>
</tr>
</tbody>
</table>

Major in Economics

<table>
<thead>
<tr>
<th>Lower Division</th>
<th>Economics 1A-1B, Principles of Economics</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lower division year course in history, political science or sociology</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Upper Division</th>
<th>Economics 100A-100B, Intermediate Economic Theory</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Economics electives, including a maximum of six units in a related field approved by the departmental representative</td>
<td>18</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Lower Division</th>
<th>Economics 1A-1B, Principles of Economics</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A year course in another social science area</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Upper Division</th>
<th>Economics 100A, Intermediate Economic Thought</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Upper division economics courses selected under the supervision of the departmental representative</td>
<td>6</td>
</tr>
</tbody>
</table>
### Major in English

#### Lower Division
- English 1 or 41, Composition ................................................................. 3
- One year-course from lower division English electives ........................ 6
- Lower division English electives ......................................................... 6

#### Upper Division
- Upper Division English courses selected under the supervision of the departmental representative .......................... 24

#### Graduate Year
- One of the graduate seminars .............................................................. 2
- English 192, The English Language (if not taken as an undergraduate) or 194, 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.

#### Lower Division
- Lower division English courses to be selected under supervision of departmental representative .......................... 9

#### Upper Division
- 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.

#### Lower Division
- French 1, 2, 3, 4, 5, or 6 or equivalents .................................................. 15-16
- History 4A-4B, History of Modern Europe, or equivalent ......................... 6

#### Upper Division
- 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.

#### Lower Division
- 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

#### Upper Division
- Health Education 151, Health Education for Teachers ............................ 2
- Health Education 152, Health Education Programs .................................. 3
- Health Education 153, Administration of School Health Programs ............. 3
- Health Education 190, Special Study in Health ................................. 1-3

### 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.

#### Lower Division
- History 20A-20B, 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.

#### Upper Division
- History 190, Special Course for Advanced Students ................................ 2
- United States History course ................................................................. 3-6
- Select from 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

#### Graduate Year
- History 270A-270B, Seminar ............................................................... 2-2

### 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.

#### Lower Division
- Home Economics 5, Food Preparation .................................................... 3
- Home Economics 11, Clothing Design .................................................. 3
- Electives in Home Economics ............................................................... 0-3

#### Upper Division
- 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
- Industrial Arts 41, Elements of Metalwork: 3
- Industrial Arts 61, Elements of Woodwork: 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

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 1B, Introduction: 4-8
- Zoology 20, Human Anatomy and Physiology: 3
- Chemistry 1A-1B, General, or 2A-2B, Fundamentals: 3
- Physics 2A-2B, General, or 3A-3B, Physical Measurements: 3

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

**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**
- Botany 30A-30B, General Botany, or Zoology 1A-1B, General Zoology: 6-8
- Botany 2A-2B, General Botany, or Botany 1, Introduction: 4-8

**Upper Division**
Upper division courses in Zoology and Botany to be selected with approval of the departmental representative: 9

Major in Mathematics

**Units**
- Mathematics 3A, Plane Analytical Geometry: 3
- Mathematics 3B, First Course in Calculus: 3
- Mathematics 4A, Second Course in Calculus: 3

Suggested courses in related areas:
- Astronomy 1, Descriptive Astronomy: 3
- Commerce 2, Mathematics of Finance: 3
- Engineering 1A, Plane Surveying: 3
- Engineering 21, Descriptive Geometry: 3
- Physics 4A, Mechanics of Solids and Fluids: 3
- Physics 2A, General: 3

**Upper Division**
- At least one course in Mathematics: 3
- At least one course in Physics: 3
- Mathematics 140A, Mathematical Statistics: 3
- Mathematics 157, 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: 2
  - 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: 6

(See above under teaching major in mathematics)

**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: 3

(See above under teaching major in mathematics)

**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: 2-2
  - Music 200A-200B, Special Problems in Music
  - Music 206, MusicoLOGY
  - Music 206, Composition: 2

**Units**
- Music 200A-200B, Special Problems in Music: 2-2
- Music 206, Musicology: 2
- Music 206, Composition: 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 the following courses in his major:

- Select two courses from the following:
  - Physical Education 200, Evaluation Procedures in Health, Physical Education, and Recreation
  - Physical Education 201, Developmental Physical Education
  - Physical Education 202, Problems in Health Education
  - Physical Education 203, Problems in Physical Education
  - Physical Education 204, Problems in Recreation

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.

Major 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.

### 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

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music 1A or equivalent, and 1B, Musicianship</td>
<td>2-5</td>
</tr>
<tr>
<td>Music 4A-4B, Elementary Harmony</td>
<td>6</td>
</tr>
<tr>
<td>Aesthetics 1A-1B, Survey of Music</td>
<td>4</td>
</tr>
<tr>
<td>Music activities selected from Music 11, 12, 13, 15, 20, 26, 30</td>
<td>0-2</td>
</tr>
</tbody>
</table>

#### Upper Division

- Select 9 units with approval of departmental representative from:
  - Aesthetics 302A-302B, Music History
  - Aesthetics 100, Great Music
  - Music 105A-105B, Advanced Harmony and Composition
  - Music 106, Counterpoint
  - Music 107, Form and Analysis
  - Music 118A, Instrumental Conducting
  - Music 120A, Vocal Conducting
  - Music 121A-121B, Instrumentation and Arranging
  - Music 117A-117B, Advanced Individual Study of Voice
  - Music 118A-118B, Advanced Individual Study of Piano or Organ

### Major in Physical Education

- 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 major.

### Minor in Physical Education

- 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.

### Upper Division

- Select 9 units with approval of departmental representative from:
  - Aesthetics 302A-302B, Music History
  - Aesthetics 100, Great Music
  - Music 105A-105B, Advanced Harmony and Composition
  - Music 106, Counterpoint
  - Music 107, Form and Analysis
  - Music 118A, Instrumental Conducting
  - Music 120A, Vocal Conducting
  - Music 121A-121B, Instrumentation and Arranging
  - Music 117A-117B, Advanced Individual Study of Voice
  - Music 118A-118B, Advanced Individual Study of Piano or Organ
<table>
<thead>
<tr>
<th>Major in Physics</th>
<th>Lower Division</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physics 4A-4B-4C, Principles, or equivalent</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Chemistry 1A-1B, General</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Mathematics 3A-3B, Plane Analytic Geometry and First Course in Calculus</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Mathematics 4A-4B, Second and Third Course in Calculus</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Upper Division</td>
<td>Physics 105A-105B, Analytical Mechanics</td>
<td>6</td>
</tr>
<tr>
<td>Physics 110, Alternating Current Circuits</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Physics 102, Basic Electronics or 170, Electromagnetic Theory</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Physics 106, Special Study</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Minor in Physics</th>
<th>A minimum of 21 semester units, of which at least nine units shall be upper division or graduate courses, must be completed.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Division</td>
<td>Physics 4A-4B-4C, Principles, or equivalent</td>
</tr>
<tr>
<td>Chemistry 1A-1B, General</td>
<td>10</td>
</tr>
<tr>
<td>Mathematics 3A, Plane Analytic Geometry, 3B, First Course in Calculus, 4A-4B, Second and Third Course in Calculus</td>
<td>12</td>
</tr>
</tbody>
</table>

| Upper Division | Upper division courses to be selected with approval of departmental representative | 9 |

<table>
<thead>
<tr>
<th>Major in Psychology</th>
<th>This major can be used for a General Secondary Credential only if the candidate completes two teaching minors.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Division</td>
<td>Psychology 5 and 6, Principles</td>
</tr>
<tr>
<td>Psychology 1, General</td>
<td>3</td>
</tr>
<tr>
<td>Upper Division</td>
<td>Psychology 104A, Statistical Methods</td>
</tr>
<tr>
<td>Psychology 105B, Social Psychology</td>
<td>3</td>
</tr>
<tr>
<td>Psychology 131, Foundations of Personality</td>
<td>3</td>
</tr>
<tr>
<td>Psychology 132, Personality Adjustment</td>
<td>2</td>
</tr>
<tr>
<td>Psychology 151, Introduction to Clinical Appraisal</td>
<td>3</td>
</tr>
<tr>
<td>Psychology 100A, Experimental Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

| Graduate Year | Psychology 201, Seminar in Psychology | 2 |
| Education 230, Guidance Problems in Secondary Education | 2 |

<table>
<thead>
<tr>
<th>Major in Spanish</th>
<th>A minimum of 21 semester units, of which at least nine units shall be upper division or graduate courses, must be completed.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Division</td>
<td>Spanish 1, 2, 3, 4, 5, 6, or the equivalents</td>
</tr>
<tr>
<td>Spanish 101A-101B, Conversation and Composition</td>
<td>6</td>
</tr>
<tr>
<td>French 1, 2, 3, 4, 5, 6, or the equivalents</td>
<td>16</td>
</tr>
<tr>
<td>History 4A-4B, or 8A-8B</td>
<td>6</td>
</tr>
</tbody>
</table>

| Upper Division | Spanish 101A-101B, Conversation and Composition | 6 |
| French 101A-101B, Conversation and Composition | 6 |
| Spanish 199 or French 199, Comprehensive Reading and Survey Course | 3 |

<table>
<thead>
<tr>
<th>Major in Recreation for Men or Women</th>
<th>Minimum of 21 semester units, of which at least nine units shall be upper division or graduate courses, must be completed.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Division</td>
<td>Physical Education 51, First Aid and Safety Education</td>
</tr>
<tr>
<td>Physical Education 33, Physical Education in Elementary Schools</td>
<td>2</td>
</tr>
</tbody>
</table>

| Upper Division | Physical Education 105, Administration of Community Recreation | 3 |
| Physical Education 170, Recreational Leadership | 3 |
| Physical Education 184, Field Work in Recreation | 1-3 |
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 contact 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 38 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 ELEMENTARY 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:
   i. The evolution of educational thought and practice as to the function of the school in a democratic society, with emphasis on the elementary school.
   ii. 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.
   iii. 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, of California, civics including the Constitution of the United States, music, art, physical education, healthful living, morals and manners.
   iv. The use of audio-visual aids in instruction.
   v. 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.
   vi. Sixty-one semester units or the equivalent in basic subject fields, distributed approximately as follows:
      i. 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 is balanced by the social and cultural content of the social studies program.
      ii. Science. Twelve semester units, or the equivalent, in the fields of physical and biological science, with emphasis upon the study and use of scientific principles.

BACHELOR OF EDUCATION DEGREE

(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.

c. 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. 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, the teaching profession. Students may elect to concentrate in 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:

A. 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.

B. 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.

C. Grade point average of 2.0 in all work taken after the bachelor's degree. (Grade of A, 3 grade points; B, 2 grade points; C, 1 grade point; D, 0 grade points).

D. Completion of the requirements for an approved California teaching credential, or the holding of one, such as the general elementary, general secondary, junior high, and special secondary school credentials.

E. Satisfactory completion of the candidate's degree program as approved by the Graduate Committee.

ADMISSION TO GRADUATE STUDY

A. Graduate Status may be granted to applicants who have regularly applied and have filed official transcripts as evidence of their possession of a bachelor's degree from an accredited institution.

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

ADMISSION TO CANDIDACY

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

A. Apply for admission to candidacy at the 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 completed 12 units at San Diego State College, or six units if his undergraduate grade point average was 1.5 or better.

B. Earn and maintain a grade point average of 2.0 on all graduate work.

C. Satisfactorily complete the following: (1) Scholastic Aptitude Test for Graduates, (2) Academic Achievement Test, (3) Personal Interviews and Speech Test, and (4) Health and Physical Examination.

D. Secure advisor's approval of: (1) A complete program of study for the degree, and (2) a master's project or 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 collegiate work, are offered. Curricular outlines of preprofessional study.

### CURRICULUM IN PLANT SCIENCE

<table>
<thead>
<tr>
<th>Units</th>
<th>Freshman Year</th>
<th>Sophomore Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>2nd</td>
<td>1st</td>
</tr>
<tr>
<td>P.E. (activity courses)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Health Ed. 21, Principles</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Chem. 1A-1B, General</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Botany 2A-2B, General</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Physics 2A-2B, General</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>English 1, Composition</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

### CURRICULUM IN ANIMAL SCIENCE

<table>
<thead>
<tr>
<th>Units</th>
<th>Freshman Year</th>
<th>Sophomore Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>2nd</td>
<td>1st</td>
</tr>
<tr>
<td>P.E. (activity courses)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Health Ed. 21, Principles</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Chem. 1A-1B, General</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Botany 1A, General</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Geology 1A, Physical, or 2A, General</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Biology 1A, General</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Zoology 1A, General</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Psychology 1, General</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

### 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

<table>
<thead>
<tr>
<th>Units</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>P.E. (activity courses)</td>
<td>2</td>
</tr>
<tr>
<td>Engl. 8, Bus. Engl., and 2, Lit.</td>
<td>6</td>
</tr>
<tr>
<td>Health Educ. 21, Principles</td>
<td>2</td>
</tr>
<tr>
<td>Psychology 1, General</td>
<td>3</td>
</tr>
<tr>
<td>Natural Science (including Geog., 1, except for Marketing field)</td>
<td>9-12</td>
</tr>
<tr>
<td>Hist. Pol. Sci., or Sociology</td>
<td>3-6</td>
</tr>
<tr>
<td>Geog. 10, Economic, except for Marketing field</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Sub-fields

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

- **Marketing:**
  - Com. 20, Consumer Problems: 3
  - Com. 24, Merchandising: 3
  - Com. 25, Salesmanship: 3
  - Com. 27, Advertising Prin.: 3
  - Art 7, Line, Color, Display: 2
  - Com. 5A-5B, Shorthand: 10
  - Personnel Administration:
    - Com. 3A, Rotary Calculator: 1
    - Com. 3B, Key-driven Calculator: 1
    - Com. 20, Consumer Problems: 3
    - Psych. 11, Applied: 3

#### Upper Division

| Minor (in addition to courses applied toward the major) | 9 |
| Major (in addition to courses applied toward the 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 321, Business Administration; and 15 units selected from one of the following groups:

- **B. Banking and Finance:** Com. 133, 134, 157, 154; Econ. 131, 135, 142.
- **C. Business Administration:** Com. 119A-119B, 125, 126, 127A, 133, 134, 137, 153, 154, 158; Econ. 128, 135, 142, 150, 166, 170.
- **D. Marketing:** Com. 120, 123, 124, 137, 153, 154, 180, 183, 187A-187B, 188, 189, 196; Home Econ. 160A-160B.
- **E. Insurance:** Com. 119A-119B, 125, 126, 127A-127B, 128A-128B, 128C.
- **F. Personnel Administration:** Com. 103A, 121, 153, 154; Econ. 150, 151, 154, 185; Psych. 106A, 121, 145, 152.
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

<table>
<thead>
<tr>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman Year</td>
</tr>
<tr>
<td>1st Sem.</td>
</tr>
<tr>
<td>P. E. (activity courses)</td>
</tr>
<tr>
<td>Health Ed. 21, Principles</td>
</tr>
<tr>
<td>Chem. 1A-1B, General</td>
</tr>
<tr>
<td>Phys. 2A-2B, General</td>
</tr>
<tr>
<td>Phys. 3A-3B, Physical Meas.</td>
</tr>
<tr>
<td>Engl. 1, Comp., and 2, Lit.</td>
</tr>
<tr>
<td>Psych. 1, General</td>
</tr>
<tr>
<td>Elective</td>
</tr>
<tr>
<td>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sophomore Year</td>
</tr>
<tr>
<td>1st Sem.</td>
</tr>
<tr>
<td>P. E. (activity courses)</td>
</tr>
<tr>
<td>Chem. 5, Quantum, Anal.</td>
</tr>
<tr>
<td>Zoo. 1A-1B, General</td>
</tr>
<tr>
<td>Math. C, Int. Alg., and D</td>
</tr>
<tr>
<td>Soc. Sci. (year course selected from Anth. 1A-1B, General; Econ. 1A-1B, Principles; History 4A-4B, Modern Europe or 5A-5B, the Americas, or 17A-17B, Amer. Civilization; Pol. Sci. 1A-1B, Intro. to Government)</td>
</tr>
<tr>
<td>Elective (a course in public speaking is recommended)</td>
</tr>
<tr>
<td>16</td>
</tr>
</tbody>
</table>

Upper Division

The following courses are suggested for a third year in preparation for dentistry prescribed 60 units.

