

UNIVERSITY OF CALIFORNIA
BULLETIN

**GENERAL
CATALOGUE**

Primarily for Students in the
DEPARTMENTS AT LOS ANGELES

Fall and Spring Semesters

1946-1947

For Sale by the
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UNIVERSITY OF CALIFORNIA

General Catalogue

Admission and Degree Requirements

*Announcement of Graduate and
Undergraduate Courses of Instruction*

FOR THE FALL AND SPRING SEMESTERS

1946-1947

Primarily for Students in the
DEPARTMENTS AT LOS ANGELES

405 HILGARD AVENUE • LOS ANGELES

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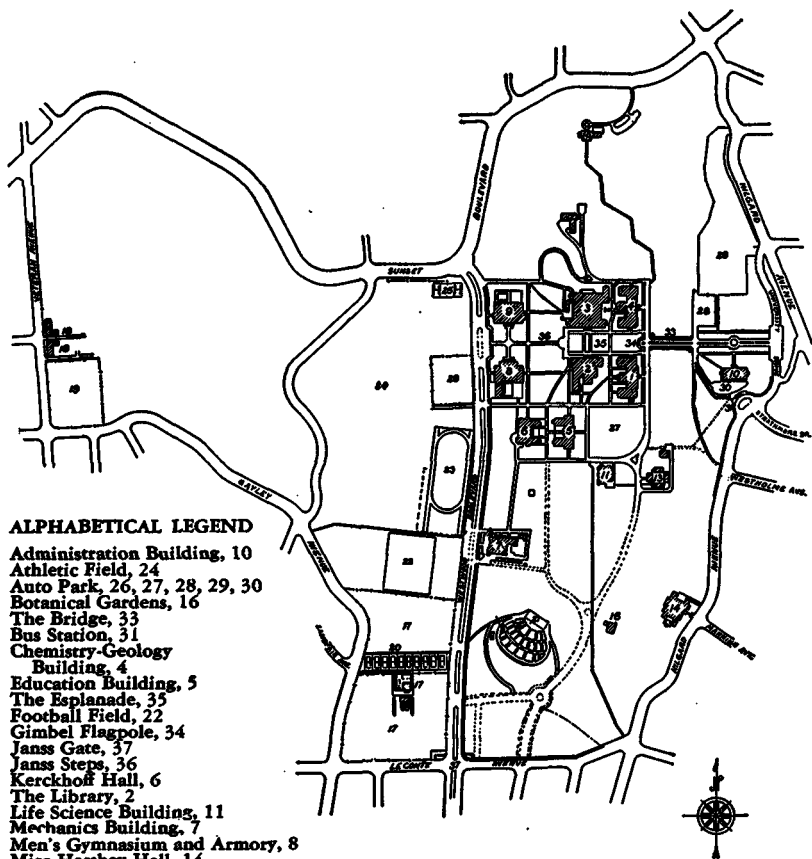
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**MAP OF
UNIVERSITY OF CALIFORNIA
LOS ANGELES CAMPUS**

CALENDAR, 1946-1947

FALL SEMESTER

Aug. 16, Friday	Applications for admission to undergraduate or graduate standing in the fall semester, with complete credentials, should be filed on or before this date.
Sept. 6, Friday	Last day for filing of applications for readmission by students returning after an absence.
Sept. 10, Tuesday	{ Physical examinations for new students. Consultation with advisers by new students. Counseling of all students.
Sept. 14, Saturday	
Sept. 11, Wednesday		9:00 A.M., Examination in Subject A.
Sept. 16, Monday	{ Registration of new students. (Graduates and undergraduates) 8:00 A.M.-11:00 A.M. Initials A-K. 12:30 P.M.- 4:00 P.M. Initials L-Z.
Sept. 17, Tuesday		{ Registration of old and reëntrant students. (Graduates and undergraduates) 8:00 A.M.-10:00 A.M. Initials S-Z. 10:00 A.M.-12:00 M. Initials A-E. 1:30 P.M.- 3:30 P.M. Initials F-K.
Sept. 18, Wednesday	{ Registration of old and reëntrant students. (Graduates and undergraduates) 8:00 A.M.-10:00 A.M. Initials L-R. 10:00 A.M.-12:00 M. All initials. Registration of any student, old or new. 1:30 P.M.- 4:00 P.M. All initials.
Sept. 16, Monday		{ Enrollment in all classes.
Sept. 21, Saturday	{ Filing of registration books.
Sept. 18, Wednesday	9:00 A.M., Special examination in Subject A.
Sept. 21, Saturday	Last day to file registration books or to change study lists <i>without fee</i> .
Sept. 23, Monday	Instruction begins.
Oct. 3, Thursday	Last day to file applications for graduate reading examinations in modern foreign languages.
Oct. 7, Monday	Last day to file applications for advancement to candidacy for the master's degree to be conferred in February, 1947.
Oct. 7, Monday	Last day to add courses to study lists.
Oct. 12, Saturday	Columbus Day—a holiday.
Oct. 19, Saturday	Examination in modern foreign languages for candidates for master's or doctor's degrees.
Oct. 26, Saturday	Last day to drop courses from study lists without penalty of grade F (failure).
Oct. 26, Saturday	Last day to file <i>without fee</i> , notice of candidacy for the bachelor's degree to be conferred in February, 1947.
Nov. 16, Saturday	End of mid-term period.
Nov. 28, Thursday	} Thanksgiving recess.
Nov. 30, Saturday	
Dec. 9, Monday	Last day for filing with the committee in charge, theses for the master's degree to be conferred in February, 1947.
Dec. 14, Saturday	Last day to file notice of candidacy for the bachelor's degree to be conferred in February, 1947.
Dec. 23, Monday	} Christmas recess.
Jan. 8, Wednesday	
Jan. 1, Wednesday	New Year's Day—a holiday.
Jan. 9, Thursday	Classes resume.
Jan. 27, Monday	} Final examinations, fall semester.
Feb. 6, Thursday	
Feb. 6, Thursday	Last day to file with the Dean of the Graduate Division completed copies of theses for the master's degree to be conferred in February, 1947.
Feb. 6, Thursday	Fall semester ends.

SPRING SEMESTER

Jan. 17, Friday	Applications for admission to undergraduate or graduate standing in the spring semester, with complete credentials, should be filed on or before this date.
Feb. 7, Friday	Last day for filing of applications for readmission by students returning from an absence.
Feb. 10, Monday	Physical examinations for new students. Consultation with advisers by new students. Counseling of all students. 9:00 A.M., Examination in Subject A. Lincoln's Birthday—a holiday. Last day to file applications for Alumni Association Scholarships. Registration of new students. (Graduates and undergraduates) 8:00 A.M.—11:00 A.M. Initials L—Z. 12:30 P.M.— 4:00 P.M. Initials A—K. Registration of old and reentrant students. (Graduates and undergraduates) 8:00 A.M.—10:00 A.M. Initials A—E. 10:00 A.M.—12:00 M. Initials F—K. 1:30 P.M.— 4:00 P.M. Initials L—R. Registration of old and reentrant students. (Graduates and undergraduates) 8:00 A.M.—10:00 A.M. Initials S—Z. 10:00 A.M.—12:00 M. All initials. Registration of any student, old or new. 1:30 P.M.— 4:00 P.M. All initials.
Feb. 11, Tuesday	
Feb. 13, Thursday	
Feb. 15, Saturday	
Feb. 11, Tuesday	
Feb. 12, Wednesday	Enrollment in all classes.
Feb. 15, Saturday	Filing of registration books.
Feb. 17, Monday	Special examination in Subject A.
Feb. 18, Tuesday	Last day to file applications for fellowships and graduate scholarships tenable at Los Angeles for 1947-1948.
Feb. 19, Wednesday	Last day to file registration books or to change study lists <i>without fee</i> .
Feb. 17, Monday	Instruction begins.
Feb. 22, Saturday	Last day to file applications for graduate reading examinations in modern foreign languages.
Feb. 19, Wednesday	Last day to file applications for advancement to candidacy for the master's degree to be conferred in June or in September, 1947.
Feb. 20, Thursday	Last day to add courses to study lists.
Feb. 22, Saturday	Examination in modern foreign languages for candidates for master's or doctor's degrees.
Feb. 24, Monday	Last day to file applications for undergraduate scholarships for the academic year 1947-1948.
Mar. 6, Thursday	Last day to drop courses from study lists without penalty of grade F (failure).
Mar. 10, Monday	Last day to file <i>without fee</i> , notice of candidacy for the bachelor's degree to be conferred in June, 1947.
Mar. 10, Monday	End of mid-term period.
Mar. 15, Saturday	Last day for filing with the committee in charge, theses for the master's degree to be conferred in June, 1947.
Mar. 22, Saturday	Last day to file notice of candidacy for the bachelor's degree to be conferred in June, 1947.
Mar. 29, Saturday	Memorial Day—a holiday.
Mar. 29, Saturday	Final examinations, spring semester. Last day to file with the Dean of the Graduate Division completed copies of theses for the master's degree to be conferred in June, 1947.
Apr. 19, Saturday	
May 12, Monday	
May 17, Saturday	Spring semester ends.
May 30, Friday	
June 9, Monday	
June 19, Thursday	
June 19, Thursday	

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THE UNIVERSITY OF CALIFORNIA

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THE UNIVERSITY OF CALIFORNIA

FOUNDED 1868

THE UNIVERSITY OF CALIFORNIA is composed of academic colleges, professional schools, divisions, departments of instruction, museums, libraries, research institutes, bureaus and foundations, and the University of California Press, situated on eight different campuses throughout the State, namely: Berkeley, Los Angeles, San Francisco, Davis, Riverside, Mount Hamilton, La Jolla, and Santa Barbara. A list of the divisions on each campus follows:

I. AT BERKELEY

The Colleges of

Letters and Science,

Agriculture (including the Department of Agriculture, the Agricultural Experiment Station, and the Agricultural Extension Service),

Chemistry,

Engineering,

Pharmacy (first year of the B.S. curriculum).

The Schools of

Architecture,

Business Administration,

Education,

Forestry,

Jurisprudence,

Librarianship,

Medicine (first year),

Nursing (in part),

Optometry,

Public Health (in part),

Social Welfare.

The Graduate Division (Northern Section).

University Extension (offering instruction wherever classes can be formed, or anywhere in California by correspondence, and providing lectures, recitals, moving pictures and other material for visual instruction).

The California Museum of Vertebrate Zoölogy.

The Museum of Paleontology.

The Anthropological Museum.

The Institute of Child Welfare.

The Institute of Experimental Biology.

The Institute of Industrial Relations.

The Bureau of International Relations.

The Bureau of Public Administration.

The William H. Crocker Radiation Laboratory.

The University of California Press.

II. AT LOS ANGELES

University of California at Los Angeles:

College of Letters and Science,

College of Business Administration,

College of Engineering,

College of Applied Arts,

College of Agriculture (including courses of instruction and the Agricultural Experiment Station's activities in Los Angeles),

School of Education,

School of Public Health (in part),

Graduate Division, Southern Section,

The Summer School of Surveying,

Bureau of Governmental Research,

The Senator William Andrews Clark Memorial Library.

Los Angeles Medical Department, graduate instruction only.

III. AT SAN FRANCISCO

Medical School (second, third, and fourth years, including the University Hospital and Langley Porter Clinic),

School of Nursing (in part),

School of Public Health (in part),

The George Williams Hooper Foundation (for Medical Research),

College of Dentistry,

College of Pharmacy,

California School of Fine Arts,

Hastings College of the Law.

IV. AT DAVIS

The College of Agriculture, including the University Farm and certain divisions of the Department of Agriculture and of the Agricultural Experiment Station.

V. AT RIVERSIDE

The College of Agriculture, including the Citrus Experiment Station.

VI. AT MOUNT HAMILTON

The Lick Astronomical Department (Lick Observatory).

VII. AT LA JOLLA

The Scripps Institution of Oceanography.

VIII. AT SANTA BARBARA

Santa Barbara College.

ELSEWHERE

In addition to the principal divisions named above, the University maintains several field stations of the Agricultural Experiment Station in various parts of the State.

HISTORY AND ORGANIZATION

The establishment of the University of California in 1868 came as the result of three separate movements—one originating in private initiative, one in State action, and one in Federal action.

Private action owed its inception to the foresight of the Reverend Henry Durant, who in 1853 opened in Oakland the Contra Costa Academy, under the auspices of the Presbytery of San Francisco and of the Congregational Association of Oakland. The name was soon changed to College School, in order to signify that the undertaking was only preparatory to a projected college. In 1855 the institution was incorporated under the name of College of California and was formally opened in 1860. Classes were graduated from 1864 to 1869, inclusive. In 1856 the College obtained a tract of land five miles to the north of Oakland and ten years later the name of Berkeley was given to the townsite about the new college campus.

State action had its start in the Constitutional Convention of 1849, which incorporated into the fundamental law recognition of and provision for a State University. There was constant public agitation down to 1868 for making the provisions effective.

Federal action began in 1853 when Congress gave the State 46,000 acres of land for a "seminary of learning." In 1862 the Morrill Act provided an additional grant of public lands for the establishment of an Agricultural, Mining, and Mechanical Arts College.

These three forces began working together to one end—the establishment of a University of California. The College of California contributed its buildings and four blocks of land in Oakland and its 160 acres of land in Berkeley; the Federal Government, the congressional gift of 150,000 acres of public lands; and the State, its property accumulated for the purpose, together with new legislative appropriations. The legislative act creating the University of California was signed by Governor Henry H. Haight on March 23, 1868, and the new institution opened its doors for instruction in September, 1869.

The first President was Henry Durant (1869-72). He was followed by Daniel Coit Gilman (1872-75), John LeConte (1875-81), William T. Reid (1881-85), Edward S. Holden (1885-88), Horace Davis (1888-90), Martin Kellogg (1890-99), Benjamin Ide Wheeler (1899-1919), David Prescott Barrows (1919-23), William Wallace Campbell (1923-30), Robert Gordon Sproul (1930-).

The University of California, under the terms of the Constitution of the State, is a public trust, charged with the function of providing education of collegiate grade. Through aid from the State and Federal governments, and by private gifts, it provides instruction in literature and the arts, in the sciences, and in the professions of architecture, engineering, teaching, law, medicine, dentistry, nursing, optometry, and pharmacy. Instruction in all of the colleges of the University is open to all qualified persons, without distinction of sex.

ADMINISTRATION

The administration of the University of California is entrusted, under the State Constitution, to a corporation styled THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, consisting of the Governor, the Lieutenant-Governor, the Speaker of the Assembly, the State Superintendent of Public Instruction, the President of the State Board of Agriculture, the President of the Mechanics Institute of San Francisco, the President of the California Alumni Association, and the President of the University as members *ex officio*, and sixteen other regents appointed by the Governor. This corporation has "full powers of organization and government, subject only to such legislative control as may be necessary to insure compliance with the terms of the endowments of the University and the security of its funds." The corporation is also vested with the legal title and the management and disposition of the property of the University and the property held for its benefit, and has the power to take and hold, either by purchase, or by donation or by gift, testamentary or otherwise, or in any other manner, without restriction, all real and personal property for the benefit of the University or incidental to its conduct. It is further authorized to delegate to its committees or to the faculty or to others such authority or functions in the administration of the University as it may deem wise. Pursuant to this authority it has created an academic administrative body called the Academic Senate.

The Academic Senate consists of the President, Vice-Presidents, Deans, Directors, the Registrars (at Berkeley and Los Angeles), the University Librarians (at Berkeley and Los Angeles), and all professors and instructors giving instruction in any curriculum under the control of the Academic Senate. Instructors of less than two years' service are not entitled to vote.

The Academic Senate is divided into two sections: The Northern Section includes members of the Senate whose duties lie primarily in Berkeley, San Francisco, or Davis, or at Mt. Hamilton; the Southern Section includes members of the Senate whose duties lie primarily in Los Angeles, Riverside, or La Jolla. The President of the University is chairman, *ex officio*, of each Section of the Academic Senate.

The Senate, subject to the approval of the Regents, determines the conditions for admission, for certificates, and for degrees. It authorizes and supervises all courses of instruction in the academic and professional colleges and schools. It recommends to the Regents all candidates for degrees and has general supervision of the discipline of students.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

HISTORY AND DEVELOPMENT

IN MARCH, 1881, the legislature of California created the Los Angeles State Normal School. Five acres of ground were donated at the corner of Fifth Street and Grand Avenue—the present site of the Los Angeles City Library. Instruction was begun in August, 1882, with a faculty of three teachers and an enrollment of sixty-one students.

Following a legislative appropriation in 1911, a new site of twenty-five acres on North Vermont Avenue was obtained for the Normal School. In the fall of 1913 the cornerstone was laid for the first building, Millspaugh Hall, named to commemorate Jesse F. Millspaugh, who was president during the period 1904–1917. The School was moved into its new quarters in September, 1914, where it existed until the summer of 1919.

Through legislative action made effective by the Governor's signature on July 24, 1919, the grounds, buildings, and records of the Los Angeles State Normal School were transferred to The Regents of the University of California. In September of that year, university instruction was begun under the name Southern Branch of the University of California. The educational facilities were expanded to include the freshman and sophomore years in Letters and Science beginning with September, 1919; the third and fourth years with September, 1923 and 1924, respectively. The degree of Bachelor of Arts was conferred in the College of Letters and Science for the first time in June, 1925. In 1922 the teacher-training courses were organized as a Teachers College. The degree of Bachelor of Education was conferred for the first time in June, 1923.

On February 1, 1927, the name of the institution was changed to UNIVERSITY OF CALIFORNIA AT LOS ANGELES.

The University is now engaged in building a new physical plant upon a campus of three hundred eighty-four acres which was bought and presented to the University by the cities of Santa Monica, Venice, Beverly Hills, and Los Angeles. The removal to the new site from North Vermont Avenue took place in August, 1929, and instruction in all departments was begun in the new buildings on September 23, 1929.

By action of the Regents, work in the College of Agriculture was established at Los Angeles in November, 1930. The College of Business Administration was established in June, 1935, with instruction beginning in September 1936; the College of Applied Arts and the School of Education were established July 1, 1939.

On August 8, 1933, graduate study at the University of California at Los Angeles leading to the degrees of Master of Arts and Master of Science, and to the Certificate of Completion for the general secondary and junior college teaching credentials was authorized by the Regents. Accordingly, in September, 1933, one hundred fifty candidates were admitted to work in the fol-

lowing fields: botany, economics, education, English, geography, geology, history, mathematics, philosophy, physics, political science, psychology, and zoölogy; the first master's degrees were conferred in June, 1934. To the fields first made available there have been added sixteen others. Beginning in September, 1936, candidates for the Ph.D. degree were accepted in the fields of English, history, mathematics, and political science; to these have been added chemistry, economics, engineering, geology, Germanic languages, meteorology, microbiology, oceanography, philosophy, physical-biological science, physics, plant science (including botanical science and horticultural science), psychology, Romance languages and literature, and zoölogy; the first doctorate was conferred in 1938. It is expected that other fields will be available in subsequent years, as circumstances warrant. In September, 1941, candidates for the degree of Doctor of Education were accepted.

Under the terms of a special appropriation made by the State Legislature in the spring of 1943, a College of Engineering was established in November, 1944.

SITE OF THE CAMPUS—CLIMATE

The Los Angeles campus of the University of California is situated on the lower south slope of the Santa Monica Mountains which overlook Hollywood and the western part of Los Angeles; the Pacific Ocean, visible from the grounds, is five miles distant in a direct line. The warmest month of the year is August, with a mean temperature of about 68°; the coolest is January, with a mean temperature of 49°; the annual rainfall is about 18 inches, mostly between December and March. Proximity to the ocean insures an even temperature without extremes; the daily range of variation is about fifteen degrees.