<table>
<thead>
<tr>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Junior Year</td>
</tr>
<tr>
<td>1st Sem.</td>
</tr>
<tr>
<td>Chem. 101, Intro. Organic, and 102, Lab.</td>
</tr>
<tr>
<td>Zoo. 106, Comp. Anat. of Ver-tebrates</td>
</tr>
<tr>
<td>Zoo. 109, Embryology</td>
</tr>
<tr>
<td>Art 110 A, Ceramics (see prerequisites)</td>
</tr>
<tr>
<td>Psych. 11, Applied</td>
</tr>
<tr>
<td>Additional Year Course in Soc. Sci.</td>
</tr>
<tr>
<td>Electives</td>
</tr>
<tr>
<td>16</td>
</tr>
</tbody>
</table>

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; trigonometry, 1 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.

<table>
<thead>
<tr>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman Year</td>
</tr>
<tr>
<td>1st Sem.</td>
</tr>
<tr>
<td>P. E. (Activity courses)</td>
</tr>
<tr>
<td>Math. 3A, Anal. Geom.</td>
</tr>
<tr>
<td>Math. 3B, 1st Course</td>
</tr>
<tr>
<td>Calculus</td>
</tr>
<tr>
<td>Math. 4A, 2d Course Calculus</td>
</tr>
<tr>
<td>Phys. 4A, Mechanics</td>
</tr>
<tr>
<td>Phys. 4B, Electricity</td>
</tr>
<tr>
<td>Chem. 1A-1B, General</td>
</tr>
<tr>
<td>Engl. 1, Freshman Composition</td>
</tr>
<tr>
<td>H. Ed. 21, Principles</td>
</tr>
<tr>
<td>Psych. 1, General</td>
</tr>
<tr>
<td>Electives</td>
</tr>
<tr>
<td>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sophomore Year</td>
</tr>
<tr>
<td>1st Sem.</td>
</tr>
<tr>
<td>P. E. (Activity courses)</td>
</tr>
<tr>
<td>Math. 4A, 2d Course Calculus</td>
</tr>
<tr>
<td>Math. 4B, 3d Course Calculus</td>
</tr>
<tr>
<td>Phys. 4B, Electricity</td>
</tr>
<tr>
<td>Phys. 4C, Heat, Sound, Light</td>
</tr>
<tr>
<td>Chem. 1A-1B, Principles</td>
</tr>
<tr>
<td>Engl. 21, Descriptive Engr. 23, Materials</td>
</tr>
<tr>
<td>Electives (see below)</td>
</tr>
<tr>
<td>16</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>For Civil Engineering</td>
</tr>
<tr>
<td>1st Sem.</td>
</tr>
<tr>
<td>Engr. 1A-1B, Plane Surveying</td>
</tr>
<tr>
<td>For Mechanical, Electrical and Aeronautical Engineering</td>
</tr>
<tr>
<td>1st Sem.</td>
</tr>
<tr>
<td>Engr. 1A, Plane Surveying</td>
</tr>
<tr>
<td>For Chemical Engineering</td>
</tr>
<tr>
<td>1st Sem.</td>
</tr>
<tr>
<td>Chem. 5, Quantitative Analysis</td>
</tr>
</tbody>
</table>

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.
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 major by the end of the junior year, for departmental approval, at the beginning of the junior year. Any subsequent deviation from this plan must be approved by the department.

<table>
<thead>
<tr>
<th>Requirements for Various Fields of Specialization:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional requirements for various fields of specialization:</td>
</tr>
<tr>
<td>Aeronautical Engineering</td>
</tr>
<tr>
<td>Chemical Engineering</td>
</tr>
<tr>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>Electrical Engineering</td>
</tr>
<tr>
<td>Civil Engineering</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Civil Engineering</th>
<th>Units</th>
<th>1st Year</th>
<th>2d Year</th>
<th>Senior Year</th>
<th>Units</th>
<th>1st Year</th>
<th>2d Year</th>
<th>Senior Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engr. 103, Route, Constr.</td>
<td>3</td>
<td></td>
<td></td>
<td>Engr. 106, Hydraulics Lab.</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Survey</td>
<td></td>
<td></td>
<td></td>
<td>Econ. 131 or 150 or 170</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engr. 131, Adv. Surveying</td>
<td>3</td>
<td></td>
<td></td>
<td>Electives</td>
<td>9</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engr. 134A, Materials of Engr. Lab.</td>
<td>2</td>
<td></td>
<td></td>
<td>Lab.</td>
<td>15</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math. 118A or 119 or 124</td>
<td>3</td>
<td></td>
<td></td>
<td>Astr. 3, Surveyor's Astron.</td>
<td>3</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electives</td>
<td>2</td>
<td></td>
<td></td>
<td>13</td>
<td>16</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Electrical Engineering</th>
<th>Units</th>
<th>1st Year</th>
<th>2d Year</th>
<th>Senior Year</th>
<th>Units</th>
<th>1st Year</th>
<th>2d Year</th>
<th>Senior Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engr. 141, Materials Engr. Lab.</td>
<td>2</td>
<td></td>
<td></td>
<td>Phys. 102, Electronics</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math. 118A or 119 or 124</td>
<td>3</td>
<td></td>
<td></td>
<td>Engr. 129, Heat, Power</td>
<td>2</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Econ. 131 or 150 or 170</td>
<td>3</td>
<td></td>
<td></td>
<td>Electives</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electives</td>
<td>2</td>
<td></td>
<td></td>
<td>16</td>
<td>16</td>
<td>16</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mechanical Engineering</th>
<th>Units</th>
<th>1st Year</th>
<th>2d Year</th>
<th>Senior Year</th>
<th>Units</th>
<th>1st Year</th>
<th>2d Year</th>
<th>Senior Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engr. 141, Materials of Engr. Lab.</td>
<td>2</td>
<td></td>
<td></td>
<td>Engr. 129, Heat, Power</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math. 118A or 119 or 124</td>
<td>3</td>
<td></td>
<td></td>
<td>Lab.</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Econ. 131 or 150 or 170</td>
<td>3</td>
<td></td>
<td></td>
<td>Engr. 145, Internal</td>
<td>3</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electives</td>
<td>2</td>
<td></td>
<td></td>
<td>Combust. Engr.</td>
<td>3</td>
<td></td>
<td></td>
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<tr>
<td>16</td>
<td>16</td>
<td></td>
<td>16</td>
<td>16</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Engineering Economics</th>
<th>Units</th>
<th>1st Year</th>
<th>2d Year</th>
<th>Senior Year</th>
<th>Units</th>
<th>1st Year</th>
<th>2d Year</th>
<th>Senior Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Com. 121, Business Admin.</td>
<td>3</td>
<td></td>
<td></td>
<td>Econ. 170, Gov't and Business</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Econ. 138, Corp. Finance</td>
<td>3</td>
<td></td>
<td></td>
<td>Econ. 150, Labor Problems</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Com. 18A, Commercial Law</td>
<td>3</td>
<td></td>
<td></td>
<td>Econ. 131, Public Finance</td>
<td>3</td>
<td>15</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Econ. 140, Statistics</td>
<td>3</td>
<td></td>
<td></td>
<td>Electives</td>
<td>3</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electives</td>
<td>3</td>
<td></td>
<td></td>
<td>15</td>
<td>16</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Electives must include at least one of the following engineering laboratory courses: 101A, 101B, 106, 129, 141.
### 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, 1 unit; Trigonometry, 1 unit; Physics, 1 unit; Chemistry, 1 unit; History, 1 unit; Geometrical Drawing, 1 unit; foreign language, 2 to 4 units, preferably German or French.

#### Freshman Year

<table>
<thead>
<tr>
<th>Units</th>
<th>1st Sem.</th>
<th>2nd Sem.</th>
</tr>
</thead>
<tbody>
<tr>
<td>P.E. (activity courses)</td>
<td>½</td>
<td>½</td>
</tr>
<tr>
<td>Chem. 1A-1B, General</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Botany 2A-2B, General</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Engl. 1, Comp., and 2, Lit.</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Math. 3A, Plane Anal.</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Geom.</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Math. 3B, first course in Calculus</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

#### Sophomore Year

<table>
<thead>
<tr>
<th>Units</th>
<th>1st Sem.</th>
<th>2nd Sem.</th>
</tr>
</thead>
<tbody>
<tr>
<td>P.E. (activity courses)</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Physics 2A-2B, General</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Physics 3A-3B, Phys. Meas.</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Engr. 1A-1B, Plane Surveying</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Engr. 1A-1B, Principles</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Geology 2A, General</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Health Ed. 21, Principles</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Psychology 1, General</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Chem. 101, Intro. Organic</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

#### Junior Year

<table>
<thead>
<tr>
<th>Units</th>
<th>1st Sem.</th>
<th>2nd Sem.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engr. 124 or Phys. 124</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Radio Meas.</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Engr. 150, Industrial</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>Electron</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Phys. 152, Advanced Electronics</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Phys. 107, Elect. Measurements</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>Eon. 131 or 150 or 170</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>Engr. 101B, Elect. Engr. Lab.</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>Electives</td>
<td>8</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Senior Year

<table>
<thead>
<tr>
<th>Units</th>
<th>1st Sem.</th>
<th>2nd Sem.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home Economics courses to satisfy the general major in home arts should be selected from the following:</td>
<td>15½</td>
<td>15½</td>
</tr>
<tr>
<td>Lower Division</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Home Econ. 161, Clothing Selection</td>
<td>3</td>
<td>Home Econ. 160A, Textiles</td>
</tr>
<tr>
<td>Home Econ. 165, Family Meals</td>
<td>3</td>
<td>Home Econ. 159, Home Management</td>
</tr>
<tr>
<td>Home Econ. 135, Marriage and Family</td>
<td>3</td>
<td>Home Econ. 170, Child Care</td>
</tr>
<tr>
<td>Home Econ. 160A, Textiles</td>
<td>3</td>
<td>Home Econ. 102, Child Growth and Development</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Units</th>
<th>Freshman Year</th>
<th>Sophomore Year</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st</strong></td>
<td><strong>2d</strong></td>
<td><strong>1st</strong></td>
</tr>
<tr>
<td>P. E. (activity courses)</td>
<td>1</td>
<td>P. E. (activity courses)</td>
</tr>
<tr>
<td>Health Educ. 21, Principles</td>
<td>2</td>
<td>Natural Science</td>
</tr>
<tr>
<td>Engl. 1, Comp., and 2, Lit.</td>
<td>3</td>
<td>Econ. 1A-1B, Principles</td>
</tr>
<tr>
<td>Spanish</td>
<td>0-3</td>
<td>Pol. Sci. 1A-1B, Intro., or TlA-TIB, Am. Gov't</td>
</tr>
<tr>
<td>Natural Sci. (including Geog. 1. See lower div. requirements)</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Hist. 8A-8B, Americas</td>
<td>3</td>
<td>Electives (including additional Spanish if needed)</td>
</tr>
<tr>
<td>Psychology, General</td>
<td>2-5</td>
<td>15</td>
</tr>
<tr>
<td><strong>Electives</strong></td>
<td><strong>16</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

### Upper Division

<table>
<thead>
<tr>
<th>Units</th>
<th>Senior Year</th>
<th>Upper Division</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st</strong></td>
<td><strong>2d</strong></td>
<td><strong>1st</strong></td>
</tr>
<tr>
<td>Econ. 190, Foreign Trade</td>
<td>3</td>
<td>Econ. 190, Foreign Trade</td>
</tr>
<tr>
<td>Econ. 198, Invest. and Report</td>
<td>3</td>
<td>Econ. 190, Foreign Trade</td>
</tr>
<tr>
<td>Hist. 161, Mexico and Carrib.</td>
<td>3</td>
<td>Econ. 190, Foreign Trade</td>
</tr>
<tr>
<td>Hist. 162, So. Am. Since</td>
<td>3</td>
<td>Econ. 190, Foreign Trade</td>
</tr>
<tr>
<td>Indep.</td>
<td>3</td>
<td>Econ. 190, Foreign Trade</td>
</tr>
<tr>
<td>Geog. 110, Latin America</td>
<td>3</td>
<td>Econ. 190, Foreign Trade</td>
</tr>
<tr>
<td>Geog. 121, North America</td>
<td>3</td>
<td>Econ. 190, Foreign Trade</td>
</tr>
<tr>
<td>Electives from econ., hist., pol. sci., or geog., to complete the general major</td>
<td>3</td>
<td>Electives</td>
</tr>
<tr>
<td><strong>Electives</strong></td>
<td><strong>15</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

**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.

For 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

<table>
<thead>
<tr>
<th>Units</th>
<th>Freshman Year</th>
<th>Sophomore Year</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st</strong></td>
<td><strong>2d</strong></td>
<td><strong>1st</strong></td>
</tr>
<tr>
<td>P. E. (activity courses)</td>
<td>1</td>
<td>P. E. (activity courses)</td>
</tr>
<tr>
<td>Health Educ. 21, Principles</td>
<td>2</td>
<td>Natural Science</td>
</tr>
<tr>
<td>Engl. 1, Comp., and 2, Lit.</td>
<td>3</td>
<td>Econ. 1A-1B, Principles</td>
</tr>
<tr>
<td>Psych. 1, General; 5, Principles, or 11, Applied</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Hist. 4A-4B, Mod. Eur. or 8A-8B, Americas or 17A-17B Amer. Civ. (if 17A-17B elected, must be in high school)</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Natural Sci. (see lower div. requirements)</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Journ. 92, Special Projects</td>
<td>1</td>
<td>Journ. 92, Special Projects</td>
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<tr>
<td>Commerce 2A, Pers. Use</td>
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<td>Elective</td>
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<tr>
<td>Typewrit.</td>
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</tbody>
</table>

### 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 of 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 of consultation with his adviser.