The University campus is within the corporate limits of the city of Los Angeles, west of Beverly Hills. It extends along the south side of Sunset Boulevard from Hilgard Avenue to Veteran Avenue, and is bounded on the south by LeConte and Gayley avenues; automobiles should turn south from Sunset Boulevard at Hilgard Avenue, or north from Wilshire Boulevard at Westwood Boulevard.

The campus may be reached by bus as follows: from *Los Angeles* business district (Fifth and Hill Streets), Los Angeles Motor Coach line, via Wilshire Boulevard, and Pacific Electric Co. Beverly-Sunset boulevards University bus line. From *Los Angeles*, western terminus of Pico car line, Bay Cities Transit Co. bus, via Pico and Westwood boulevards. From *Hollywood* (North Vermont Avenue and Hollywood Boulevard), Pacific Electric Co. bus, via Hollywood and Sunset boulevards. From *Santa Monica*, Pacific Electric Co. bus, via Wilshire Boulevard, and Bay Cities Transit Co bus via Santa Monica Boulevard.

Students coming to Los Angeles by rail may ordinarily obtain tickets and check baggage to West Los Angeles without additional cost if done at the time when the railroad ticket is purchased. The cost of carfare and baggage transfer from Los Angeles is thereby considerably reduced.

SURVEY OF CURRICULA

Instruction at the University of California at Los Angeles is offered in (a) the College of Letters and Science, with curricula leading to the degrees of Associate in Arts, Bachelor of Arts, and Bachelor of Science, curricula of the earlier years of the College of Dentistry, of the Medical School, and of the College of Chemistry; (b) the College of Business Administration, with curricula leading to the degrees of Associate in Arts and Bachelor of Science; (c) the College of Applied Arts, with curricula leading to the degrees of Associate in Arts, Bachelor of Arts, and Bachelor of Science, curricula of the earlier years of the School of Optometry and of the College of Pharmacy, and a curriculum leading to the Certificate in Public Health Nursing; (d) the College of Engineering, with curricula leading to the degree of Bachelor of Science; and (e) the College of Agriculture, with curricula leading to the degree of Bachelor of Science. Students electing certain curricula in the College of Agriculture may register at Los Angeles for the first two years and then transfer to Berkeley or Davis to complete the requirements for the degree. The School of Education at Los Angeles supervises curricula leading to the Certificate of Completion for the various elementary and secondary teaching credentials, and for the administrative credential. Graduate study, leading to the degrees of Master of Science and Master of Arts, and to the degrees of Doctor of Philosophy and Doctor of Education also is available at the University of California at Los Angeles.

THE UNIVERSITY LIBRARY

The University Library has nearly 500,000 volumes that are accessioned, and approximately 8000 periodicals and continuations are regularly received.

The Library is open Monday through Friday from 7:45 A.M. to 10 P.M.; Saturday from 7:45 A.M. to 5 P.M.; and Sunday from 2 to 6 P.M.

All graduate students have access to the bookstack and a limited number of cubicles are available upon application to the Head of the Circulation Department. Facilities are offered for the reading of microfilm.

Special collections in such fields as chemistry, physics, and agriculture are housed in the respective departments; they are not available evenings. A branch Library in Engineering is temporarily housed in the General Library.

A planned extension of the University Library building will provide a Graduate Reading Room, a Periodicals Room, and a Department of Rare Books, Manuscripts, and Archives.

Supplementing the General Library is the William Andrews Clark Memorial Library* of nearly 35,000 books, pamphlets, and manuscripts, featuring English culture of the 17th, 18th, and 19th centuries, and the history of Montana.

* This library is not on the University campus but is situated at 2205 West Adams Boulevard (Telephone RO 5925). It may be reached by Los Angeles Motor Coach line, via Wilshire Boulevard and Western Avenue to West Adams Boulevard, or by the "A" car of the Los Angeles Transit Lines.

Materials in this library do not circulate and admission is by card only, application for which should be made to the University Librarian. Descriptive leaflets are available.

UNIVERSITY EXTENSION

University Extension offers facilities to men and women who seek some form of higher education, but are prevented from taking up residence at the University.* An increasing number of Extension courses are offered to those who have been to college and who desire to advance themselves professionally. The University of California, therefore, provides, through University Extension, educational opportunities to adults living in any part of the State.

The work is carried on in five ways:

(1) **Class Instruction.** Classes are organized in cities and towns wherever a sufficient number of people can be secured who wish to study a subject. Instruction is offered in art, business methods, economics, education, engineering, geography, history, languages, law, literature, mathematics, political science, psychology, public speaking, science, etc. Opportunity is offered through the Class Department for applicants for admission to the University to remove entrance deficiencies by a program of Extension courses approved in advance by the Director of Admissions.

(2) **Correspondence Instruction.** Courses are given by mail in art, astronomy, composition and literature, drawing, economics, education, engineering, history, the languages, mathematics, music, philosophy, physics, political science, psychology, etc. Courses may begin at any time.

(3) **Lectures, singly or in series,** are provided for any committee, club, organization, or community in the State that will make the necessary arrangements for their delivery.

(4) **Visual Instruction.** University Extension circulates visual aids such as motion picture reels, which cover many phases of educational work.

(5) **Institutes, for periods ranging from two days to several weeks,** provide intensive familiarization courses for interested groups, under the leadership of experts in theory and practice.

Persons desiring to take advantage of the facilities offered by any one of these departments may receive detailed information on request. Address University Extension, 130 Administration Building, University of California, Los Angeles 24, or 813 South Hill Street, Los Angeles 14, or University of California, Berkeley 4.

* For information concerning admission to the University through residence courses in University Extension, see page 26.

ADMISSION TO THE UNIVERSITY

STUDENT STATUS

THE STUDENTS who are admitted to the University of California at Los Angeles fall into two groups: undergraduates, and graduate students.

The undergraduates fall again into two groups: the regular students, and the special students.

The regular students are persons who have met all the requirements for admission to the University and who are pursuing, within the University, programs of study that comply with the established rules and regulations and lead to the degrees of Associate in Arts, Bachelor of Arts, or Bachelor of Science.

The special students are those persons twenty-one years* of age or over who have not had the opportunity to fulfill the requirements laid down for the admission of regular students. Each student in this group is admitted only after special consideration. A special student cannot be a candidate for a degree. A special student may, however, at any time attain the status of regular student by satisfying all the requirements for that status in the college that he desires to enter.

Graduate students are of two designations: those in regular graduate status, and those in unclassified graduate status. Regular graduate students are graduates of this University or of other institutions with equivalent requirements for graduation, who are carrying on advanced (graduate) work for higher degrees or teaching credentials. Unclassified graduates are those who have received a recognized degree and who wish to undertake work leading to another bachelor's degree, or to complete preparation necessary for acceptance in regular graduate status; students so designated may take undergraduate courses only. Detailed information concerning admission to each student status follows.

ADMISSION IN UNDERGRADUATE STATUS

An applicant who wishes to enter the University must fulfill the general requirements for admission, as set forth below. Application blanks may be obtained from the Director of Admissions, 121 Administration Building, University of California, Los Angeles 24. Every applicant for admission is required to pay an application fee of \$5 when the first application is filed.† Remittance by bank draft or money order should be made payable to The Regents of the University of California.

* This minimum age requirement may be waived in the case of men and women having records of service with the armed forces of the United States who desire to enter the University as special students.

† Veterans who expect to enroll under the provisions of Public Law 846 (G. I. Bill of Rights), or Public Law 16, are not required to remit this fee with their applications.

Admission in Freshman Standing

Admission by Certificate—

A graduate of an accredited high school may enter the University in freshman standing provided the following conditions have been satisfied (see statement on page 30 regarding admission of returning veterans).

1. *Graduation.* Graduation from an accredited high school usually requires the completion of sixteen matriculation units or credits in selected subjects.

2. *Subject requirements.* The high school program must include the following subjects, (a) to (f), inclusive, which represent the minimum subject requirements, and which must be approved by the high school principal as college preparatory courses.*

- (a) History 1 unit. —This may consist of any two semesters of United States history, or United States history and civics.
- (b) English 3 units.—These may consist of any six semesters that give preparation in written and oral expression and in the reading and study of literature. Reading and study of contemporary literature may be included. The requirement in English must be satisfied by credit designated as "English."
- (c) Mathematics 2 units.—These must consist of two semesters of elementary or advanced algebra, and two semesters of plane geometry, or solid geometry and trigonometry.
- (d) Science 1 unit. —This may consist of a year course in one field of science, namely, biology, botany, chemistry, physical science, physics, physiology, or zoology. The science selected must be an advanced (3d or 4th year) laboratory science, and the two semesters must be in the same subject field.
- (e) Foreign language..... 2 units.—These must be in one language.
- (f) Advanced (3d or 4th year) mathematics, or foreign language, or chemistry, or physics—1 unit; or two years of a second language—2 units
1 or 2 units.

3. *Scholarship requirement.* For any of these required subjects completed in the ninth grade (first year of high school), *subject credit* is given irrespective of the scholarship grade received, provided, of course, it is a passing grade. In the subjects completed in the *last three years* of the high school program, however, a scholarship *average* of grade B (based on a marking system of four passing grades: A, B, C, D) must have been maintained. In computing scholarship averages *semester grades* rather than year grades are used. For example, a semester grade A in either half of one prescribed course may be used with a

* Although this minimum program will entitle the student to entrance to the University, it will not give him the right to enter unconditionally the curriculum of his choice unless he has credit for the prescribed subjects. Information regarding the preparation required and recommended for each curriculum may be found in the later pages of this bulletin.

semester grade C in either half of any other prescribed course to obtain a B average. Required subjects taken in the last three years of high school in which a grade D has been received will not be counted either in reckoning the required scholarship average or in satisfaction of the subject requirements. A grade earned by repeating a course, in which the original mark was not higher than C, may be counted.