<table>
<thead>
<tr>
<th>Lower Division</th>
<th>Units</th>
<th>1st</th>
<th>2nd</th>
<th>Sophomore Year</th>
<th>1st</th>
<th>2nd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman Year</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>P.E. (activity courses)</td>
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<td>P.E. (activity courses)</td>
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<tr>
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<tr>
<td>Psychology 1, General</td>
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<td>3</td>
<td>3</td>
<td>*Chem. 5, Quant. Anal.</td>
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<tr>
<td>Chemistry IA-IB, General</td>
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<td>5</td>
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<td>Bacteriology IA, General</td>
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<tr>
<td>English 1, Comp., and 2, Lit.</td>
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<td>3</td>
<td>**Physics 2A, General</td>
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<tr>
<td>Zoö. 1A, General, or Biol.</td>
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<td>3</td>
<td>**Physics 3A, Phys. Meas.</td>
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<tr>
<td>10A-10B, General</td>
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<td>0-3</td>
<td>3</td>
<td>**Phyiology IA, 1C, General</td>
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<td>Social Science</td>
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<td>Foreign Lang. (if needed)</td>
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<tr>
<td>Electives</td>
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<td>3</td>
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<td>(See U.S. Hist. Const. requirements)</td>
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<td>**</td>
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<td>10</td>
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<table>
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<th>Upper Division</th>
<th>Units</th>
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<th>Sr.</th>
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<th>Yr.</th>
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<tr>
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<td>*Chem. 114, 115, 116, Biochem</td>
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<td>Bact. 102, 103, Bact. and Serology</td>
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<td>*Bact. 105, Bact. Metabolism</td>
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<td>*Bact. 106, Virology</td>
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<td>*Zoo. 106, Parasitology</td>
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</tr>
</tbody>
</table>

* 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.

<table>
<thead>
<tr>
<th>Lower Division</th>
<th>Units</th>
<th>1st</th>
<th>2nd</th>
<th>Sophomore Year</th>
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<tr>
<td>P.E. (activity courses)</td>
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<td>P.E. (activity courses)</td>
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<tr>
<td>Health Ed, 21, Principles</td>
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<td>Foreign Lang. (if needed)</td>
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<td>3</td>
<td>3</td>
<td>Natural Science (if needed)</td>
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<tr>
<td>Bacteriology IA-IB, General</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>Physics (6 units selected)</td>
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<td>English 1A-IB, Principles</td>
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<tr>
<td>General, or Biol.</td>
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<td>Philosophy 100A-B</td>
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<td>Social Science</td>
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<td>Com. 441A-44B, Accounting</td>
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<td>Electives</td>
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<td>Pol. Sci.</td>
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<td>15</td>
<td>Electives</td>
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<table>
<thead>
<tr>
<th>Upper Division</th>
<th>Units</th>
<th>Jr.</th>
<th>Sr.</th>
<th>Yr.</th>
<th>Yr.</th>
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<td>*Econ. 133, 150, 151, 170</td>
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<td>History 151A-151B, 172A-172B, 175A-175B</td>
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<td>English 101, 120A-B, 128A-B, 129, 131, 135</td>
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<tr>
<td>*Econ. 142, 171B, 175B</td>
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<tr>
<td>Political Science 139A-139B</td>
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<td>3</td>
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</tr>
<tr>
<td>Sociology 173</td>
<td>3</td>
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</tbody>
</table>

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

Preferred List

- Economics 133, 150, 151, 170
- History 151A-151B, 172A-172B, 175A-175B
- English 101, 110A-B, 111, 128A-B, 131, 135
- Philosophy 121, 129
- Political Science 139A-139B
- Sociology 173

Recommended List

- Economics 102, 110A-B, 111, 128A-B, 131, 135
- History 151A-151B, 172A-172B, 175A-175B
- English 106, 120A-B, 128A-B, 129, 131, 135
- Philosophy 121, 129
- Political Science 105, 111A-111B
- Sociology 173, 174
### 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

<table>
<thead>
<tr>
<th>Units</th>
<th>Freshman Year</th>
<th>Sophomore Year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1st</td>
<td>2nd</td>
</tr>
<tr>
<td>P.E. (activity courses)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>English 1, Comp. and 2, Lit.</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Zoology 1A-1B, General</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Social Science (see lower division requirements)</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Chemistry 1A-1B, General</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Speech 2A, Fundamentals</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Social Science (complete lower div. requirements)</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Electives (see lower div. requirements)</td>
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<td>6</td>
</tr>
</tbody>
</table>

#### 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
- Economic Entomology
- Medical Entomology
- Systematic Entomology
- Zoology
- Parasitology
- General Physiology
- Ecology

### 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 planned for pre-medical work should include an annual course of courses to meet the requirements of the medical college which the student expects to enter.

#### PRE-PROFESSIONAL AND VOCATIONAL CURRICULA

<table>
<thead>
<tr>
<th>Units</th>
<th>Lower Division</th>
<th>Senior Year</th>
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<tr>
<td></td>
<td>1st</td>
<td>2nd</td>
</tr>
<tr>
<td>P.E. (activity courses)</td>
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<td>1</td>
</tr>
<tr>
<td>Health Ed. 21, Principles</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Chemistry 1A-1B, General</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Psych. 1, General</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>English 1, Comp. and 2, Lit.</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>French or German (if needed)</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
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<td>3</td>
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</tbody>
</table>

#### 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.
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, 1 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.

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<tr>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>P.E. (activity courses)</td>
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<td>3</td>
</tr>
<tr>
<td>Chemistry 1A-1B, General</td>
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</tr>
<tr>
<td>English, 1, Comp., and 2, Lit.</td>
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</tr>
<tr>
<td>Speech Arts 2A, Fundamentals</td>
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<td>3</td>
</tr>
<tr>
<td>Foreign Language (if needed)</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Soc. Sci. (or electives)</td>
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Sophomore Year

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<tbody>
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</tr>
<tr>
<td>Physics 2A-2B, General</td>
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<td>3</td>
</tr>
<tr>
<td>Chemistry 3A-3B, Physical Measurement</td>
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<td>1</td>
</tr>
<tr>
<td>Psych. 1, General</td>
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<td>3</td>
</tr>
<tr>
<td>Math. 3A, Plane Anal.</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Physiol. 1A, 1C, Human</td>
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<td>3</td>
</tr>
<tr>
<td>Health Ed. 21, Principles</td>
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</tr>
<tr>
<td>Chem. 101, Intro. Organic</td>
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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, 1 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 pharmacy. Students should ascertain the extent and requirements of the curriculum of the college of pharmacy they expect to enter. Colleges of pharmacy which time for work completed in an institution other than a college of pharmacy. Colleges 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 curriculum are offered:

<table>
<thead>
<tr>
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<tbody>
<tr>
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</tr>
<tr>
<td>English, 1, Comp., and 2, Lit.</td>
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<td>5</td>
</tr>
<tr>
<td>Chemistry 1A-1B, General</td>
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<td>4</td>
</tr>
<tr>
<td>Botany 1, Introduction</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Math, 3A, Plane Anal.</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Geom. or Math, 1, Alg. and Trig. (Prerequisite: Math, C and D or two years of high school algebra and 1 year of Trig.)</td>
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For the Six Year Curriculum

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<td>P.E. (activity courses)</td>
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<td>4</td>
</tr>
<tr>
<td>Foreign Language (if needed)</td>
<td>0-3</td>
<td>0-3</td>
</tr>
<tr>
<td>Social Science (recommend including Hist. 17A-17B)</td>
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<td>6</td>
</tr>
<tr>
<td>Physics 2A-2B, General</td>
<td>3</td>
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</tr>
<tr>
<td>Physics 3A-3B, Phys. Meas.</td>
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<td>3</td>
</tr>
<tr>
<td>Psychology 1, General</td>
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</tr>
<tr>
<td>Health Ed. 21, Prin.</td>
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</tr>
</tbody>
</table>

The following courses are also commonly required or recommended: Chemistry 1A, Human Physiology or Zoology 20, Human Anatomy and Physiology.

PREPROFESSIONAL AND VOCATIONAL CURRICULA

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.

Lower Division

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<tbody>
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<tr>
<td>Health Educ. 21, Prin.</td>
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</tr>
<tr>
<td>Eng. 1, Comp., and 2, Lit.</td>
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<tr>
<td>Psych. 1, Gen., and 5, Prin.</td>
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<tr>
<td>Geog. 1, Elements (Nat. Sci.)</td>
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</tr>
<tr>
<td>Foreign language (if needed)</td>
<td>3</td>
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<tr>
<td>Electives (to include Math C, or equivalent, and completion of lower div. requirements)</td>
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Upper Division

<table>
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<td>Econ. 140, Statistics</td>
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<tr>
<td>Soc. Sci. (Upper div. courses to apply toward the third field for the general major, to be selected in consultation with adviser)</td>
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<tr>
<td>Electives</td>
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Senior Year

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<td>Electives, including upper div. units to complete 40 u. units for graduation</td>
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<td>9</td>
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</table>
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

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Ed. 21, Principles</td>
<td>2</td>
</tr>
<tr>
<td>Phys. Educ.</td>
<td>2</td>
</tr>
<tr>
<td>Activity courses: 3 for men; 6 for women, selected from the following: 2A, 3A, 3B, 4, 5, 6, 9, 11A, 13, 14, 18</td>
<td>2</td>
</tr>
<tr>
<td>Phys. Ed. 43, Prof. Act. (Men)</td>
<td>2</td>
</tr>
<tr>
<td>Phys. Ed. 51, First Aid</td>
<td>2</td>
</tr>
<tr>
<td>Phys. Ed. 53, Phys. Ed. for Elementary Schools</td>
<td>2</td>
</tr>
<tr>
<td>Soc. Sci. (to include Soc. Prob., and 51, Principles)</td>
<td>12</td>
</tr>
<tr>
<td>Psych. 1, General</td>
<td>2</td>
</tr>
<tr>
<td>Foreign Lang. (if two years not completed in high school)</td>
<td>2</td>
</tr>
<tr>
<td>Natural Sci. (Phy. Sci. 10, Photography, or Astronomy 1, Descriptive, Botany 4, Calif. Plants, Geol. 2A, General, include laboratory science if needed)</td>
<td>2</td>
</tr>
<tr>
<td>Eng. 1, Comp. and 2, Lit.</td>
<td>2</td>
</tr>
<tr>
<td>Speech Arts 2A, Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>8-8</td>
</tr>
<tr>
<td>Prepare for U. S. Constitution and American History graduation requirements.</td>
<td>90</td>
</tr>
</tbody>
</table>

Upper Division

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Major</td>
<td>96</td>
</tr>
<tr>
<td>1. Sociology: 9-15 units selected from:</td>
<td></td>
</tr>
<tr>
<td>173, Criminology and Psychology</td>
<td>3</td>
</tr>
<tr>
<td>*174, Juvenile Delinquency</td>
<td>3</td>
</tr>
<tr>
<td>190, Fields of Social Work</td>
<td>3</td>
</tr>
<tr>
<td>110, Race Relations</td>
<td>3</td>
</tr>
<tr>
<td>*155, Comm. Welfare Org.</td>
<td>3</td>
</tr>
<tr>
<td>*187, Urban Sociology</td>
<td>3</td>
</tr>
<tr>
<td>2. Physical Education: 9-15 units selected from:</td>
<td></td>
</tr>
<tr>
<td>145, Prof. Act. (men) or 156A-156B (women)</td>
<td>3</td>
</tr>
<tr>
<td>146, Prof. Act. (men) or 161 (women)</td>
<td>3</td>
</tr>
<tr>
<td>*165, Community Recreation</td>
<td>3</td>
</tr>
<tr>
<td>*170A-170B, Recreational Leadership</td>
<td>4</td>
</tr>
<tr>
<td>*183A-183B, Field Work in Recreation</td>
<td>3</td>
</tr>
<tr>
<td>3. Select a third field for the general major from the following: Speech Arts, Psychology, art, music, education, biological science, after consultation with adviser.</td>
<td></td>
</tr>
<tr>
<td>(9-15)</td>
<td></td>
</tr>
<tr>
<td>Psych. 106 or Educ. 102B-102C</td>
<td>6</td>
</tr>
<tr>
<td>Psych. 145</td>
<td>3</td>
</tr>
<tr>
<td>Educ. 174, Audio-Visual-Radio Educ.</td>
<td>2</td>
</tr>
<tr>
<td>Electives</td>
<td>12-15</td>
</tr>
</tbody>
</table>

* 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.

Freshman Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>P. E. (activity courses)</td>
<td>3</td>
</tr>
<tr>
<td>Engl. 1, Comp. and 2, Lit.</td>
<td>3</td>
</tr>
<tr>
<td>Biol. 10A-10B, General</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Lang. (if needed)</td>
<td>3</td>
</tr>
<tr>
<td>Psych. 1, Gen., and 11</td>
<td>3</td>
</tr>
<tr>
<td>Applied</td>
<td>3</td>
</tr>
<tr>
<td>Electives (include natural science requirements. Recommended: Speech 2A-2B, Fund.)</td>
<td>3</td>
</tr>
<tr>
<td>15A, Social Work</td>
<td>15A</td>
</tr>
</tbody>
</table>

Sophomore Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soc. 103, Elem. Soc. Statistics</td>
<td>3</td>
</tr>
<tr>
<td>Soc. 157, Urban Sociology</td>
<td>3</td>
</tr>
<tr>
<td>Soc. 190, Fields of Soc. Work</td>
<td>3</td>
</tr>
<tr>
<td>Soc. elective</td>
<td>3</td>
</tr>
<tr>
<td>Econ., nine units selected from:</td>
<td>9</td>
</tr>
<tr>
<td>150, Labor Problems</td>
<td>3</td>
</tr>
<tr>
<td>170, Gov. and Business</td>
<td>3</td>
</tr>
<tr>
<td>155, Soc. Insurance</td>
<td>3</td>
</tr>
<tr>
<td>155, Inter. Econ. Relations</td>
<td>3</td>
</tr>
<tr>
<td>102, Comp. Econ. Systems</td>
<td>3</td>
</tr>
<tr>
<td>Psych. 145, Social Psychology</td>
<td>3</td>
</tr>
<tr>
<td>Psych. 150, Abnormal Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Units</th>
<th>Freshman Year</th>
<th>Sophomore Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Sem.</td>
<td>2nd Sem.</td>
<td>1st Sem.</td>
</tr>
<tr>
<td>P. E. (activity courses)</td>
<td>1</td>
<td>P. E. (activity courses)</td>
</tr>
<tr>
<td>Chemistry 1A-1B, General</td>
<td>5</td>
<td>Physics 2A-2B, General</td>
</tr>
<tr>
<td>Zoology 1A-1B, General</td>
<td>4</td>
<td>Chem. 101, Intro. Organic</td>
</tr>
<tr>
<td>English 1, Comp., and 2, Lit.</td>
<td>3</td>
<td>Zoo. 100, Embryology</td>
</tr>
<tr>
<td>Psychology 1, General</td>
<td>3</td>
<td>Statistics (offered in Econ., Psych., or Soc.)</td>
</tr>
<tr>
<td>Health Educ. 21, Principles</td>
<td>2</td>
<td>Electives (recommended: Math, Foreign Lang., Entomology)</td>
</tr>
</tbody>
</table>

16 1/2 16 1/2

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 and second semester

(3-3) Year I Three units each semester. Year sequence beginning in the first semester

(3-3) Year I, II Three units each semester. Year sequence beginning either semester

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

PREREQUISITES

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

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

PROVISIONAL COURSES

Courses numbered 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, ANTHROPOLOGY

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 those departments.