Subject A: English Composition. An examination in English composition, designed to test the applicant's ability to write English without gross errors in spelling, grammar, diction, sentence structure, and punctuation, is required of all undergraduate entrants. The examination is given at the opening of each semester. Students who do not pass in the examination are required to take the Course in Subject A without unit credit toward graduation.

Additional Ways of Gaining Admission

The above-enumerated subjects have been selected as a central core of academic subjects for university preparation because it has been demonstrated that the student who completes them satisfactorily is most likely to be successful in his university work. In keeping, however, with the University's policy that no worthy student shall be denied admission, the Board of Admissions has been authorized to make certain exceptions to the general rules governing entrance for an applicant who may have subject shortages but a *superior* scholarship record. Every such applicant, upon submitting his official transcript of record, is given special consideration by the Director of Admissions. In general, an applicant with superior scholarship but with subject shortages may qualify for entrance to the University of California as follows:

(1) If he ranks in the upper tenth of his class and has a substantial academic preparation, although he may have subject deficiencies.

(2) If he has not less than 15 high school units of grade A or B in work taken in the ninth, tenth, eleventh, and twelfth years, or not less than 12 high school units of grade A or B in the work of the tenth, eleventh, and twelfth years; and not more than two subject deficiencies in the required list (a) to (f).

(3) If he has not less than 15 high school units with no grade lower than C in work taken in the ninth, tenth, eleventh, and twelfth years, or not less than 12 high school units with no grade lower than C in work taken in the tenth, eleventh, and twelfth years; and not less than 6 high school units of grade A or B selected from the following 10 units of academic subjects:

Third- and fourth-year English

Third- and fourth-year mathematics

Third- and fourth-year laboratory science

Third- and fourth-year foreign language

Third- and fourth-year history

(4) If he has not less than 15 high school units with no grade lower than C in work taken in the ninth, tenth, eleventh, and twelfth years, or not less than 12 high school units with no grade lower than C in work taken in the tenth,

eleventh, and twelfth years; and passes the *Examination in Subject A*; and has grade A or B in the following subjects:

Plane geometry, 1 unit.

Second-year foreign language, 1 unit.

Third- or fourth-year laboratory science, 1 unit.

Requirement (*f*), 1 unit.

Removal of Admission Deficiencies

Deficiencies in the subject or scholarship requirements for admission in freshman standing by certificate may be removed in any one of the following ways:

(1) By courses in the University of California Extension which offers work of high school level, and college courses (class or correspondence) which may be taken to remove entrance deficiencies. Work taken in University Extension must be performed by achieving a standard satisfactory to the Board of Admissions, and the program of studies of the student must be approved by the Director of Admissions.

(2) By courses in the College of Agriculture of the University of California, at Davis (for applicants for admission to the College of Agriculture). Entrance deficiencies may be removed by an appropriate program made up of two-year curricula or degree courses, or by a program combining both types of work. Advice about this work should be sought from the Recorder, College of Agriculture, Davis, or from the Director of Admissions, University of California, Berkeley or Los Angeles.

(3) By courses in other four-year colleges completed with satisfactory grades, subject to the approval of the Director of Admissions. The requirements for admission in advanced standing must also be satisfied (see pages 28-29).

(4) By courses in junior colleges or State colleges completed with satisfactory grades and in proper amount. In addition, all requirements for admission to the University in advanced standing must be satisfied. The high school record of an applicant for admission with advanced standing from another collegiate institution will be considered on the same basis as the high school record of a student applying for admission to freshman standing in the University, provided his college record is satisfactory. Students who make up deficiencies in this way must continue in junior college or State college long enough to make up entrance deficiencies and, in addition, complete at least 15 units with a C plus average (1.5) or remain until completing 60 units with a C average (1.0). Students who completed the requirements in any one of the ways described on page 25 will qualify for admission, provided they have at least a C average in all college work presented for advanced standing.

(5) By junior college noncertificate courses representing work of nonuniversity level taken after high school graduation. The scholarship standards for these courses are the same as those required for work taken in the high school.

Work that is clearly repetition may be offered to make up a subject deficiency, but not a deficiency in scholarship, such work being awarded not higher than a C grade; other work must be completed with A or B grades in order to make up scholarship deficiencies. Students following this plan must continue in junior college long enough to make up entrance deficiencies and, in addition, complete certificate work of at least 15 units with a C plus average (1.5), or 60 units with a C average (1.0).

(6) By postgraduate courses in accredited high schools.

(7) By College Entrance Board achievement and attainment tests.

Information Primarily for High School Principals and Faculty Advisers

Accrediting of schools in California. An accredited high school is one that has been officially recognized by the University as fulfilling the regulations laid down by the Regents of the University for the accrediting of secondary schools in California. The list of accredited schools is published by the University annually in the month of June or July. For blank forms of application for accrediting and for other information, school principals may communicate with the Director of Relations with Schools, Los Angeles or Berkeley.

Responsibility of high school authorities. The responsibility for the granting of certificates to high school students lies with the high school authorities, and students naturally will be guided by their respective principals in making their preparation for entrance to the University.

Upon the high school authorities rests also the responsibility for determining the scope and content of courses preparatory to admission to the University and for certifying the course to the University under the proper subject designation of the high school program.

Preparation for University Curricula

In addition to the subjects required for admission to the University, as outlined on page 24 certain preparatory subjects are recommended for each University curriculum which, if included in the high school program, will give the student a more adequate background for his chosen field of study.

Attention is directed especially to the fact that physics and chemistry are recommended in the preparation for the various curricula in the College of Letters and Science. This recommendation is made not only because of the value of each or both of these subjects as preparation for the courses of a particular curriculum, but also because completion of these subjects in the high school may meet a part of the requirements of the lower division of the College (see pages 60-63) and thereby give the student greater opportunity in his freshman and sophomore years at the University to choose elective subjects. However, it should be understood that neither chemistry nor physics is required for admission to the University.

Especial care should be exercised by the high school student in selecting a

foreign language. The study of a foreign language is important not only because of its value in a broad cultural preparation but also because a reading knowledge of foreign languages may be very useful in the pursuit of advanced work in many departments of the University. For departmental requirements and recommendations see later pages of this catalogue.

The high school student who plans to enter the University of California, but who at the outset of his high school course is uncertain concerning which of the several University curricula he may wish to follow, should provide himself with a wide range of opportunities by completing in high school a program of studies somewhat as follows: history, 1-4 units; English, 3-4 units; algebra, 1-2 units; geometry, 1-1½ units; trigonometry, ½ unit; language, 2-4 units; science, including chemistry, 1 unit; mechanical drawing, 1 unit; special subjects, 1-4 units; a total of 16 units chosen from those listed above. Otherwise he may find graduation delayed, due to lack of proper matriculation prerequisites in required courses in the various colleges.

The student is cautioned with respect to the choice of electives that vocational or activities courses in the high school are not regarded as acceptable substitutes for basic academic studies in the preparation for University curricula. Unless this caution is observed, the student, even though he has been admitted to the University, may find that he is not equipped to do all the work necessary for the bachelor's degree in the normal four-year period.

Admission in Advanced Standing

An applicant for admission in advanced standing must present evidence that he has satisfied the subject and scholarship requirements prescribed for the admission of high school graduates in freshman standing, as described on page 24 (see also under Additional Ways of Gaining Admission, page 25), and that his advanced work in institutions of college standing has met the scholarship standard required of transferring students; namely, an average of grade C or higher in all work of college level undertaken.

An applicant may not disregard his college record and apply for entrance in freshman standing; he is subject without exception to the regulations governing admission in advanced standing. He should ask the registrars of all preparatory schools and colleges he has attended to forward complete official transcripts directly to the Director of Admissions. A statement of honorable dismissal from the last college attended must also be sent.

An applicant from a junior college or State college in California, who upon graduation from high school did not qualify for admission in freshman standing, must submit evidence that he has made up all entrance deficiencies and, in addition, has completed:

(a) Not less than 60 semester units of work acceptable for advanced standing in the college of the University to which admission is sought, with a scholarship average of at least grade C, or

(b) Not less than 15 semester units of acceptable advanced work with a distinctly high scholarship average.

The student should note that credit toward a degree in the University of California for an extension course or courses completed in another institution will be allowed only upon the satisfactory passing at this University of an examination in the course or courses so offered, unless the other institution maintains a classification of extension courses similar to that established by the University of California.

Transfer to the University of California, Los Angeles. It is of special importance that a student in another institution who desires to transfer to the University of California, Los Angeles, after the stated registration day of the semester should communicate in advance with the Office of Admissions, and should await assurance that late admission will be permitted before discontinuing studies in progress elsewhere. The applicant should state specifically the college in the University to which he wishes admission, and the amount of advanced credit which he expects to offer at the time of transfer.

Subject A: English composition. Credit for Subject A (English Composition) is given upon certificate to those students who enter the University with credentials showing the completion elsewhere of the required training in composition. Of all other students, an examination by this University, at Los Angeles or at other centers of instruction, is required (see further statement, page 36).

Surplus matriculation credit. There is no provision for advanced standing in the University on the basis of surplus high school credit.

Teaching experience. No University credit is given for teaching experience. Students presenting evidence of successful teaching experience may substitute approved courses in education for part or all of the regular requirements in supervised teaching upon the recommendation of the Director of Training.

Removal of Scholarship Deficiencies by Applicants from Other Colleges

Applicants otherwise eligible who seek to transfer from other institutions of collegiate rank but whose college records fail to show a satisfactory scholarship average may be admitted only when the deficiency has been removed by additional work completed with grades sufficiently high to offset the shortage in grade points. This may be accomplished by work in University Extension, or in other approved higher institutions.