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

Minor

A minor in arts and sciences is not offered in aesthetics. A teaching minor is not offered in aesthetics; however, certain courses in this field are required as part of the teaching minor in art for the general secondary, 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) I
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 (2-3) 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 in performance. Correlation of musical art and other arts. No prerequisites. No credit for music majors.

102A-102B. Music History (2-2) Year, I
The chronological development of the art of music as related to the other arts. Larger works. Considerable attention is given to the works of modern composers. Major complete additional assignments for full credit. Prerequisite: Aesthetics 1A or 1B.

138. Introduction to Aesthetic Appreciation (1) I
Presented by an interdepartmental staff through lectures, demonstration, and panel discussions. Not open to students with credit for Comparative Literature 128.

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 minor 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 3A-3B; 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 sociology; 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 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 major, the general junior high school, the special elementary, the general junior high school, or the special secondary, the general secondary, or the general social science major for the junior high school credential or the general secondary credential. For specific information, refer to the requirements for the teaching minor for these credentials.

1A-1B. General Anthropology (3-2) I

2. Physical Anthropology (3)
An introduction to the studies of primatology and anthropometry. The comparative anatomy of the living human body and skeletal material. Sexual differences and growth changes in the skull and skeleton.

3. Survey of Archaeology (3) II
A review of the history of modern archeology and a discussion of its methods. The problems of present day archaeology in the Near East, the Mediterranean world. The evolution of family organization, religion, property rights, and government traced in the elementary and advanced civilizations.
### Upper Division Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>151A</td>
<td>The North American Indian (3) I</td>
</tr>
<tr>
<td>151B</td>
<td>Indian Civilization of Middle America (3) II</td>
</tr>
<tr>
<td>152</td>
<td>World Ethnography (3) I</td>
</tr>
<tr>
<td>153</td>
<td>Primitive Religion (3) II</td>
</tr>
<tr>
<td>156</td>
<td>Ethnology and Race Psychology (3) I</td>
</tr>
<tr>
<td>157</td>
<td>Indian Cultures of the Southwest (3) Winter</td>
</tr>
<tr>
<td>159</td>
<td>Special Study (3) I</td>
</tr>
</tbody>
</table>

### Lower Division Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>15A</td>
<td>The North American Indian (3) I</td>
</tr>
<tr>
<td>15B</td>
<td>Indian Civilization of Middle America (3) II</td>
</tr>
<tr>
<td>15C</td>
<td>World Ethnography (3) I</td>
</tr>
<tr>
<td>15D</td>
<td>Primitive Religion (3) II</td>
</tr>
<tr>
<td>15E</td>
<td>Ethnology and Race Psychology (3) I</td>
</tr>
<tr>
<td>15F</td>
<td>Indian Cultures of the Southwest (3) Winter</td>
</tr>
<tr>
<td>15G</td>
<td>Special Study (3) I</td>
</tr>
</tbody>
</table>

### Art

**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 consult the **liberal arts program** and the **teacher training program**, respectively, for specific information, refer to the outlines of requirements for these credentials.

#### ART

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>116A</td>
<td>Drawing and Composition (2) I II</td>
</tr>
<tr>
<td>116B</td>
<td>Design (2) I II</td>
</tr>
<tr>
<td>116C</td>
<td>Line, Color and Display (2) I II</td>
</tr>
</tbody>
</table>

**Minor**

A minor in **arts and sciences** is offered in **art**. The minor must include at least 15 units of work in **art**. The special secondary and general secondary credentials.

#### Art Appreciation, History and Orientation

For courses in appreciation, history of **art** and **art appreciation**, 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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aesthetics</td>
<td>Aesthetics 31, Orientation of Art</td>
</tr>
<tr>
<td>Aesthetics</td>
<td>Aesthetics 51, Survey of Mexican Art</td>
</tr>
<tr>
<td>Aesthetics</td>
<td>Aesthetics 52A-52B, Survey of Oriental Art</td>
</tr>
<tr>
<td>Art</td>
<td>Art 8, Costume and Home-furnishing</td>
</tr>
<tr>
<td>Art</td>
<td>Art 84, Costume design</td>
</tr>
</tbody>
</table>

### 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**.

**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.

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<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aesthetics</td>
<td>Aesthetics 150, Survey of History and Appreciation of Art</td>
</tr>
<tr>
<td>Aesthetics</td>
<td>Aesthetics 50, Survey of Mexican Art</td>
</tr>
<tr>
<td>Aesthetics</td>
<td>Aesthetics 52A-52B, Survey of Oriental Art</td>
</tr>
<tr>
<td>Art</td>
<td>Art 8, Costume and Home-furnishing</td>
</tr>
<tr>
<td>Art</td>
<td>Art 84, Costume design</td>
</tr>
</tbody>
</table>

### Lower Division Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>15A</td>
<td>The North American Indian (3) I</td>
</tr>
<tr>
<td>15B</td>
<td>Indian Civilization of Middle America (3) II</td>
</tr>
<tr>
<td>15C</td>
<td>World Ethnography (3) I</td>
</tr>
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</tr>
<tr>
<td>15E</td>
<td>Ethnology and Race Psychology (3) I</td>
</tr>
<tr>
<td>15F</td>
<td>Indian Cultures of the Southwest (3) Winter</td>
</tr>
<tr>
<td>15G</td>
<td>Special Study (3) I</td>
</tr>
</tbody>
</table>

### 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**.

**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.

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>Aesthetics</td>
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</tr>
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<td>Aesthetics</td>
<td>Aesthetics 50, Survey of Mexican Art</td>
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<tr>
<td>Aesthetics</td>
<td>Aesthetics 52A-52B, Survey of Oriental Art</td>
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<td>Art</td>
<td>Art 8, Costume and Home-furnishing</td>
</tr>
<tr>
<td>Art</td>
<td>Art 84, Costume design</td>
</tr>
</tbody>
</table>
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 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-curving, 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

105A-105B. 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 106A-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 106) 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 requisite: 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. 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 116A or 116B.

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.

165. Special Studies
A student with the necessary grade point average may apply for work in an upper division art course and register for Art 165. 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 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 195. 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 16; 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 as part of the general science major for the general junior high school credential, 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 major, the general elementary, and the Kindergarten-Primary minor for these cross-credit information, refer to the requirements of the teaching minor for these cross-credit information.
### ASTRONOMY, BACTERIOLOGY

### Lower Division Courses

1. **Descriptive Astronomy** (3) I, II
   - A 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 methods. Prerequisite: Astronomy 1 or permission of the instructor.

3. **Survey'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.

4. **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.

5. **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 of such stars. Three-hour evening laboratory period each week. Prerequisite: Astronomy 9.

6. **Elementary Navigation** (3) I
   - A study of compass corrections, time, line of position, use of celestial coordinates, and astronomical triangle. One laboratory period each week. Prerequisite: Astronomy 1.

7. **Introduction to Bacteriology** (4) I, II
   - An introduction to bacteriology. Effects of physical and chemical agents 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. Two lectures and six hours of laboratory per week. Prerequisite: Chemistry 1A or equivalent.

8. **General Bacteriology** (4) III
   - A survey of the principles and techniques used in serological diagnosis of disease agents. The course is planned for students interested in clinical laboratory work. Three lectures and three laboratory periods per week. Prerequisites: Bacteriology 1 or 109, and Chemistry 101. Recommended: Biochemistry 101 or equivalent.

9. **Bacterial Metabolism** (2) I
   - A course to provide a basic knowledge of the principles by which microorganisms derive energy to support the life processes. Prerequisites: Bacteriology 1 or 101, Chemistry 101. Recommended: Biochemistry.

10. **Virology** (2) I
    - A survey of viruses and Rickettsias as agents of disease. An introduction to virology and Rickettsias as agents of disease. An introduction to virology, and the electron microscope. Prerequisites: Bacteriology 102 or 103, or equivalent.

11. **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 at least 15 units of work in the life sciences (including courses in bacteriology) with grades of A or B.

### Upper Division Courses

1. **Elementary Astrophysics** (3) I
   - A lecture course in the application of physics to astronomy: Much of modern research is in the field of astrophysics. An occasional laboratory period will be arranged by appointment for the lecture period. Prerequisites: Astronomy 2 or college physics.

2. **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 at least 15 units of work in the life sciences (including courses in bacteriology) with grades of A or B.
### Biology

**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.

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 these credentials.

### Lower Division Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>10A.10B.</td>
<td>General Biology (3-3) Year I II</td>
</tr>
<tr>
<td>10A.10B.</td>
<td>General Biology (3-3) Year I II</td>
</tr>
</tbody>
</table>

### Botany

**Major**
A minor in arts and sciences is offered in botany. Lower division requirements: 12 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.

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 science minor for the general secondary credential. For specific information, refer to the outlines of requirements for these credentials.

**Upper Division Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>102.</td>
<td>Mycology (4) I</td>
</tr>
<tr>
<td>107.</td>
<td>Plant Physiology (4) II</td>
</tr>
<tr>
<td>111.</td>
<td>Cultivated Trees and Shrubs (3) I</td>
</tr>
<tr>
<td>114.</td>
<td>Plant Taxonomy (3) III</td>
</tr>
<tr>
<td>126.</td>
<td>Plant Pathology (3) II</td>
</tr>
<tr>
<td>150.</td>
<td>Reading in Biology (2) II</td>
</tr>
<tr>
<td>153.</td>
<td>Economic Biology (2) I</td>
</tr>
<tr>
<td>155.</td>
<td>Genetics (2) II</td>
</tr>
</tbody>
</table>
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 part of the physical science major for the general junior high school 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 as part of the general science minor for the general junior high, the special secondary, 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 in industry. 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 in chemistry as part of a general education or majors but wish to use chemistry either as a part of a related profession. By proper choice of electives, grade requirements, and other factors, students interested in teaching in secondary schools may provide for students interested in teaching in secondary schools. This plan is also intensive chemical training than that required in the general 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 approval of the faculty advisor:

A major for the B.S. degree is offered in Chemistry. The requirements are the (2) the student's program must tend to a four-year occupational objective approved by the chemistry department advisor for the B.S. degree.

CHEMISTRY

Plan A
(For chemists)

<table>
<thead>
<tr>
<th>Units</th>
<th>1st Sem.</th>
<th>2nd Sem.</th>
</tr>
</thead>
<tbody>
<tr>
<td>First year</td>
<td></td>
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</tr>
<tr>
<td>Chemistry 1A-1B</td>
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<td>5</td>
</tr>
<tr>
<td>Physics 4A</td>
<td>4</td>
<td>4</td>
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<tr>
<td>Mathematics 3A-3B</td>
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<td>English 1 and 2</td>
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<td>Psychology 1</td>
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<tr>
<td>Physical Education</td>
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Plan B
(For related professions)

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<tr>
<th>Units</th>
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<tbody>
<tr>
<td>First year</td>
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<tr>
<td>Chemistry 1A-1B</td>
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<tr>
<td>Physics 2A-2B</td>
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<tr>
<td>Mathematics 7A-7B</td>
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<tr>
<td>English 1 and 2</td>
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<tr>
<td>Physical Education</td>
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Second year

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<td>German 1</td>
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<td>German 2-3</td>
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<tr>
<td>Social Science</td>
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<tr>
<td>Physical Education</td>
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Third year

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<tr>
<td>Chemistry 102-10G</td>
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<tr>
<td>Chemistry 110A-110B</td>
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<tr>
<td>Chemistry 165</td>
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<tr>
<td>Social Science</td>
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<td>Elective</td>
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Fourth year

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<tr>
<td>Chemistry 111</td>
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<tr>
<td>Electives</td>
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</table>

Lower Division Courses

1A-1B. General Chemistry (5.5) Year 1, I, II

General principles of chemistry with emphasis on inorganic materials. Three lectures and five hours of laboratory per week. Qualitative analysis is included in the lecture. First and second semesters. 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 to other sciences. Two lectures and one laboratory period per week. Third semester. Prerequisite: Chemistry 1A-1B.

3. Elementary Quantitative Analysis (3) I, II

Theoretical consideration of the principles of gravimetric and volumetric analysis. Four lecture periods per week. Third semester. Prerequisites: Physics 1A-1B, Chemistry 1A-1B, and facility in the use of logarithms and algebra.

*Should include preparation for minor.

The above sequence, 1A-1B-2A-2B-3, formerly offered, will fulfill the requirement for the physical science sequence, 1A-1B-1C-1D.
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 electrode analysis. One lecture, one quiz, and two laboratory periods per week. Prerequisite: Chemistry 5.

110A-110B. Physical Chemistry (5-3) Year, I
Theoretical principles of chemistry with emphasis on mathematical relationships. 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
Physical-chemical apparatus and measurements, with emphasis on technical report writing. Discussion period and three laboratory periods per week. Prerequisite: Chemistry 102 or by permission of the instructor. Recommended: Elementary biology or zoology.

114. Biochemistry (3) I
The chemistry of carbohydrates, fats, proteins, enzymes, vitamins and hormones per week. Prerequisite: Chemistry 102 or by permission of the instructor. Recommended: Chemistry 5.

115. Biochemistry Laboratory (2) II
Lectures and laboratory work on the chemical composition of living cells, and body tissues. One lecture and two laboratory periods per week. Open: Chemistry 115.

116. Clinical Chemistry (3) II
Lectures and laboratory work on the chemical composition of blood, urine, milk, and primary to students enrolled in the Laboratory Technician Curriculum. Prerequisite: Chemistry 116.

118. Colloid Chemistry (2) II (Offered 1951-52 and alternate years)
The theoretical principles of colloid chemistry and their practical applications. Two lectures per week. Prerequisite: Chemistry 1A-1B.

122. Glass Blowing (3) II
Elementary training in the manipulation of glass. Prerequisite: Chemistry 1A-1B.

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 table, properties of the chemical bond, and the nature of the chemical bond. Three laboratory periods per week. Prerequisite: Chemistry 1A-1B. Recommended Chemistry 110B.
San Diego State College

C. Business Administration: Com. 118A-118B, 123, 125, 126, 127A, 133, 134, 137, 152, 154, 184; Econ. 128, 135, 142, 150, 163, 170.

D. Marketing: Com. 120, 123, 124, 137, 133, 153, 154, 184, 185, 186, 187-187B, 188, 189, 196; Home Econ. 160A-160B.


F. Personnel Administration: Com. 102A, 121, 133, 154; Econ. 150, 153, 154, 155; Psych. 106A, 121, 145, 152.

Students majoring in (G) Office Management must include the following courses: Com. 103A, 103B-103B, 108, 123, 126, 127A-127B, 153, 154, 184; plus nine units of directed electives selected from: Com. 118A-118B, 137, 162; Econ. 125, 140, 142, 150, 170; Psych. 121.

Students majoring in (H) Secretarial Field must include the following courses: Com. 103A, 105A-105B, 118, 118A-118B, 153; plus nine units of directed electives selected from: Com. 121, 122, 124, 145, 152, 184, 185, 186, 188; Home 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 the 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 the 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 (3.2) 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, typewriting 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 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.

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)

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 (3.5) 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.)

7. English in Business (See English 8)

7A-7B. 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 and reviewing the general accounting practice. Five hours lecture and laboratory. (4A is a prerequisite for 4B.)

7A-7B. Secretarial Accounting (3-3) I

Course in secretarial accounting covering the principles of accounting and teachers application of those principles to the accounting work done by secretaries and teachers in commerce. Required for four-year secretarial and business education majors. (4A is a prerequisite for 4B.)

7A-7B. 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 consumer purchasing; family budgeting; market buying food, clothing, shelter, transportation, insurance, etc.; family eating.

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 merchants in retail buying, budgeting, buying, carrying of stock, inventory, sales promotion, buying, selling; the use of the computer, score cards, and cash register; the development of clientele and of goodwill; the personal factor in salesmanship.

25. Salesmanship (3) I, II

Theoretical and psychological backgrounds of salesmanship, newer concepts of salesmanship, organization, personnel, sales promotion, buying, selling; the development of clientele and of goodwill; the personal factor in salesmanship.
26. **Applied Salesmanship (2) II**

Practicing 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 14A is a prerequisite for 65B.

103A. **Office Management (7) 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.

106. **Records Management (3) I, II**

Intensive survey of the various means of preparing, keeping, storing, and disposing of office records to facilitate the efficient management of business. Various systems of record 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 14A-15A, 15B-16A, or equivalent.

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

An advanced study of the law of personal and real property, partnership, corporations and the laws regulating trade and trade practices and competition. Effective for commerce majors.

120. **Consumer Income Management (3) I**

Income and expenditures of consumers; problems of choice-making; planning expenditures for housing, family, and personal living also, insurance, and investments. Economic disincentives to thrift.

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 firm, the corporation form of organization, instruments of long-term finance, methods of raising capital, efficient financial management, the financing of reorganizations, and governmental control. Prerequisite: Economics 1A-1B. Open to students who have credit for Economics 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; coverage; 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 values, policy loans and extended insurance, surplus and dividend policies, reserves, group, industrial and social insurance, and state supervision.

127B. **Life Insurance Salesmanship (3) II**

Practice in the principles 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, II**

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

129C-129D. **Advanced Life Insurance (3-3) Year, I, II**

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

129E-132F. **Advanced Life Insurance (3-3) Year, I, II**

Prepares for the life insurance examinations of the Chartered Life Underwriters examination. Covers the four sections, "Life Insurance Fundamentals," "General Education," "Law, Trusts and Taxes," and "Finance"; teacher proficiency in the analysis of cases or problems. Commerce 129E is a prerequisite for Commerce 129F.

130. **Corporation Finance (3) I**

The corporate form of organization, instruments of long-term finance, methods of raising capital, efficient financial management, the financing of reorganizations, and governmental control. Prerequisite: Economics 1A-1B. Open to students who have credit for Economics 123.

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, etc., and the small investor's problems wth regard to these investments.

137. **Credits and Collections (3) II**

The credit man and his work, including the instruments with which he works; the credit man's functions and responsibilities; problems of choice-making; planning expenditures for buying, household operation, insurance and investments. Economic disincentives to thrift.

138. **Personnel Administration (4) I, II**

Problems in the management of personnel relations, including techniques of selection, training, supervising and rating employees. Methods used by management in selecting personnel; training; supervising; rating employees; problems encountered in the evaluation of employees; personnel relationships; union relationships; forms and methods of handling union activity.

144. **Wage and Salary Administration (3) I**

Problems of job analysis; major techniques of wage and salary administration; point system, factor comparison; problems of wage and salary administration; group insurance; safety; union relationships; stimulation of interest.
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.

163A-163B. Auditing (3-3) Year, I
The fundamental principles of accepted procedures of auditing and related types of auditing engagements. 163A is a prerequisite for 163B.

164A. 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 100A-100B.

165A. 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 records; internal checks; auditing.

166. 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.

167. 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 24, or permission of instructor.

168. Advertising Media (2) I
A thorough coverage of advertising media. Market characteristics; rates and scheduling; advertising salesmanship. Prerequisite: Commerce 27, or permission of instructor.

169. 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 and national advertising; advertising agencies; sales promotion services of publishers. Prerequisite: Commerce 27 or permission of instructor.

172. 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.

185. 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. 184A is a prerequisite for 184B.

187A. Buying Techniques (2) I
Merchandising in department and specialty stores; customer demand; functional services 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.
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 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 Twain 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)  
Major forms of expression and aesthetic experience in art, music and literature, 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 of 18th and 19th century authors. The contributions to world thinking of Racine, Corneille, Voltaire, Rousseau, Hugo are stressed, with readings.  
142. The Golden Age of German Literature (3) II  
English translations read. No knowledge of German required.  

COMPARATIVE LITERATURE, ECONOMICS  

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, Balzac, 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 Voltaire, Racine, Rabelais, Boccaccio, 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 Staël, and others.  
159. 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 1A-7A; History 4A-4B, or 4A-5B, or 1A-5B; Psychology 1 and 5; Sociology 30-51; or Anthropology 1A-1B, recommended: Commerce 15A-15B; Geography 1, 19; 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. 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 credential, or the general secondary credential. 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: distribution, public finance, and intelligent economic citizenship. Foundation for further study, business majors, and intelligent economic citizenship. Prerequisite: Sophomore standing. 1A prerequisite for 1B.  

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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 economies, 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. 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, requisite: Mathematics A-B, and C, or equivalent. Not open to students with credit in Sociology 105, Psychology 104A, 104B.

142. Business Cycles (3) I
Fundamental factors in business cycles are analyzed and cycle theories are correlated. Practical application of forecasting methods to both business and other data.

150. Labor Problems (3) I
A study of labor organizations and their policies, wages, strikes, unemployment, labor problems.
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.

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, 115A-115B with the approval of the Dean of Education.

Lower Division Courses
A. Review of Arithmetic (0) I, II
B. Review of Handwriting (0) I, II
C. Review of Reading (0) I, II
D. 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 in Instruction and Audio-Visual Aids

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-I. Methods in Romance Language
100B-MA. Methods in Mathematics
100B-ME. Methods in Merchandising
100B-MU. Methods in Music
100B-PE. Methods in Physics, Ed. (Men)
100B-PE. Methods in Physics, Ed. (Women)
100B-SC. Methods in Science
100B-SH. Methods in shorthand
100B-SA. Methods in Speech Arts
100B-SC. Methods in Social Sciences
100B-SC. 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 elementary school 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 taking the elementary school certification. Prerequisite: 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 100A.

102A. 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: Psychology 5, 11; Education 102A, 102B. Not open for credit to students with credit for Psychology 100A.

112A. Methods in Teaching Americanization Classes (2) Extension only
Methods used in teaching the various grade levels found in Americanization programs. Emphasis on the skill subjects, and the special grade levels found in these classes; and in helping teachers understand how to design and conduct classes; and in helping teachers 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 objectives. Field work required.

116. Directed Teaching (3-12) I, II
Systematic observation, participation and teaching under supervision. Prerequisite: Admission to teacher education; credit to students who have had Music 7A.

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 note songs, ear training, elementary materials, and content. Prerequisite: Music 7A and 100A.

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 in designing individual sections. Field work required. Not open to students who have had Music 7A.

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 demonstration and appreciation of the elementary school child. Prerequisite: Art 10A.
122. Social Studies in the Elementary School (2) I, II
The purpose, scope, organization and development of instructional procedures is 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 science sequence, 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, 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 technique. 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 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, in work recognition, vocabulary development, word analysis, use of reading materials.

138. Workshop in Family Life Education (3) Summer
A series of lectures, discussions, and laboratory sessions devoted to furthering the training in 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 work. Practical work with children with reading problems. Primary units for primary grade, second grade, third grade, and fourth grade. Education 170A, 170B, and Education 180A or 180B, and Education 190A or 190B, or one year of successful teaching experience.

145A. Organization and Administration of Music Education (2) I, II
The theory of the general principles of music administration; correlation of music with the various subjects in the public schools; music tests; creative work.

145B. 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

146B. Interpretation of Early Childhood Behavior (2) Summer
For kindergarten-primary teachers taking 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 Practicae 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. Emphasis is placed upon the understanding of the systems of notation and language technique. Opportunity will be given for the development of instructional materials and procedures.

148. Education Practicum (12) 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 Practicae 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. Emphasis is placed upon the understanding of the systems of notation and language technique. Opportunity will be given for the development of instructional materials and procedures.

149A. Laboratory in Elementary Education (3) Summer
A laboratory in observation and theory, including a study of arithmetic, language, music, and science. The laboratory will be conducted in the field, including the practice of the general course in observation and theory. The laboratory will select problems in elementary education and provide problems in elementary education. The laboratory will provide for the teachers in attendance.

149B. Laboratory in Rural Education (6) Summer
A study in observation and theory, including a study of arithmetic, language, music, science, social studies, art, and spelling. Students in this course will work in the summer demonstration school and attend the laboratory procedures.

149D. Workshop in Elementary Education (3 or 6) Summer
A study in observation and theory, including a study of arithmetic, language, music, science, social studies, art, and spelling. Students in this course will work in the summer demonstration school and attend the laboratory procedures.

155. Principles of Guidance (3) I, II
A study of the principles of guidance and their function in the educational process.
156. Guidance Conference (1) Summer
A series of lecture and discussion sessions centered 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, family connections, guidance 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, centered on problems in the use of audio-visual instructional materials designed for teachers, administrators, audio-visual representatives, and others interested in current developments in these areas. 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 knowledge necessary to use audio-visual aids, followed by study and practice in the use of audio-visual materials needed in 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.

176. Problems of Speech Correction and Articulation (3) Irregular
Analysis and discussion of the major articulatory problems encountered in correction work. 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; procedures, teaching procedures 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 techniques for public schools. Required for the Special Secondary Code, 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, physical, and emotional growth. Prerequisite: Education 184A or equivalent.

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 groups of teachers who wish to develop or complete 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. Enrollment by permission of the staff. Credit 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 American education functions. Prerequisite: Education 115A, or equivalent.

209. Advanced Educational Psychology (3) I, II
Advanced study of the research and its application to learning and human growth. Prerequisite: Educational Psych. 120, or equivalent, teaching experience.

210. Advanced Educational Psychology (3) I, II
Advanced study of the research and its application to learning and human growth. Prerequisite: Educational Psych. 120, or equivalent, teaching experience.

211. Guidance Problems in Secondary Education (3) I, II
Practicum for the study of guidance in the secondary schools. Includes individual and group study of the theory and practice of guidance with emphasis upon practical problems of the members of the class. Prerequisite: Education 120, or equivalent.

232. Problems in Vocational Guidance (3) I, II
Practicum for teachers of vocational guidance in the secondary schools. Includes selection, organization and presentation of curricular materials for mentally retarded children.

233. Guidance Counseling Techniques (3) I, II
Designed for school counselors. To stress the understandings and procedures necessary for effective interviewing. Prerequisite: Education 220, or equivalent.
238B. Guidance Counseling Techniques (3) Continuation of the work of Education 233. Prerequisite: Education 230 and 253, 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 personal 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.

240. Problems in the Teaching of Reading (3) I, II Advanced study of trends in reading instruction. Topics include developmental sequences in reading skills and abilities, reading in the content fields, individual differences, and interests. Students will develop individual projects or problems. Prerequisites: Education 136 and 144 or equivalents.

243. Seminar in Social Studies in Elementary Education (3) Summer Advanced study of problems in teaching social studies in the elementary school with emphasis on the study of the scientific research in the field. Prerequisite: Permission of instructor.

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

246. 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.

259. 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, and local 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.

270. 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.

274. Elementary School Supervision (3) Principles and procedures 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.

275. 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.

276. 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.

277. 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.

278. 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.

279. 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.

279A. 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.
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 Curriculum.

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 a 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.
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 as stressed. Three lectures and one three-hour laboratory period per week. Prerequisite: Engr. 23, 102A, 140.

124. Radio Measurements (2) II A laboratory course on measurements of the parameters of resonant circuits, radio frequencies. Study of the properties of oscillators, modulators, detectors, and wave guides. Prerequisite: Previous or concurrent enrollment in Engineering 58.

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 heat theory to efficient operating practices is stressed. Prerequisite: Math. 44, 48.

129. Heat Power Laboratory (2) I Testing of steam generators and heat balance of same; steam turbine, regenerative; internal combustion engines for heat balance; flow-gas, fuel oils, lubricating oils and boiler feed water. Emphasis upon standard operating procedures. Three-hour laboratory period per week. Prerequisite: Engr. 125, or taken concurrently.

130. Route and Construction Surveying (3) I Application of surveying to engineering problems. Method of route survey in highways, railroads, utilities. Construction surveys for buildings and other structures. Earthwork computations. Two lectures and one three-hour field period per week. Prerequisite: Engr. 115.

131. Advanced Surveying (3) II Special problems in surveying. Methods of geometric surveying, map projection, U. S. public land surveys, and photogrammetry. Two lectures and one three-hour field period per week. Prerequisites: Astr. 5 (may be taken concurrently) and Engr. 115.


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 photomicroscopy for 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 stress, space structures; general theorems relating to elastic systems; statically and unilaterally inextensible structures; deflections; analytical and graphical methods of solution. Lecture 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, fluid, and gas engines, and the gas turbine. Lectures and problems. Prerequisites: Physic 61, Math. 4A. Recommended: Engr. 128.