ADMISSION OF SPECIAL STUDENTS

Special students are students of mature years who have not had the opportunity to complete a satisfactory high school program, but who, by reason of special attainments, may be prepared to undertake certain courses in the University. The conditions for the admission of each applicant under this

classification are assigned by the Director of Admissions. Ordinarily, a personal interview is required before final action can be taken. In general, special students are required to confine their attention to some special study and its related branches.

Transcripts of record from all schools attended beyond the eighth grade must be submitted. An applicant for special status may be required to take an aptitude test and the Examination in Subject A. The Director of Admissions will supply, upon request, the forms of application for admission and for transcripts of high school record.

No person under the age of 21 years* will be admitted as a special student, but the mere attainment of any given age is not in itself a qualification for admission.

An applicant will not be admitted directly from high school to the status of special students. Graduates of high schools are expected to qualify for admission in accordance with the usual rules; students so admitted, if not candidates for degrees, may, with the approval of the proper study-list officer, pursue elective or limited programs.

The University has no "special courses"; all courses are organized for regular students—that is, for students who have had the equivalent of a good high school education and have been fully matriculated. A special student may be admitted to those regular courses for which, in the judgment of the instructor, he has satisfactory preparation. *A special student will seldom be able to undertake the work of the engineering and professional colleges or schools until he has completed the prerequisite subjects.*

A special student may at any time attain the status of regular student by satisfying all the matriculation requirements for admission to the University.

Instruction is not offered in such essential preparatory subjects as elementary English, United States history, elementary physics, nor, except in University Extension, in elementary algebra, plane geometry, or elementary chemistry.

Students more than 24 years of age at the time of admission are excused from military science and physical education.

ADMISSION OF RETURNING MEMBERS OF ARMED FORCES

Returning service men and women will be welcomed to all sessions of the University; those who are ineligible for admission to *regular status* will be given every consideration and will be admitted to *special status* if they present evidence of ability to do successfully the courses of the college in which they wish to register; others will be given programs of work in University Extension or in junior colleges designed to prepare them for University work. On each campus of the University a staff member has been designated as Coördinator

* This minimum age requirement may be waived in the case of men and women having records of service with the armed forces of the United States who desire to enter the University as special students.

of Veterans' Affairs. His function is to work out with the veteran all the many educational irregularities which inevitably arise as a result of the interruption of his educational plans by war service, to assist him in determining his financial needs, and to maintain in his behalf liaison with the Veterans' Administration.

ADMISSION FROM SCHOOLS AND COLLEGES IN FOREIGN COUNTRIES

The credentials of an applicant for admission from a foreign country, either in undergraduate or graduate standing, are evaluated in accordance with the general regulations governing admission. An application and official certificates and detailed transcripts of record should be submitted to the Director of Admissions several months in advance of the opening of the semester in which the applicant hopes to gain admittance. This will allow time for exchange of necessary correspondence relative to entrance and, if the applicant is admitted, be of assistance to him in obtaining the necessary passport visa.

An applicant from a foreign country whose education has been conducted in a language other than English may be admitted only after demonstrating that his command of English is sufficient to permit him to profit by instruction in this University. The applicant's knowledge of English is tested by an oral and written examination; this regulation applies to both graduates and undergraduate foreign students. The admission of an applicant who fails to pass this examination will be deferred until such time as he has acquired the required proficiency in the use of English.

Language credit for a foreign student. College credit for the mother tongue of a foreigner and for its literature is given only for courses taken in native institutions of college level, or for upper division or graduate courses actually taken in the University of California, or in another English-speaking institution of approved standing.

ADMISSION IN GRADUATE STANDING

As indicated on page 23, graduate students may be admitted as regular graduates or as unclassified graduates.

Applications for admission to regular graduate status will be received from graduates of recognized colleges and universities who propose to work for the degrees of Master of Arts or Master of Science, for the degree of Doctor of Education, or for the degree of Doctor of Philosophy in the fields of chemistry, economics, engineering, English, geology, Germanic languages, history, mathematics, meteorology, microbiology, oceanography, philosophy, physical-biological science, physics, plant science (including botanical science and horticultural science), political science, psychology, Romance languages and literature, and zoölogy, or for the certificates of completion leading to the general secondary or junior college teaching credentials. Completed applications with supporting documents must be in the hands of the Registrar not

later than August 16, 1946, for the fall semester, and not later than January 17, 1947, for the spring semester. Corresponding days will be set for subsequent semesters.

The basis of admission to regular graduate status is the promise of success in the work to be undertaken, evidenced largely by the previous college record. In general the minimum requirement is an undergraduate scholarship record equivalent to a 1.5 grade-point average (half way between grades of C and B) at the University of California, Los Angeles, in all courses taken in the junior and senior years and in all junior and senior courses in the applicant's proposed major. Notification of acceptance or rejection is sent to each applicant as soon as possible after the receipt of his application. *Applicants are warned not to make definite arrangements for attending the University on the assumption that they will be accepted for admission, until they have received notification of acceptance.*

Unclassified graduate status is open to students holding degrees from recognized institutions. An unclassified graduate student is in general admitted to any undergraduate course for which he has the necessary prerequisites; he may not enroll in any graduate course, nor is any assurance implied that he will later be admitted to regular graduate status. In the event of such admission the grade-point requirements for degrees and credentials will apply to all work done in unclassified graduate status; degree credit may be allowed for such work upon the special recommendation of the department of the candidate's field of study, subject to approval by the Dean of the Graduate Division.

Applications to either status are to be made upon the forms provided for the purpose by the Dean of the Graduate Division, and must be accompanied by the application fee (see below); transcripts of previous work must be submitted in accordance with the instructions on the application form.

An application fee of \$5† is required of every student applying for admission to graduate status, even though he may have been in previous attendance at the University in other than graduate status.

† Veterans who expect to enroll under the provisions of Public Law 346 (G. I. Bill of Rights), or Public Law 16, are not required to remit this fee with their applications.

GENERAL REGULATIONS

CERTAIN GENERAL REGULATIONS govern residence and study in the academic departments. These regulations, unless otherwise stated, concern both graduate and undergraduate students.

REGISTRATION

Each student registers in person in the University of California, Los Angeles, on days appointed for this purpose, at the beginning of each semester. Registration covers the following steps: (1) filling out address card, paying fees, and receiving in exchange a card showing that the applicant has been enrolled in the University; (2) enrolling in courses according to instructions which will be posted on the University bulletin boards.

Admission and Registration

The student or prospective student should consult the University calendar and acquaint himself with the dates upon which students should register and begin their work at the opening of the sessions.

Prospective students are warned of the necessity of making early application in order that their credentials may be processed in time to permit registration within the scheduled period. New students should file applications for admission not later than August 16 for the fall semester and not later than January 17 for the spring semester. Students planning to return after an absence should file applications for readmission not later than September 6 for the fall semester and not later than February 7 for the spring semester.

The University cannot guarantee acceptance of applications even if filed prior to the above dates, should it become apparent that the prospective number of enrollments has reached the instructional capacity of the institution.

MEDICAL AND PHYSICAL EXAMINATION

All new students (graduate and undergraduate) must appear before the University Medical Examiners and pass a medical and physical examination to the end that the health of the University community, as well as the individual student, may be safeguarded. Evidence, satisfactory to the University Physicians, of successful immunization against smallpox is required.

Before coming to the University, every student is urged to have his own physician examine him for fitness to carry on University work, and to have all

defects capable of remedial treatment, such as diseased tonsils, dental cavities, imperfect hearing, or imperfect eyesight, corrected. This will prevent possible loss of time from studies.

All reëntrant students are requested to report to the Health Service, Library Building, Room 1, for clearance of health record.

STUDENT HEALTH SERVICE

The purpose of the Student Health Service is to conserve the time of students for their classwork and studies, by preventing and treating acute illnesses.

Each registered student at Los Angeles may, at need, have such consultations and medical care or dispensary treatment on the campus as the Student Health Service is staffed and equipped to provide, from the time of payment of his registration fee to the last day of the current semester.

The Health Service does not take responsibility for certain chronic physical defects or illnesses present at the time of entrance to the University (as, for example, hernias, chronic bone and joint diseases or deformities, chronic gastrointestinal disorders, fibroids of the uterus, chronically infected tonsils, tuberculosis, syphilis, malignant diseases, psychiatric problems, allergic and endocrine disorders, etc.).

MILITARY SCIENCE, NAVAL SCIENCE, AND PHYSICAL EDUCATION

Upon admission, every undergraduate student in the lower division, man or woman, must, unless officially notified of exemption, report immediately to the proper officer for enrollment in physical education,* in accordance with the directions in the *Registration Circular* or the announcements which may be posted on the bulletin boards. Every able-bodied male undergraduate in the lower division, who is under twenty-four years of age, at the time of admission and who is a citizen of the United States, unless officially notified of exemption, must report immediately for enrollment in military or naval science. The student must list the courses in military or naval science and physical education upon his study card with other University courses. Upon petition a student more than twenty-four years of age at the time of admission will be excused from military science and physical education.

Information concerning the requirements in military science and physical education, including a statement of the grounds upon which a student may be excused from this work, may be obtained from the Registrar.

Petitions from students for excuse from, or deferment of, military science or physical education, filed by the petitioner after the expiration of two weeks following the date of the student's registration, will not be received except for illness or physical disability occurring after such date. A student who

* The University requirements in physical education referred to in this section cover Physical Education 1 (men) and 26 (women), 1 unit courses which are required of students in each semester of the first and second years.

petitions to be excused from one of these subjects should nevertheless present himself to the proper instructors for enrollment while action on his petition is pending.

If a student subject to these requirements lists the prescribed course or courses on his study list, and thereafter without authority fails to appear for work in such course or courses, his neglect will be reported, after a reasonable time to the Registrar, who, with the approval of the President, will notify the student that he is dismissed from the University. The Registrar will then inform the dean of the student's college or other officer in charge of the student's program of his dismissal. Upon the recommendation of the professor in charge of the work and with the approval of the President, the Registrar is authorized to reinstate the student and will notify the dean of the student's college (or other officer in charge of the student's study list) of such reinstatement.