150. Industrial Electronics (3) II Photoelectricity and its applications; rectification and inversion; theory and applications of thyristors and ignitrons including welding; radio-frequency heating; electrostatic precipitation; motor control and introduction to servomechanisms. Porcelain. For 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 on an elective but not to satisfy lower division English requirements in my 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 (2) 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.

3A-3B. 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.

3. 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, Business English Test and Commerce 2A or its equivalent. (A satisfactory score on the college entrance English test may be substituted for English A.)

4. 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.

5A-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 begins with the Renaissance stresses prose fiction, the drama, and the essay. Open not to students who have credit for Comparative Literature 52A-52B.

53A-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.

6A-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.

Upper Division Courses

1. 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.

3. 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.

105. 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. American English (3) I (Offered in 1951-52)
The development of American English; regional and cultural differences in pronunciation, grammar, and vocabulary.

114A-114B. The Age of Elizabeth (3-3) Year, I
Semester I: Poetry and prose, exclusive of drama. Semester II: The drama to 1644, 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. The second semester stresses the social satire of Steele, Pope, Voltaire, and conceptions of the period. Prerequisites: English A, History of English Literature 118A-118B.

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 romantic movement and to the contemporary and literary period. Semester II: Tennyson and Browning with their contemporaries and predecessors, 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 Johnson, Donne, and Milton. Consideration is given to the political, religious, and social backgrounds of the seventeenth century.

129A-129B. Nineteenth Century English Prose (3) I

130. Contemporary British Literature (3) II
A study of the important British writers, with emphasis on a new generation of women writers, including Shaw, Yeats, Synge, Joyce, Maugham, Huxley, D. H. Lawrence, Eliot, and T. S. Eliot. Students who have taken English Literature 119A-119B may take this course.

131. American Literature: 1820-1860 (3) I
A study of the important American 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: 1800-1910 (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 Breckden Brown.

134A-134B. (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)
A course proceeding from simpler to more complex poetic productions, and designed to bridge the widening chasm between the poet and the ordinary man.

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 in the plays 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 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 inflection, 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, Bolleau, 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.

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, or German 1, 2, or Spanish 1, 2, or Latin 1, 2; History 3A-3B.
Upper division requirements: A minimum of 24 upper division units, at least 21 units of which must be in French, including French 100. The remaining 3 units may be selected from Geography 11B; History 121A-121B, 131A-131B, 141, 142, 143A-143B, 144A-144B; or Comparative Literature 101A, 140A-140B, 152A-152B, 155, 156, 159, 190, in consultation with the Chairman of the Department. An average of C grade or better is required for 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 credit. 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- elementary credential. For specific information, refer to the outlines of requirements for these credentials.

Lower Division Courses

1. Elementary (3) I, II

2. Advanced (3) I, II

3. Continuation (3) I, II

French

1A, 1B. 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 review; dictation; 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 resumes and written reports; dictation. Prerequisite for C: French A; 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 II 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 Mussset, Scribe, Augier, Dumas fils, Paulhan, etc. 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 Encyclopedists, and others. Prerequisite: French D, or its equivalent, with 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, Bourdeau, Bizard, E. R. Holland, A. Gide, Marcel Proust, and others. Outside 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 and lectures on the background of the seventeenth century in France. Prerequisite: French D or its equivalent, with a grade of C.

119. 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.
10. Economic Geography (3) I, II
Beginning course in economic geography designed for commerce and commerce majors. Prerequisite: Geography I.

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 I 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 I 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 I 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 I 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 I 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 development. Prerequisite: Geography I 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 I or consent of instructor.

124. Geography of Asia (3) I
The cultural regions of Asia, their physical environment, and historical development. Prerequisite: Geography I 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 I 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 I or consent of instructor.

145. Conservation of Natural Resources (3) II
Nature and extent of mineral, soil, water, forest, and wildlife 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 I or consent of instructor.

166. Honors Course I, II
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

209. 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.

219. Special Study (1-3)
An individual study course designed primarily for candidates for the master's degree.

239. Thesis (3)
Guidance in the preparation of a project or thesis for the master's degree.

GEODETY, GEOLAGHY

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 1A-1B-2A; Mathematics 2A-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 credit.

A teaching minor is not offered in geology; however, courses in this field may be used as part of the general science minor for the general junior high school, the 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 processes of change. Three lectures and one laboratory period weekly. (Not offered in 1950-51.)

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 laboratory period weekly.

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 enrolled in Geology 1A. Two lectures and one 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 illustrated by 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 microscope, simple chemical reagents, and the petrographic microscope, but with emphasis upon crystallography. Prerequisite: High school chemistry, or equivalent.
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 essential of grammar.

2. Elementary (3) I, II
   Continuation of German I. Prerequisite: German I 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 spoken language; practical vocabulary; conversation on various 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.

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 collection. 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 geologic features of the State but with the variety of important source materials of geologic interest 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 unexplored areas with preparation of a geologic map and accompanying report. Work accomplished primarily on weekends 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, laboratory, or museum under staff supervision. Open only to qualified students upon consultation.

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 lower 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 elementary, and the special education program. Physical education general junior high school, and the special secondary certificates. Physical education will be determined in consultation with the departmental representative.

Prerequisites may be taken in consultation with the health education departmental representative, including courses in health education, psychology, and other related fields.

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 (3) 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 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.

IN THE DIVISION OF SOCIAL SCIENCES

HISTORY

HISTORICAL COURSES

Major

A major in arts and sciences is offered in history. Lower division preparation for the major: History 1A-1B, or 2A-2B, or 3A-3B, and either Political Science 1A-1B, or 2A-2B, 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's course in each of the following fields: (a) Ancient and Medieval; (b) Modern Europe; (c) United States; and 12 of 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 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 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 Part not being a prerequisite to the 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: 1500-1700. Spring semester: 1700 to the present.

4A-4B. History of the Americas (3-3) Year, I

Survey of the history of the western hemisphere from its discovery to the present time.

5A-5B. 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 1500 A.D.

17A-17B. 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

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.

183A-143B. Europe in the Nineteenth Century (2-3) Year, I

Reaction in Europe, the development of nationalism, the impact of industrialism, and the background of World War I. Covers periods 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.

15A-151B. History of England (3-3) Year, I

Survey of political, constitutional, social and economic developments since 1066.

15A-154B. History of British Expansion (3-3) Year, I

Study of the growth and development of the British Empire from the first overseas enterprise to the present. History 154B is 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
Republcs 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 159A and 159B.

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 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; a critical examination, 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 159A-159B.

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.

183. 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, the international struggles for California; American conquest and Gold Rush Era; development of California as a state.

181A-181B. 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 religious, philosophic, literary and the arts.
Upper Division Courses

100. Advanced Clothing Design (3) I, 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 costumes is studied briefly as an aid in understanding recurring cycles in fashion. A consideration of buyanship information necessary in wardrobe selection to insure satisfaction and economy.

102. Child Growth and Development (3) I, II, III
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 106B.

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.

106. Marriage and the Family (3) I, II, III
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 125.

107. 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 pre-natal and pre-school periods of child development. Directed observation and participation in the nursery school.

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 3 or 21 and 51 or 61; 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 line, 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 willing to graduate in Engineering.

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 architectural. Use of computer programs for dimensioning problems, simple section and auxiliary views. One lecture and two laboratory sections per week. Prerequisite: Industrial Arts 2 or one year of high school technical drawing.

21L. Introductory General Shop (3) I, II, Summer
A general course introducing basic operations in wood, bench and sheet metal, forging, fabrication, welding and electricity with special consideration given to the needs of the individual and the homemaker. One lecture and two laboratory sections per week.

21L. Intermediate General Shop (3) II
Additional training in any two of the fields of wood, metal, welding, forging, sheet metal and 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 woodworking and woodwork 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.

51. 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)
Practical work 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.)

121. Advanced Mechanical Drawing (3) I, II, Summer
Lettering practice, orthographic and isometric projection of machines and parts of furniture. Theory and practice of dimensioning, working and producing drawings, reproduction and principles of perspective. Intended for the prospective teacher. One lecture and two laboratory sections per week. Prerequisite: Industrial Arts II.

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 II or I.

143A-143B. Advanced Machine Shop Practice (3-3) Year, I, II
A year course in the principles and practices 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. Forgiving and Welding (2) (May not be offered in 1950-51)
Principles and techniques of forging and welding including oxy-acetylene and electric 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 53 or 62.

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 62.

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.

160. Experimental Shop (1 or 2) I, II
Individual shop work on complex projects on an experimental basis. Prerequisite: Permission of the instructor.

162. 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.

164. Recent Trends in Industrial Arts Education (2) I
Study of the recent trends and practices in the field of Industrial Arts 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 journalism in the section entitled: Pre-professional and Vocational training in journalism in the section entitled: Upper 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 35 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 modern society. Prerequisites: Sophomore standing and grade of B in freshman modern society.
### 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 I. Prerequisite: Latin 1 or one year of high school Latin.

B. **Elementary** (5)  
   (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** (3-5), 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 other Latin poets. 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.

#### Upper Division Courses

- **Magazine Article Writing** (3), I  
  The technique of preparing magazine articles; article types; research techniques. Prerequisite: Junior standing, with average grade of B in all previous composition and journalism courses, plus permission of instructor.

- **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 51A with grade of C or better.

### LIFE SCIENCE

**IN THE DIVISION OF LIFE SCIENCES**

#### Major

- A major in arts and sciences is offered in life science. Lower division requirements:  
  - Botany 1A-B or Biology 10A-10B; Zoology 20 or Physiology 1A; 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 must be from upper division units in zoology, bacteriology and botany of which 6 units may be from related fields. The plan for this major must be approved by the Chairman of the Division of Life Sciences.

- A teaching major in life science is offered for the general secondary credential. For specific information, refer to the outlines for this major.

#### Minor

- A minor in arts and sciences is offered in life science. Lower division requirements:  
  - Biology 1A-B or Chemistry 10A-10B or equivalent; Zoology 20; Chemistry 2A-2B; 1A.  
  - Recommended: Geology 1A, Astronomy 1.  
  - Upper division requirements: At least 8 upper division units in zoology, bacteriology 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. For specific information, refer to the outlines for these credentials.

### LIBRARY SCIENCE

**IN THE DIVISION OF SOCIAL SCIENCES**

#### Major

- 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.

- 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.

### MATHMATICS

**IN THE DIVISION OF PHYSICAL SCIENCES**

#### Major

- A major in arts and sciences is offered in mathematics. Lower division requirements:  
  - Mathematics 3A-3B, 4A.  
  - Mathematics 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 6 and 6 upper division units from related areas. The selection of courses must be approved by the Chairman of the Department.

- A teaching major in mathematics for the general junior high school credential and the general secondary credential. For specific information, refer to the outlines of requirements for these credentials.
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 Chairmen 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 those credentials.

### Lower Division Courses

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Basic Mathematics (Algebra)</strong></td>
<td>3</td>
<td>Mathematics A or its equivalent.</td>
</tr>
<tr>
<td><strong>B. Basic Mathematics (Geometry)</strong></td>
<td>3</td>
<td>Mathematics A or its equivalent or its equivalent.</td>
</tr>
<tr>
<td><strong>C. Intermediate Algebra</strong></td>
<td>3</td>
<td>Mathematics A or its equivalent or its equivalent.</td>
</tr>
<tr>
<td><strong>D. Trigonometry</strong></td>
<td>3</td>
<td>Mathematics A or its equivalent or its equivalent.</td>
</tr>
<tr>
<td><strong>E. Solid Geometry</strong></td>
<td>2</td>
<td>Mathematics C or its equivalent or its equivalent.</td>
</tr>
<tr>
<td><strong>S. Slide Rule</strong></td>
<td>1</td>
<td>—</td>
</tr>
<tr>
<td><strong>1. Algebra and Trigonometry</strong></td>
<td>3</td>
<td>Mathematics A or its equivalent or its equivalent.</td>
</tr>
<tr>
<td><strong>3A. Plane Analytic Geometry</strong></td>
<td>3</td>
<td>Mathematics 3A or its equivalent or its equivalent.</td>
</tr>
<tr>
<td><strong>3B. First Course in Calculus</strong></td>
<td>3</td>
<td>Mathematics 3A or its equivalent or its equivalent.</td>
</tr>
<tr>
<td><strong>4A. Second Course in Calculus</strong></td>
<td>3</td>
<td>Mathematics 3A or its equivalent or its equivalent.</td>
</tr>
<tr>
<td><strong>4B. Third Course in Calculus</strong></td>
<td>3</td>
<td>Mathematics 3A or its equivalent or its equivalent.</td>
</tr>
</tbody>
</table>

### Upper Division Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>114. History of Mathematics (3)</strong></td>
<td>II</td>
<td>Mathematics down to early modern times. Prerequisite: Mathematics 3B or 7B.</td>
</tr>
<tr>
<td><strong>106. College Geometry (3)</strong></td>
<td>I</td>
<td>—</td>
</tr>
<tr>
<td><strong>106. Projective Geometry (3)</strong></td>
<td>(Offered in 1951-52)</td>
<td>—</td>
</tr>
<tr>
<td><strong>111. Theory of Algebraic Equations (3)</strong></td>
<td>II</td>
<td>Determinants, complex numbers, and theory of algebraic equations. Prerequisite: Mathematics 3B or 7B.</td>
</tr>
<tr>
<td><strong>112. Analytic Geometry of Space (3)</strong></td>
<td>II</td>
<td>—</td>
</tr>
<tr>
<td><strong>117. Intermediate Calculus (3)</strong></td>
<td>II</td>
<td>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.</td>
</tr>
<tr>
<td><strong>118A. Advanced Mathematics for Engineering Students (3)</strong></td>
<td>I, II</td>
<td>—</td>
</tr>
<tr>
<td><strong>118B. Advanced Mathematics for Engineering Students (3)</strong></td>
<td>I, II</td>
<td>—</td>
</tr>
<tr>
<td><strong>119. Differential Equations (3)</strong></td>
<td>I, II</td>
<td>Ordinary differential equations of first and second order with applications to geometry, physics, and chemistry. Prerequisite: Mathematics 117 or its equivalent.</td>
</tr>
<tr>
<td><strong>121. Advanced Calculus (3)</strong></td>
<td>I</td>
<td>—</td>
</tr>
<tr>
<td><strong>124. Vector Analysis (3)</strong></td>
<td>I</td>
<td>—</td>
</tr>
<tr>
<td><strong>140A-140B. Mathematical Statistics (3-3)</strong></td>
<td>Year, I</td>
<td>—</td>
</tr>
</tbody>
</table>

**NOTE:** Courses in mathematics may not be used to meet any part of the 12-unit natural science requirement.
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) II
An 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 165A-165B, 167, 169A, 120A, 121A-121B, 129; 4 units of music activity (Music 105A-105B, and 4 units of music activity (Music 105A-105B, and 4 units of music activity (Music 105A-105B). Required of all music majors working for a Special Secondary credential unless this orchestral section is the major or minor field.

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 music teaching minor for the general elementary and the kindergarten-primarv credentials. It may be offered only as a second major.

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 (2) I, II
The elements of music: scale construction; elementary music theory; drill in music reading both with and without syllables and with words; ear training, elementary music dictation. Basic core 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.
20A-B-C-D. Chorus (1-1-1-1) I, II
Open to anyone interested in singing standard choral works. No examination required. No public performances.

24A. Beginning Instrumental Ensemble (1) I, II
Open to all instrumental students. Group playing of simple orchestral and band scores. Prerequisite: Music 24A or 4A, or equivalent, one or more.

28A. Intermediate Instrumental Ensemble (1) I, II
Construction 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. Prerequisite: Music 28A or equivalent.

28A-B-C-D. Marching Band (1-1-1-1) I, II
Permission of Conductor required for membership.

28A-B-C-D. Symphonic Band (1-1-1-1) I, II
Permission of the Conductor required for membership.

28A-B-C-D. Piano (1-1) Year, I
Fundamental playing and reading techniques 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. Continuation of First Year Piano (1-1) Year, I
Study of more advanced piano literature. Considerable emphasis upon ensemble piano playing and accompanying. Prerequisite: Music 28A-B, and consent of instructor. No credit for music majors. Credit will be given to music minors. 28C is a prerequisite for 28D.

28D. Continuation of First Year Voice (1-1) Year, I
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. 28A or equivalent is required for 28B.

28D-C. 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. 28C or equivalent is a prerequisite for 28D.

30A-B-C. 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. Specified work in coordination of operatic ensemble.

Upper Division Courses

101. Survey of Harmony and Musical Form (2)
A review of harmonic and chromatic harmony, modulation, and musical form. The material covered will serve as a 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-B-C-D. 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 each form. Application of contrapuntal style to modern composition. Prerequisite: Music 4A-4B.

107. Form and Analysis (2) II
Audible 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 (1-1-1) I, II
Members selected by auditions from Treble Clef (Music 110).

109A-B-C-D. Women's Glee Club—Treble Clef (1-1-1) I, II
Entrance upon examination. A maximum of 2 units in glee club may be counted toward the A.B. degree.

110A-B-C-D. Men's Quartet (1-1-1) I, II
Members selected by auditions from Men's Glee Club (Music 112).

112A-B-C-D. Men's Glee Club (1-1-1) 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 (1-1-1) I, II
Members selected by auditions from Vocal Club (Music 115).

115A-B-C-D. Choral Club (1-1-1) 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) I, II

117A-B-C-D. Advanced Individual Study of Voice (1-1-1) I, II

118A-B-C-D. Advanced Individual Study of Piano or Organ (1-1-1) I, II

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) Year, I
Arranging of music for full orchestra. Selected works of pupils to be performed by standard orchestras. 121A is a prerequisite for 121B.

122A. Beginning Instrumental Ensemble (1) I, II
Open to all instrumental students. Group playing of simple orchestral and band scores. Prerequisite: Music 24A or equivalent, one or more.

122B. Intermediate Instrumental Ensemble (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 other advanced grade. Prerequisite: Music 24A or equivalent.

125A-B-C-D. Marching 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.

128A-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.

129A. Methods in Teaching Piano (3) Summer
Teaching of beginning and intermediate piano. Survey of materials and techniques of the beginning and intermediate piano. Study of practical aspects of the piano.
PHILOSOPHY, PHYSICAL EDUCATION

1A-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. 1A covers the ancient and medieval period, 3B the modern. 3A is not prerequisite to 3B.

2A. Logic (3) II

2B. 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.

10A. 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 aesthetic theories.

111A-111B. The 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.

21A. Deductive Logic (3) II

22A. 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.

23A. 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.

24A. Philosophy of Art (3) II
The nature of the aesthetic 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.

26A. Philosophy of Science (3) I
A critical examination of the basic concepts and methods underlying contemporary science. Contributions of the special sciences to a view of the contemporary scientific thought. 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. For specific requirements, a general major is offered in the field of recreation. For specific requirements, a general major is offered in the field of recreation. A general major may refer to the outline for the curriculum in recreation in the section on Preprofessional Studies. Refer to the outline for the curriculum in recreation in the section on Preprofessional Programs. A general major is not offered in any of the special secondary education programs. Refer to the outlines of requirements for these programs in the General Education for Teachers section.
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, at least 9 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 recreations 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 courses will be granted. The college physician, in conjunction with 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 are offered 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 may take credit once only. The complete uniform will be furnished by the student.

Lower Division Courses

ACTIVITY COURSES

1A-1B-1C-1D. Developmental Physical Education (1) I, II
2. Basketball (1) I, II
3. Boxing (1) I, II
4. Gymnastics (2) I, II
5. Soccer (1) I
6. Softball (2) I, II
7. Touch Football (1) I
8. Track and Field (1) I, II
9. Volleyball (1) I, II

INTERCOLLEGIATE SPORTS

30. Baseball (4) II
31. Basketball (4) I
32. Cross Country (4) I
33. Football (4) I
34. Golf (4) II
35. Gymnastics (4) II
36. Tennis (4) II
37. Track (4) II
38. Wrestling (4) II

PHYSICAL EDUCATION

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 are offered 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 take credit once only. 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. The skills in the activities must be maintained as prerequisite to the senior course, Physical Education 185.

Lower Division

ACTIVITY COURSES

1A-1B. Fundamental Skills (1) I, II
Practice in efficient fundamental body movements.
2A-2B. Folk Dancing (Men and Women) (1) I, II
3A is a prerequisite for 2B.
3A-3B. Modern Dance (1) I, II
Practice in dance techniques and rhythms. 3A is a prerequisite for 3B.

TEAM SPORTS

4. Fieldball, Soccer, Speedball (1) I, II
5. Softball, Volleyball, Hockey (1) I, II
4. Basketball (1) I, II

11A-11B. Ballroom Dancing and Tennis (Men and Women) (1) I, II
11A is a prerequisite for 11B.
12A-12B. Advanced Modern Dance (Men and Women) (1) and (1) Year, I
11A is a prerequisite for 11B.
18A-18B. Golf (1) I, II
15A is a prerequisite for 18B; 18B is a prerequisite for 18C.
21A. Swimming (For non-swimmers only) (1) I, II
22. Water Safety Instruction (1) I
23. Sailing (1) I, II

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 Certificate and the American Red Cross Senior Life Saving Certificate.
PHYSICAL EDUCATION

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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 interest in the combative activities, tumbling, apparatus, and stunts.

51. First Aid and Safety Education (2) I, II
Acquaintance in the prevention and minimizing of common accidents. Course contents qualifies for American Red Cross Certificate.

53. Physical Education in the Elementary School (2) I, II
The State program in physical education for the elementary school forms the basis of the course. Candidates for the Elementary Credential are required to take the course section which includes two lectures and two laboratory periods per week. The course section which includes two lectures without laboratory periods.

72. Introduction to Physical Education (2) I, II
Goals 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 skills and up. Rules, sessions, and officiating techniques are given attention.

148. Professional Activities: Coaching Football and Basketball (Men) (1-2) II
Organization of practice sessions, drills for developing fundamental skills and 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 factors of body functions. Prerequisite: Zoology 8.

156A-156B. Sports Methods (Women) (2-2) Year, I
Analysis of skills in basketball, hockey, soccer, speedball, and softball. Rules of football, basketball, and tactics of playing sports for 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.

Lower Division Courses

102. Physical Education in the Elementary School (2) I, II
Anatomy and kinesiology of human functions. Prerequisite: Zoology 8.

112. History and Philosophy of the Dance (2) I
Methods, rules and teaching methods and testing individual playing techniques and rules. A study of postural deficiencies and methods of correcting such conditions through exercise. Prerequisite: Physical Education 12A-12B, or satisfactory examination in dance skills.

113. 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 of problems. A required course for Recreation Minor.

118. Physiology of Exercise (3) II
The adaptation of programs for the physical education program, including physical examination, training and prescribed exercises, follow-up, instructional problems, and evaluation.

119A-119B. Field Work in Recreation (1 to 3-1 to 3) Year, I
Observation and participation in supervised group activities in the field. Prerequisite: Human Development for the elementary school.

128. Techniques of Individual Sports (Women) (1) I
Methods and teaching methods and testing individual playing techniques and rules. Knowledge in tennis, archery, badminton, and swimming. Prerequisite: Senior standing or sound and swimming or advanced knowledge in tennis, archery, badminton, and swimming.

138. Administration of Physical Education in the Secondary School (3) I, II
Organization and management in the organization and administration of the secondary school activity program. Study, selection and adaptation of equipment and activities of group puzzles. Use and evaluation of tests. Selection and maintenance of equipment and facilities.

139. Special Study in Physical Education (3) I
For the student who plans to major in physical education. Prerequisite: Approval of the chair 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)
An intensive study of postural deficiencies and lack of physical development, and methods of correcting such conditions through exercise. Prerequisite: Physical Education 2A.

202. 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.
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 4B.

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 Physical Science 1A not a prerequisite.

1C. 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.

1D. Photography for Teachers (3) I, II
Designed for more mature students to learn photographic skills useful in teaching.

Upper Division Courses

PHYSICS

IN THE DIVISION OF PHYSICAL SCIENCES

Major

A major in arts and sciences is offered in physics for the A.B. degree. Lower 1A-1B or their equivalents. Recommended: A reading knowledge of French or German. A minimum of 24 upper division units in physics including 6 units of 34-3B, 11B, and 110 (two units), departmental advisor.

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 physics department advisor 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.

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: Electromagnetism, Sound and Light. Prerequisites: Two years of high school mathematics.

1A-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. Prerequisite: 1A. Concurrent or previous registration in Physics 2A.

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. Such a program may be taken for credit in addition to the maximum 12 units of industry. 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 radio. Prerequisites: 4B or equivalent. The course may be taken for credit in addition to the maximum 12 units of industry. Credit may be computed only for one of the 102, 104, 112, 114 courses.

4A. Basic Electronics (3) I
Principles of electron tubes and resistance loaded amplifiers. Negative feedback. Prerequisite: Physics 4B or equivalent. The course may be taken for credit in addition to the maximum 12 units of industry. Credit may be computed only for one of the 102, 104, 112, 114 courses.

4B. Communications (3) II
Principles of electron tubes and resistance loaded amplifiers. Negative feedback. Prerequisite: 4B or equivalent. The course may be taken for credit in addition to the maximum 12 units of industry. Credit may be computed only for one of the 102, 104, 112, 114 courses.

4C. Communications (5) III
Principles of electron tubes and resistance loaded amplifiers. Negative feedback. Prerequisite: 4B or equivalent. The course may be taken for credit in addition to the maximum 12 units of industry. Credit may be computed only for one of the 102, 104, 112, 114 courses.

4D. Communications (5) IV
Principles of electron tubes and resistance loaded amplifiers. Negative feedback. Prerequisite: 4B or equivalent. The course may be taken for credit in addition to the maximum 12 units of industry. Credit may be computed only for one of the 102, 104, 112, 114 courses.
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 underling 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 theory and application 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 (2) 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 oscillograph, 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 106, 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 150, or permission of instructor.

132. Heat and Pyrometry Laboratory (2) II (Offered in 1951-52)
Laboratory work selected from experiments in thermal expansion, specific heat, 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.

145. 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 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.

160. Circuit Analysis (3) II
A study of filter design, transmission lines, and network analysis. Prerequisite: Physics 110.

164. Honors Courses (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 of 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.

179. Special Study (1-2) I, II
Reading and laboratory work on a special problem in physics selected by the student and a member of the staff who will supervise 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. Prerequisites: Previous or concurrent registration in Physics 104, subject to the approval of the instructor.

200. Seminar (2-2) Year, I, II
An intensive study of some phase of advanced physics.
A. Mathematical Physics
B. Theoretical Mechanics
C. Kinetic Theory of Gases
D. Advanced Acoustics
E. Advanced Electronics and Electricity
F. Electromagnetic Radiation
G. Atomic Physics
H. History of Physics
I. Fluid Mechanics

250. Special Study (1-3) I
A special study course designed primarily for candidates for the Master's degree.

270. 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 30 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 30 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 100-199; 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, to be outside the field of the chairman of the department and to this work be chosen under the direction of the chairman of the department and to 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 minor is not offered in political science; however, courses in political science may be used as part of the social science major 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 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 visited by modern industrialism and population pressures.

18. Introduction to Government (3) I, II
A comparative survey of selected foreign governments: Their constitutional principles, political institutions, and governmental problems.

17A-71B. Introduction to American Government and Politics (3-3) Year, I, II
Semester I: Constitutional 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.

11A-11lB. 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 will be given to recent developments in the field of political thought. Not open to students with credit in Philosophy 11A-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 influence 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 the working of our government. Special emphasis will be placed on the 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 governmental 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, ideological, and strategic—which underly and condition the modern conflict between the "sovereign state" and the "community of nations." Full 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; administrators; 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.

155A-155B. 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 170A-170B.

156. 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 150B.

The structure and functioning of English parliamentary system with emphasis upon present day political principles and parties.

158. 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.

159. Government of the Soviet Union (3) I
Theory and practice of government in the Soviet Union, with some attention to Russian foreign affairs.

160. Special Studies in Government (2-6) I, II
Directed study and research in the field of government. Admission by permission of the instructor.

161. 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

201. 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.

202. Special Study (1-3)
An individual study course designed primarily for candidates for the master's degree.

203. 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: Standard plan for those students expecting to pursue the study of psychology beyond the A.B.; accelerated plan for those students who wish to extend their general education in the sciences, the other for those students who wish to extend their general education in the degree field of psychology. The lower division requirements for all majors are: Psychology 1, 5, and 6; 6 units in biology, 6 units in psychology, and/or 9 units in psychology; 3 units in philosophy, and/or 12 units in psychology. 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.
A minor in arts and sciences is offered in psychology. The minor must include at least 12 units of work in psychology, nine units of which must be from courses carrying upper division credit.

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 human behavior 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 100, 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 100A, 107, 123, 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, 103A, 100A or 100B, 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 103A, 104A, 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 176A-176B; 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 133; Economics 1A-1B, 100A, 100B, 150, 151, 155, and 170; Philosophy 20; Political Science 144, and 145; Sociology 50, 61; and 6 units selected from Sociology 105, 135, 150, 190, and 191.

Theoretical-Experimental: Psychology 104B, 131, 145, 150, 160A, 160B. The following courses are recommended in other departments: Chemistry 2A-2B; 2A-2B, and 3A-3B; Physics 1A and 1C; Philosophy 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 Credentials for Problems of Education 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 minor.
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 psychophysics 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 the following: Psychology 165A, 165B, 141, 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 160A.