The student is referred to the announcements of the departments of Military Science and Tactics and Physical Education.

Naval Reserve Officers' Training Corps

By action of the Secretary of the Navy and of The Regents of the University, in June, 1938, provision was made for the establishment of a unit of the Naval Reserve Officers' Training Corps on the Los Angeles campus of the University.

The primary object of the Naval Reserve Officers' Training Corps is to provide at civil institutions systematic instruction and training which will qualify selected students of such institutions for appointment as officers in the Naval Reserve. The Naval Reserve Officers' Training Corps is expected to train junior officers for the Naval Reserve and thus assist in meeting a demand for increased commissioned personnel in time of war or national emergency.

The courses in navigation, seamanship, communications, naval history, ordnance and gunnery, naval aviation, military law, naval administration, and mechanical and electrical engineering are those prescribed by the Navy Department for the Naval Reserve Officers' Training Corps.

Gymnasiums and Athletic Facilities

Separate gymnasiums for men and women were completed in the summer of 1932; each has an open-air swimming pool. The building for men is 200 by 260 feet and has a gymnasium floor 100 by 150 feet; one wing of the building houses the headquarters of the departments of military science and tactics and of naval science and tactics. The building for women is of equal size and contains two gymnasium floors, of which the larger is 72 by 100 feet. These buildings are conveniently situated near the athletic grounds and tennis courts.

Lockers

Lockers are issued, as long as they are available, to registered students who have purchased standard locks. These are sold at \$1 each, and may be used as long as desired, or may be transferred by the purchaser to another student.

SUBJECT A: ENGLISH COMPOSITION

With the exceptions noted below, every undergraduate entrant must, at the time of his first registration in the University, take an examination, known as the *Examination in Subject A*, designed to test his ability to write English without gross errors in spelling, grammar, sentence structure, or punctuation.

The examination in Subject A is given at the opening of each semester. (See the *Registration Circular*, to be obtained from the Registrar). A second examination for late entrants is given two weeks after the first examination in each semester; for this examination a fee of \$1 is charged.

The results of the first examination will be made known not later than the day preceding the date set for the filing of the study lists for the current semester. Papers submitted in the examination are rated as either "passed" or "not passed." A student who is not present at the examination in Subject A which he is required to take will be treated as one who has failed.

Every student who does not pass in the examination in Subject A must, immediately after his failure, enroll in a course of instruction, three hours weekly for one semester, known as the *Course in Subject A*, without unit credit toward graduation. Should any student fail in the course in Subject A he will be required to repeat the course in the next succeeding semester of his residence in the University.

A student who maintains in the course in Subject A a grade of A is permitted, on recommendation of the Committee on Subject A, to withdraw from the course at a date determined by that committee, and is given credit for Subject A.

Every student who is required to take the course in Subject A is charged a fee of \$10, and the charge will be repeated each time he takes the course. This fee must be paid before the study list is filed.

No student will be granted the degree of Associate in Arts or a bachelor's degree until he has satisfied the requirement of Subject A.

In respect to grading, conditions, and failure, the course in Subject A is governed by the same rules as other University courses.

A student who has received a satisfactory rating in the College Entrance Examination Board examination in English 1, in English 1-2, or in the Comprehensive Examination in English, will receive credit for Subject A. A student who has passed an examination in Subject A given by the University at Berkeley or given under the jurisdiction of the University at various centers in the State annually in May or June will receive credit for Subject A.

A student who, at any time, has failed in the University examination in Subject A does not have the privilege of taking a second examination until he has completed the course in Subject A.

A student who enters the University of California, Los Angeles, with credentials showing the completion elsewhere with a grade not lower than C, of one

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or more college courses in English composition (with or without unit credit) is exempt from the requirement in Subject A.

Passing the examination in English for Foreign Students does not exempt a student from the Subject A requirement.

AMERICAN HISTORY AND INSTITUTIONS

A knowledge of the provisions and principles of the Constitution of the United States and of American history, including American institutions and ideals, is required of all candidates for a bachelor's degree, a general teaching credential, or a certificate in public health nursing. This requirement must be met by all candidates for the bachelor's degree who will complete the requirements for their graduation in June, 1947, or later. The requirement may be satisfied in one of the following ways:

- (1) By passing an examination prepared and administered by the Committee on American Institutions;
- (2) By completing in the University at least 4 units of work selected from the following courses:
Political Science 3A, 113, 157A, 157B, XL3A; History 7A, 7B, 172, 173, 174, 179, 181, XL7A, XL7B, XL172, XL173, XL174, XL181; American Institutions 101, XL101.
(Some of the above courses are offered on a reduced unit basis during the Summer Sessions.)
- (3) By presentation of a certificate of completion of an appropriate course and examination at another collegiate institution.
(Courses equivalent to those listed under (2) above are acceptable in satisfaction of the requirement for a teaching credential only if taken at another collegiate institution in California.)

The examination mentioned under (1) above is given in each regular semester of the University, under the control of the Committee on American Institutions. If a candidate has successfully passed a course dealing with one portion of the requirement, he need not take the corresponding portion of the optional examination. Passing the optional examination will not entitle the candidate to receive unit credit. The representative of the Committee may be consulted in connection with the requirement and the optional examination at 332 Royce Hall on Wednesdays at 10:00 A.M. Students should also consult official announcements by the Committee concerning the time and place of examinations.

STUDY-LIST REGULATIONS

At the beginning of each semester every student is required to file with the Registrar, upon a date to be fixed by the Registrar, a registration book containing, in addition to other forms, a detailed study list bearing the approval of a faculty adviser or other specified authority. Such approval is required for all students: undergraduate, graduate, and special.

The presentation of a study list by a student and its acceptance by the college is evidence of an obligation on the part of the student to perform faithfully the designated work to the best of his ability. Withdrawal from, or neglect of, any course entered on the study list, or a change in program without the formal permission of the dean of the college, makes the student liable to enforced withdrawal from the University, or to other appropriate disciplinary action.

Ample provision is made for the student who desires to withdraw from courses in which he is regularly enrolled. Petition for change in study list should be presented to the Registrar. Attendance upon all exercises is obligatory pending receipt of formal permission to discontinue.

STUDENT RESPONSIBILITY

Each student is responsible for compliance with the regulations printed in this bulletin and with official notices published in the *Daily Bruin*, or posted on official bulletin boards.

Application for leave to be absent, or excuse for having been absent from a University exercise, should be made to the instructor; if for unavoidable cause the student absents himself from all college exercises for one day or several days he should present his excuse to the dean of his college. Excuse to be absent does not relieve the student from completing all the work in each course to the satisfaction of the instructor in charge. For regulations concerning withdrawals from the University, see page 46 of this bulletin.

It is the duty of the student to inform the Registrar of changes of address.

AUTHORITY OF INSTRUCTORS

No student will be permitted to enter upon the study of any subject if, in the opinion of the instructor, he lacks the necessary preparation to insure competent work in the subject.

Every student is required to attend all his class exercises and to satisfy the instructor in each of his courses of study, in such ways as the instructor may determine, that he is performing the work of the courses in a systematic manner.

Any instructor, with the approval of the President, may at any time exclude from his course any student guilty of unbecoming conduct toward the instructor or any member of the class, or any student who, in his judgment, has neglected the work of the course. A student thus excluded will be recorded as having failed in the course of study from which he is excluded, unless the faculty otherwise determines.

DEGREES AND TEACHING CREDENTIALS

Detailed statements of requirements for the degree of Associate in Arts and for bachelor's degrees issued by the University will be found in this bulletin under headings of the several colleges and departments; for the master's de-

degrees and the doctor's degrees, see the ANNOUNCEMENT OF THE GRADUATE DIVISION, SOUTHERN SECTION. The requirements for certificates of completion leading to teaching credentials are to be found in the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION, LOS ANGELES.

Every undergraduate candidate for a degree or for the completion of a regular University curriculum leading to a teaching credential should fill out a form in his registration book, indicating his candidacy. The Registrar will then consult with the appropriate dean, and will advise the student whether or not the program he is undertaking will satisfy the requirements of his curriculum.

Degree residence. Every candidate for a bachelor's degree is required to have been enrolled in that college of the University in which the degree is to be taken during his two final semesters of residence; the last 24 units must be done while so enrolled. It is permissible to offer a total of twelve weeks of summer sessions, or postsessions attended in previous years as equivalent to one semester; but the student must complete in resident instruction at least one regular semester of his senior year. The regulation applies both to students entering this University from another institution and to students transferring from one college to another within the University.

Candidates for the degree of Associate in Arts must have been registered in the University for the two final semesters of residence, and in the college in which the degree is taken for the final semester.

All graduates receiving bachelor's degrees in any one calendar year—January 1 to December 31—are considered as belonging to the "class" of that year.

CHANGE OF COLLEGE OR MAJOR

A student may be transferred from one college (major or department) of the University to another upon the approval of the dean or other responsible officer or committee of the college (or department) to which admission is sought. A form of petition for transfer is supplied by the Registrar.

No student is permitted to transfer from one major department to another after the opening of the last semester of his senior year.

HONORS

Honor students include those who receive honorable mention with the degree of Associate in Arts in the College of Letters and Science, in the College of Applied Arts, in the College of Business Administration, or upon attaining junior standing in the College of Agriculture. Honors are granted also with the bachelor's degrees. For regulations concerning honors see the sections explanatory of the curricula of the various colleges in later pages of this bulletin.

CREDIT AND SCHOLARSHIP

In both the University and the high school the student is credited, in respect to the amount of work accomplished, in terms of units; and in respect to quality

of scholarship, in terms of grades. In a further, more exact determination of the student's scholarship, the University assigns a numerical value in points to each scholarship grade. These points are called grade points and are more fully described below.