160B. Experimental Psychology (3) I, II
Experiments in space perception, errors of judgment, and conditions of work and fatigue. Two laboratory sessions and one seminar period per week. Prerequisite: Psychology 5 and 6.

166. Honors Course (to be arranged) I, II
A special study arrangement for students admitted to the Honors Group. Enrollment limited. (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 discriminations: 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.
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 190 course.

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.

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.

Lower Division Courses
56. Contemporary Social Problems (3) I, II

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-I 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.

120. 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 social superiority and inferiority will be considered. Prerequisite: Sociology 50, 51.

130. Industrial Sociology (3) II
Problems of social organization 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; the married woman in industry and professions; descent, race, and social status; the nuclear family, the extended family, and the kinship institutions. Prerequisites: Sociology 1, 11, 50. 120. American families. 130. Sociology 1. 11, Sociology 103.

140. 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.

145. Social Psychology (3) I, II
Personality as it develops in relation to social environment. Suggestion, imitation, the crowd, public opinion, social control, prejudice, propaganda, sex differences. Prerequisites: Psychology 1, II, Sociology 50, 51. Not open to students who have credit for Psychology 145.

152. 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 145.

170. Social Pathology (3) I
Survey of many alleged abnormal phenomena in society as seen in society today, such as in various forms of individual, family, community and world disorder, as such as prostitution, extreme alcoholism, migratory workers, divorce, revolution and crime. Prerequisites: Sociology 50, 51, labor, parole, and probation; programs of prevention. Prerequisite: Sociology 50, 51.

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 control and prevention, with special attention to the protective and reformatory measures. Prerequisites: Sociology 50, 51, 170. 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 reformatory measures. Prerequisites: 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. Prerequisite: 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.

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 200A.

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 SA-SB. 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 courses may be selected from Spanish 199, 199A, 199B, 199C, or Spanish 150, 151, 152A, 152B, 155, 158, 159, 300, and 301. Political science courses may be substituted for Spanish 159.

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.

Minor

A minor in arts and sciences is offered in Spanish. The minor must include at least 12 units of work in Spanish, 9 units of which must be from courses carrying upper division credit.

A teaching minor 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.

Lower Division Courses

1. Elementary (3) I, II
Pronunciation, oral practice, readings on Spanish culture and civilization, minum essentialos of grammar.

2. Elementary (3) I, II
Continuation of Spanish 1. Prerequisite: Spanish 1 or one year of high school Spanish.

3, 4, 5, 6. 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)
Introductory study of Spanish grammar and syntax, with daily written work; class drill in conversational idioms and pronunciation; reading with oral discussion and drill. Course conducted mainly in Spanish. No prerequisite.

C. 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.

D. Intermediate Spanish (3-3) Year, II (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: C.

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: C.
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 phone
   graph recordings. Prerequisite: Spanish D, or its equivalent, with grade of C.

102A-102B. Introduction to Spanish Classics (3-3) Year, I, II (Offered in 1952-53)
   Reading from several types of classical literature. Lazarillo de Tormes and
   other novels of Regina; selections from Don Quixote, and the Glen Mayores 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, II
   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.

180. Spanish Phonetics (3) II
   A theoretical and practical study of Spanish phonetics. A study of vowels, conso-
   nants, isolated words, and phonie groups. The principles of pronunciation, 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 bib-
   liographies, 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.
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 actor's 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 practices, stagecraft, and crew training for the departmental productions. Students 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
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. The 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.

120A-120B. Stage Design (3-3) Year, I, II
The application of the principles of design, color, perspective and character to the design of settings for the performance 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.

125. 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.

140. 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.

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 Seventeenth 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.

160. Stage Direction (3) I
Planned for prospective directors of plays in schools, colleges and community theater. Through lectures, discussions, and exercises the student will become familiar with the principles, procedure and methods of stage direction. Each student will be required to direct several short plays during the course.

161A-161B-161C-161D. Advanced Intercollegiate Debate (1-1-1-1) I, II
Advanced Argumentation and debate study and preparation of briefs and an in-depth preparation of the study of intramural and 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 69 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 169.

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.

ZOLOGY
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 zoology, 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 1A, 1, or Zoology 1A. 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. Lec- tures three hours per week. Credit reduced to 2 units if student has credit for Zoology 8 or Physiology 1A.
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 1A or Biology 10B.

101. General Physiology (4) II
Fundamentals of plant and animal functions. Two lectures and two laboratory periods per week. Prerequisites: Zoology 1A-1B or Biology 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 1A-1B.

106. Comparative Anatomy of the Vertebrates (4) I
Dissertation, 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 1A-1B; recommended Zoology 100.

109. Hematology (3) I, II
Microscopic and chemical examination of blood. One lecture and two laboratory periods per week. Prerequisite: Chemistry 102.

110. Limnology (4) II
A biological survey of available fresh waters, followed by a selected problem on the relationship of an organism or group of organisms to the environment. Prerequisites: Zoology 1A-1B and Elementary Chemistry.

112. Marine Invertebrates (4) I
Identification and study of behavior and life histories of invertebrates of the San Diego region. Frequent collecting trips to the beaches required. Prerequisite: Zoology 1A or Biology 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.

115. Field Ornithology (1) I
A field study of local birds with special emphasis upon the fall migration.

116. 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 sciences 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 special 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.

123. 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.

125. Economic Entomology (4) II
Study of animal parasites with special reference to those of man. Laboratory including identification of important parasites of man, and collection and preservation of useful forms. Two hours of lecture and six hours of laboratory per week. Prerequisite: Zoology 1A or Biology 10B.

126. 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 useful forms. Two hours of lecture and six hours of laboratory 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 useful forms. Two hours of lecture and six hours of laboratory per week. Prerequisite: Zoology 1A or Biology 10B.

130. 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.

132. Genetics (2) II
Principles of plant and animal genetics. Primarily for science majors. Two lectures per week. Not open to students who have credit for Botany 155.

134. 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 concurrent registration in other. Not open to students who have credit for Botany 155.

135. Embryology (3) II
Principles of anticipatory and morphologic development. Two lectures per week. Not open to students with credit for Botany 155.

136. Evolution (2) II
The development of theories of evolution. Two lectures per week.

139. Human Heredity (2) I
Presentation of selected principles of heredity as related primarily to human inheritance. Designed primarily for non-science majors. Two lectures per week. Not open to students with credit for Zoology 155 or Botany 155.

159. 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.
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

<table>
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<tr>
<th>First Year</th>
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* 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 3
* Biology 40, Man and His Biological World, or equivalent (see lower division requirements). 3 3
* Social Science 40, Contemporary Problems. 3 3
* Sociology 45, Marriage and the Family. 2 2
* Health Education 21, Principles of Healthful Living. 3 3
* Psychology 40, Psychology and Life. 3 3
* Physical Education (activity courses). 3 3
* Elective. 3 3

| TOTAL | 151 | 154 |

COURSES OF INSTRUCTION

BIOLGY

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 1.

**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.

**SOCIODE**

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.
BENTON, CARL WEBER  Instructor in Physical Education B.S., University of California at Los Angeles. 1948.*

BIRCH, AGEEN 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. 1948.*

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. 1945.*

BROOKS, BAYLOR. Assistant Professor of Geology B.A., Stanford University; two years graduate study at University of Arizona and Stanford University. 1951.*

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-half year of graduate study at the University of Chicago. 1946.*

BURNETT, GAIL ALLEN Assistant Professor of English M.A., Claremont Colleges. 1949.*

CAMERON, ROY ERNEST Professor of Economics Ph.D., University of Southern 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; Ph.D., University of Minnesota. 1948.* Associate Professor of Education

CASSEL, RUSSELL N. Assistant Professor of Education D.Ed., University of Southern California. 1946.*

CAVE, MARY E. Assistant Professor of Physical Education B.S., University of North Dakota; one-year's study at Bennington College. 1943.*

CHADWICK, LEONARD E. Assistant Professor of Economics B.S. and two and one-half years of graduate study at the University of California. 1945.*

CHOPLIN, ROSA MARIA (Mrs. Ralph) Acting Instructor in Spanish University of California at Los Angeles; one year graduate study at the University of Southern California. 1948.*

CHURCHILL, CHARLES W. Assistant Professor of Sociology Ph.D., New York University. 1943.*

COLLINS, MYRON D. Lecturer in Music Education, 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.*

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 M.A., Stanford University. 1949.* Assistant Professor of Commerce

DENNY, PAUL A. Acting Instructor in Biology M.A., University of California. 1949.*

DEPUTY, ERBY CHESTER Professor of Education Ph.D., Columbia University. 1931.*

DICKHAUT, FLORENCE LILLIAN SMITH (Mrs. Charles A.) M.A., University of Chicago. 1917.* Professor of English

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.*

ELLS, 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.*

ENGLENDON, 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. 1916.*

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. Acting Assistant Professor of Music 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 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.*

GELDRICH, EDWARD W. Assistant Professor of Psychology M.A., 1935, University of Cincinnati; three years graduate study at the University of Chicago. 1947.*

GENERALIS, 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. 1928.*

GIBSON, ERNEST DANA  
Associate Professor of Commerce  
B.S., 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.*

GREEN, IRVIN S.  
Assistant Professor of Psychology  
Ph.D., University of Pittsburgh. 1945.*

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. 1919.*

GULICK, SIDNEY L., JR.  
Professor of English  
Ph.D., Yale University. 1945.*

HALLEY, ROBERT  
Acting Instructor in Mathematics  
B.S., California University at Los Angeles. 1949.*

HAMMACK, EDITH CHASTAIN  
Associate Professor of Education  
B.A., San Jose State College. 1911.*

HARLEY, ROBERT  
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  
B.S., 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. 1949.*

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  

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. 1918.*

HUNTER, JAMES J., JR.  
Professor of Education  
Ph.D., Syracuse University. 1946.*

ISENSEE, 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., 1935, University of Southern California. 1930.*

JACOBSEN, HELEN M.  
Senior Librarian  
B.S., Teachers College. 1946.*

JOHNSON, FRANK LOUIS  
Associate Professor of English  
Ph.D., University of Wisconsin. 1939.*

JOHNSON, MYRTLE (Retired 1946)  
Professor of Biology  
Ph.D., University of California. 1928.*

JOHNSON, ROBERT  
Assistant Professor of Music  
Ph.D., University of California. 1944.*

JOHNSON, THOMAS  
Assistant Professor of Chemistry  
Ph.D., Washington University. 1947.*

KALBFELD, DAVID C.  
Assistant Professor of Physics  
Ph.D., University of California. 1948.*

KAMM, MADGE E.  
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. 1938.*

KIDWELL, CHESTER B.  
Professor of English  
Ph.D., Stanford University. 1947.*

KIDWELL, WILLIAM M.  
Associate Professor of Psychology  
Ph.D., Stanford University. 1949.*

KIPZINGER, 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, Aarhus, Denmark. 1948.*

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.*

LARISSEN, WILLIAM H.  
Professor of Health Education  
Ph.D., Ohio State University. 1947.*

LARREON, EYANGELINE O.  
Assistant Professor of Commerce  
B.A., Stanford University. One and one-half years 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 Leipsic Conservatory. 1938.*

LEIFFER, DONALD B.  
Professor of Political Science  
Ph.D., Harvard University. 1945.*

LEMME, MAURICE M.  
Associate Professor of Mathematics  
Ph.D., Harvard University. 1948.*

LEONARD, CHARLES B.  
Professor of History  
Ph.D., University of California. 1921.*

LESLEY, LEWIS B.  
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.*

LUCIO, WILLIAM BOW
Assistant Professor of Chemistry
B.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.*

LUCRO, WILLIAM HOWARD
Director of Elementary Education
Ph.D., University of California. 1936.*

MADDOX, RICHARD N.
Dean of Education; Professor of Education
Ph.D., Columbia University. 1936.*

MARCHAND, ERNEST L.
Professor of English
Ph.D., University of Wisconsin. 1946.*

McBLAIR, WILIAM
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
Ph.D., Colorado State College of Education. 1946.*

McGAGHEY, JANET M. (Mrs. J. R.)
Assistant Professor of Music

McLONEY, WILT L.
Instructor in Physical Science
M.A., Colorado State College of Education. 1948.*

MENDENHALL, MARY
Dean of Women; Professor of Philosophy
Ph.D., Yale University. 1923.*

MERRILL, JOHN E.
Assistant Professor of History
Ph.D., Harvard University. Two years of graduate study at Stanford University. 1946.*

MERZACHER, CLAUDE FELL.
Instructor in Chemistry
M.A., Clarement 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
Ph.D., University of Southern California. 1931.*

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.*

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Professor of History
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SMITH, CHARLES ROBERTS  Assistant Professor of Physical Education
M.S., University of Southern California. 1947.*

SMITH, CLIFFORD EDWARD  Professor of Astronomy
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SMITH, DEANE FRANKLIN  Associate Professor of Music
M.M., Northwestern University. 1939.*

SMITH, LEILA DEBORAH (Retired 1948)  Professor of Music
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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.*

SPRINTON, CHRISTINE  Associate Professor of Music
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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. 1925.*

STOUGHL, MORROW F.  Assistant Professor of Education
Ph.D., University of California. 1930.*

STOVALL, HARRIET B. (Mrs. R. H.)  Senior Librarian
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STRADL, 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.  A.B., University of Oklahoma. 1947.*

SWIGGETT, JEAN D.  Associate Professor of Art
M.F.A., University of Southern California. 1946.*

TEALE, RUTH A.  Assistant Professor of Home Arts
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TANNER, JESSIE R. (Retired 1939)  Associate Professor of Physical Education
B.S. and Bachelor's Teaching Diploma. Teachers College, Columbia University, Graduate study at University of California and University of Southern California. 1936.*

TAYLOR, KENNETH M.  Assistant Professor of Physics
Ph.D., University of California at Los Angeles. 1949.*

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M.A., University of Michigan. 1946.*

TERHUNE, JOHN A.  Lecturer in Physics
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TERRI WILLIAM L. ...Lecturer in Physical Education
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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.*

TOLLEFSSEN, DOROTHY J. ...Assistant Professor of Physical Education
M.A., University of California. 1945.*

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 California. 1949.*

TUCKER, GORDON H. ...Professor of Biology
A.B., San Diego State College.

VARLENS, FREDERIC S. ...Assistant in Education
A.B., San Diego City College. 1927.*

WEBB, CHARLES R., JR. ...Professor of History
Ph.D., Harvard University. 1949.*

WEST, EDNA A. ...Assistant Professor of Commerce
M.A., Crafton Colleges. 1948.*

WHITE, ALFRED E. ...Registrar; Director of Educational Research:
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M.A., and one year of graduate study at Teachers College, Columbia. 1948.*

* Date of appointment.
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Botany

Zoology