High school credit, when it is offered in application for admission to the University, is reckoned in matriculation units; one matriculation unit represents one year's work in a given subject in the high school.

High school credit, when it is offered in satisfaction of high school graduation requirements, is measured in standard secondary units; that is, the credit granted for the study of a subject throughout the school year of from thirty-six to forty weeks, is stated in terms of the standard secondary unit. Each unit represents approximately one-quarter of a full year's work in high school; in other words, four standard secondary units represent one full year's work in high school.

Relation between high school matriculation units and University units. One year's work in the high school is considered to be equivalent to one University semester's work of college level; that is, a student who desires to make up any high school subject deficiency by offering work of college level can in one University semester earn credit equivalent to the credit of one year's work in high school.

In the University, a unit of credit represents one hour weekly of the student's time for the duration of one semester in lecture or recitation, with the time necessary for preparation, or a longer time in laboratory or other exercises for which outside preparation is not required. It is expected that most students will spend two hours in preparation for one hour a week of lecture or recitation. Each University unit credit is thus understood to represent at least three hours of the student's time, and the credit value of a course is reckoned in units on that basis.

STUDY-LIST LIMITS*

Concurrent enrollment in resident courses and in extension courses is permitted only when the entire program of the student has received the approval of the proper dean or study-list officer and has been registered with the Registrar before the work is undertaken.

A student on scholastic probation is limited to a program of 12 units each semester, to which may be added the required 1-unit course in physical education.

In the College of Letters and Science or in the College of Applied Arts a student may present a study list aggregating 12 to 16 units each semester without special permission. A student who has a heavy outside work program or who is not in good health is urged to plan, with the dean's approval, a study program below the 12-unit limit. After the first semester a student may on

* The course in Subject A which does not give units of credit toward the degree, nevertheless displaces 2 units from a student's allowable program.

petition carry a program of not more than 20 units, if in the preceding semester he attained an average of at least two grade points for each unit of credit in his total program (of 12 units or more). A student in good academic standing may without special permission add 1 unit of physical education to the allowable study list. With this exception, all courses in military or naval science and physical education and repeated courses are to be counted in study-list totals. Any work undertaken in the University or elsewhere simultaneously with a view to credit toward a degree must also be included.

In the College of Business Administration, a student who is not restricted in his study list and who is not on probation may present a study list aggregating 12 to 18 units a semester without special permission with respect to quantity of work, save that in his first semester of residence the maximum is 16 units plus the required 1-unit course in physical education.

In the College of Agriculture a regular student who is free from deficiencies in the work of the previous semester, and who is in good academic standing may register for not more than 18 units. To this maximum may be added the required physical education course of 1 unit.

Students enrolled in the lower division who are carrying work preparatory to admission to the Curriculum in Optometry, and who are free from deficiencies in the work of the previous semester, may register for not more than 18 units of new work. Students with deficiencies will be limited to 16 units, including repeated work. If students in this curriculum later transfer to nonprofessional curricula in another college, their credits will be reduced in accordance with the limits of that college.

A special student ordinarily will have his study list specified at the time of his admission; it is limited to 16 units.

Regulations concerning study-list limits for graduate students will be found in the ANNOUNCEMENT OF THE GRADUATE DIVISION, SOUTHERN SECTION.

Program Limitation

Undergraduate programs should whenever possible carry not more than three consecutive hours of lecture, recitation, or discussion on any one day, nor should they carry a total of more than five consecutive hours including laboratory, military or naval science, physical education, typing, or field work.

GRADES OF SCHOLARSHIP; GRADE POINTS

In the University, the result of the student's work in each course (graduate and undergraduate) is reported to the Registrar in one of six scholarship grades, four of which are passing, as follows: A, excellent; B, good; C, fair; D, barely passed; E and F, not passed. The designations "passed" and "not passed" may be used in reporting upon the results of certain courses taken by honor students in the College of Letters and Science.

Grade E indicates a record below passing, but one which may be raised to

a passing grade without repetition of the course by passing a further examination or by performing other tasks required by the instructor. Grade F denotes a record so poor that it may be raised to a passing grade only by repeating the course.

The term "incomplete" is not used in reporting the work of students. The instructor is required, for every student, to assign a definite grade based upon the work actually accomplished, irrespective of the circumstances which may have contributed to the results achieved.

Course reports filed by instructors at the end of each semester are final, not provisional.

Effective July 1, 1941, grade points are assigned to the respective scholarship grades as follows: for each unit of credit, the scholarship grade A is assigned 3 points; B, 2 points; C, 1 point; D, E, and F, no points. Removal of grade E or F entitles the student to grade points in accordance with the regulations stated under Removal of Deficiencies, below.

In order to qualify for the degree of Associate in Arts, or for any bachelor's degree at Los Angeles,* the student must have obtained at least as many grade points as there are units in the total credit value of all courses undertaken by him in the University of California.† A similar regulation is in effect in the colleges on the Berkeley campus.

REMOVAL OF DEFICIENCIES

A student who receives grade D, E, or F in a lower division course may, upon repetition of the course, receive the grade assigned by the instructor and grade points appropriate to that grade. The foregoing privilege does not apply to grades received in upper division or graduate courses. A student who receives grade E or F in an upper division or graduate course, may, upon successful repetition of the course, receive unit credit for the number of units passed, but ordinarily will not receive grade points. (For exceptions see below.)

For the purpose of raising grade E to a passing grade the student may, with the consent of the instructor concerned, and of the dean of the appropriate school, college or division, have the privilege of a condition examination. In courses of previous Intersessions and Summer Sessions, however, reexaminations for the removal of deficiencies are not provided by the University.

Students who have received grades B, C, or D in any course are not allowed a reexamination therein, nor are they allowed (except for a lower division course in which grade D has been received) to repeat the course in order to raise the grade.‡

* Candidates for teaching credentials must also maintain a C average in supervised teaching.

† Courses taken by honor students of the College of Letters and Science without letter grades are not counted in determining the grade-point status.

‡ Special provision is made for students whose University work has been interrupted by one year or more of service with the armed forces of the United States and who prior to such service, had undertaken one or more courses forming part of an announced sequence of courses. Such a student may, with the approval of the dean of his college or school (or,

Any examination, term paper, or other exercise which the instructor may require in order for the student to have grade E raised to a passing grade in a course is a "condition examination." For every such examination a formal permit, to be obtained in advance from the Registrar, must be shown to the instructor in charge of the examination; otherwise he will lack authority to consider and report upon the work submitted by the student. For every course in which a special examination is undertaken with a view to raising grade E to a passing grade, a fee of \$2 is charged. The fee for a permit for two or more special examinations of this type is \$3. There is no fee for a reëxamination (final examination taken with the class), if the final examination is the only task required by the instructor from the student for the purpose of raising grade E to a passing grade and if this final examination is taken with the class not later than the close of the next succeeding term of the student's residence in which the course is offered. A form of petition for a special examination or for admission to an examination with the class, with instructions concerning procedure, may be obtained from the Registrar. Grade E received by a student in a course in which a final examination is regularly held can be raised to a passing grade only by passing a satisfactory final examination in the course.

If a student who has received grade E in any course fails to raise it to a passing grade by the end of the next semester of his residence in which the course is regularly given, then the grade shall be changed to F. If in the meantime, however, a student has repeated the course and has again received grade E, his grade in the course will remain grade E, as would be the case if he were taking the course for the first time. A student who fails to attain grade D or a higher grade in any course following a reëxamination for the purpose of raising grade E to a passing grade will be recorded as having received grade F in the course.

A student who raises a grade E or F, incurred in an upper division or graduate course, to a passing grade by successful repetition of the course, and a student who raises a grade E, incurred in any course, lower division, upper division, or graduate, to a passing grade by *examination* or by performing other tasks required by the instructor (short of actual repetition of the course), shall ordinarily receive no grade points. An exception to this rule is permitted, however, when the deficiency consists solely in the omission of the final examination or other required exercise on account of illness or other unavoidable circumstances, the student's performance in all other respects having been satisfactory. In such circumstances the student may petition to have that grade assigned which he would have received had the work been completed without delay, together with the appropriate number of grade points. His petition must set

in the case of graduate students, with the approval of the Dean of the Graduate Division), be permitted to repeat any course previously undertaken in the sequence, irrespective of the grade previously assigned, and to receive the new grade assigned by the instructor and grade points appropriate thereto; provided, however, that for a course so repeated the student may receive unit credit toward graduation, or toward the satisfaction of major requirements, only in an amount not to exceed the difference between the full unit value of the course and the number of units, if any, which he has previously received for the same course.

forth in detail the reasons for his failure to complete the course within the usual limit of time. The Registrar will then refer the petition to the proper authority for a decision.

Any student who is reported as having failed in any prescribed course in military or naval science or physical education, or the course in Subject A, will be required to repeat the course during his next regular semester of residence in which the course may be given.

MINIMUM SCHOLARSHIP REQUIREMENTS

The following regulations apply to all undergraduate students at Los Angeles:

(A) *Probation.* A student shall be placed on probation

(1) If at the close of his first semester his record shows a total deficiency of six or more grade points; or

(2) If at the close of any subsequent semester, his grade-point average is less than 1.0 (a C average), computed on the total of all courses undertaken in this University for which he has received a final report.

(B) *Dismissal.* A student shall be subject to dismissal from the University

(1) If in any semester he fails to pass with a grade of C or higher courses totaling at least 4 units; or

(2) If while on probation his grade-point average for the work undertaken during any semester falls below 1.0 (a C average); or

(3) If after two semesters of probationary status he has not obtained a grade-point average of 1.0 (a C average), computed on the total of all courses undertaken in this University for which he has received a final report.

Students at Los Angeles coming under the above regulations are subject to the supervision of the deans of their respective colleges, who have adopted a policy of limiting study lists of students under their charge to twelve units or less, exclusive of required physical education.

Any student who receives a notice of dismissal from the University may petition the dean of his college for a hearing. Ordinarily, however, a student dismissed for unsatisfactory scholarship will be excluded from the University for an indefinite period, with the presumption that his connection with the University will be ended by such exclusion.

The action to be taken in respect to students in graduate status who acquire scholarship deficiencies is left to the discretion of the Dean of the Graduate Division, Southern Section.

CREDIT BY EXAMINATION

Provision is made whereby an undergraduate student in residence and in good standing may under certain conditions take examinations for degree credit either (a) in courses offered in the University, without formal enrollment in them, or (b) in subjects appropriate to the student's curriculum, but not offered as courses by the University. The results of all such examinations, with grades

and grade points, are entered upon the student's record in the same manner as for regular courses of instruction (see Grades of Scholarship, above). No fees are required.

Arrangements must be made in advance with the dean of the student's college; his approval and that of the instructor who is appointed to give the examination are necessary before an examination can be given.

Application for examination for advanced standing on the basis of work done before entrance to the University should be made to the Admissions Office at the time of entrance to the University. If a student who has already matriculated proposes to enter upon study outside the University of California with a view to asking the University to examine him upon that work and to allow him credit toward the degree, he must make all arrangements *in advance* with the department concerned and with the Director of Admissions. Fees are required for such validation examinations.

The application form for examinations may be obtained from the Registrar.

FINAL EXAMINATIONS

Final examinations are obligatory in all undergraduate courses except laboratory courses and other courses which, in the opinion of the Committee on Courses, because of resemblance to laboratory courses, require special treatment. In laboratory courses final examinations are held at the option of the department in charge. All examinations will, so far as practicable, be conducted in writing, and a maximum time will be assigned beforehand for each examination, which no student will be allowed to exceed. The time for examination sessions may not be more than three hours; normally the maximum time is two hours. Leave to be absent from a final examination must be sought by written petition to the proper faculty.

If a final examination is one of the regular requirements in a course, there can be no individual exemption from the examination, except as provided in the preceding paragraph.

Any department may examine a student, at the end of the semester immediately preceding his graduation, in the major subject in which the department has given instruction; and a student to be examined in a major subject may, at the discretion of the department, be excused from all final examinations in courses in the department of the major subject in which he has been enrolled during the semester. Credit value may be assigned to this general examination in the major subject.

Any student tardy at an examination may be debarred from taking it, unless an excuse for his tardiness, entirely satisfactory to the examiner, is presented. Reexaminations are permitted only for the purpose of raising grade E (not passed) to a passing grade. In courses of previous Summer Sessions, however, reexaminations for the removal of deficiencies are not provided by the University. A student who has received grade B, C, or D in any course is not allowed

a reëxamination for the purpose of raising the grade. Concerning methods of raising non-passing grades to passing grades, see under Removal of Deficiencies, above.

LEAVE OF ABSENCE AND HONORABLE DISMISSAL

A *brief leave of absence*, to expire on a definite date, may be issued to a student in good standing who finds it necessary to withdraw for a short time, but who wishes to retain his status in his classes and to resume his work before the close of the current semester. No excuse for absence will relieve the student from the necessity of completing all the work of each course to the satisfaction of the instructor in charge. Petition forms for leaves of absence, with complete instructions, may be obtained at the office of the Registrar.

A student must apply for leave to be absent from or excuse for having been absent from any college exercise other than a final examination, to the instructor in charge of the exercise; unless, for unavoidable cause, the student is obliged to absent himself from all college exercises for several days, in which event he should apply for a brief leave of absence as directed above. Leave to be absent from a final examination must be sought by written petition to the proper faculty.

An *honorable dismissal* may, upon petition, be issued to any student in good standing provided he complies with the instructions on the form of petition, which may be obtained from the Registrar.

A student is in good standing if he is entitled to enjoy the normal privileges of a student in the status in which he is officially registered. Students dismissed by reason of scholarship deficiencies, and students under supervision or on probation, may receive letters of honorable dismissal which bear a notation concerning their scholarship; students under censure or suspension may not receive an honorable dismissal but may receive transcripts of record which bear a notation concerning such censure or suspension.

Discontinuance without notice. Students who discontinue their work without formal leave of absence do so at the risk of having their registration privileges curtailed or entirely withdrawn.

TRANSCRIPTS OF RECORD

Each student, upon formal application to the Registrar, may receive or may have issued on his behalf, without cost, one transcript showing all work taken by him in this division of the University. Subsequent transcripts will be issued upon application at a cost of fifty cents each.

DISCIPLINE

When a student enters the University it is taken for granted by the University authorities that he has an earnest purpose and that his conduct will bear out this presumption. If, however, he should be guilty of unbecoming behavior or

should neglect his academic duties, the University authorities will take such action as, in their opinion, the particular offense requires. Students who fail to make proper use of the opportunities freely given to them by the University must expect to have their privileges curtailed or withdrawn.

There are five degrees of discipline: warning, censure, suspension, dismissal, and expulsion. Censure indicates that the student is in danger of exclusion from the University. Suspension is exclusion from the University for a definite period. Dismissal is exclusion for an indefinite period, with the presumption that the student's connection with the University will be ended by it. Expulsion is the most severe academic penalty, and is final exclusion of the student from the University.

By authority of the Academic Senate, the President of the University is entrusted with the administration of student discipline with full power to act.

MISCELLANEOUS INFORMATION

EXPENSES—LIVING ACCOMMODATIONS—EMPLOYMENT— SCHOLARSHIPS—LOANS

GENERAL EXPENSES AND FEES*

THE QUESTION OF EXPENSE while attending the University is of importance to every student. It is difficult, however, to give specific information about yearly expenditures. In a student body of several thousand members there are so many different tastes, as well as such a wide range of financial resources, that each student must determine his budget in keeping with his own needs and financial condition. It is possible to live simply, and to participate moderately in the life of the student community, on a modest budget. The best help the University authorities can offer the student in planning his budget is to inform him of certain definite expense items, and acquaint him with others for which he will in all probability have to provide.

A table of estimated minimum, moderate, and liberal budgets for one college year of two semesters is given on page 53.

Fees and deposits are payable preferably in cash. If a check is presented the face amount must not exceed all the fees to be paid.

Incidental fee. The incidental fee for all undergraduate students is \$29. This fee, which must be paid each semester on the date of registration, covers certain expenses of students for library books, for athletic and gymnasium facilities and equipment, for lockers and washrooms, for registration and graduation, and for such consultation, medical advice, and dispensary treatment as can be furnished on the campus by the Student Health Service. It also includes the rights and privileges of membership in the Associated Students, valued at \$4; see page 58. No part of this fee is remitted to those students who may not desire to make use of any or all of these privileges. If a student withdraws from the University within the first four weeks from the date of his registration, a part of this fee will be refunded. The incidental fee for graduate students is \$25 each semester; it does not include membership in the Associated Students.

Students who are classified as nonresidents of the State are required to pay, each semester, in addition to the incidental fee, a tuition fee of \$150.† It is important for each prospective student to note carefully the rules governing legal residence in the University, which are stated on page 51.

* During registration and for the first few days of instruction, fees will be paid as part of the registration procedure. Thereafter, they will be paid in the office of the Business Manager, Administration Building. The cashier's department of this office is open from 8:30 A.M. to 3 P.M. daily, and from 8:30 A.M. to 12 M. on Saturday.

† The amount of the nonresident tuition fee was increased, effective July 1, 1944, but the increase does not apply to students who were in attendance on any campus of the University of California throughout the spring term of 1944 and whose attendance upon subsequent semesters is not interrupted. If a student registers for less than 12 units the tuition fee is \$10 a unit or fraction of a unit, with a minimum of \$20.

Tuition. The University charges a tuition fee to every student who has not been a legal resident of the state of California for a period of one year immediately preceding the opening day of the semester during which he proposes to enroll. Such a student is classified as a nonresident. A student entering the University for the first time should read carefully the rules governing determination of residence, as quoted below, to the end that he may be prepared, in the event of classification as a nonresident of California, to pay the required tuition fee. This fee must be paid at the time of registration. *The attention of the prospective student who has not attained the age of 22 years and whose parents do not live in the state of California, is directed to the fact that presence in the state of California for a period of more than one year immediately preceding the opening day of the semester in which he proposes to attend the University, does not, of itself entitle him to classification as a resident.* An alien who has not made, prior to the opening day of the semester in which he proposes to attend the University, a valid declaration of intention to become a citizen of the United States is classified as a nonresident student.

Tuition in the academic colleges is free to students who have been residents of the state of California for a period of one year immediately preceding the opening of the semester during which they propose to attend the University. Students who are classified as nonresidents are required to pay a tuition fee of \$150* each semester. This fee is in addition to the incidental fee.

If a student is in doubt about his residence status, he may communicate with the Attorney for the Regents in Residence Matters. On the day preceding the opening day of registration and during the first week of instruction of each semester the Attorney may be consulted upon the campus at a place which may be ascertained by inquiry at the Information Desk in the Registrar's Office; throughout the registration period, he may be consulted during the hours of registration at the place where registration is being conducted. At other times he may be consulted or communications may be addressed to him at Room 910, Crocker Building, San Francisco 4, California.

The eligibility of a student to register as a resident of California may be determined only by the Attorney for the Regents in Residence Matters. Every entering student, and every student returning to the University after an absence, is required to make a "Statement as to Residence" on the day of registration, upon a form which will be provided for that purpose, and his status with respect to residence will be determined by the Attorney soon after registration. Old students are advised that application for reclassification as a resident student should be filed within ten days after regular registration; by late registrants, within one week after registration. Application for a change of classification with respect to some preceding semester will not be received under any circumstances.

Laboratory fees. Laboratory charges, apportioned on the basis of materials used and for certain costs involved in the maintenance and operation of labora-

* See footnote on page 48.

tory equipment, differ with the individual student's course, the range of fees in the elementary laboratories being from \$1.50 to \$31 a semester. The fees are stated in the descriptions of the several courses.

Other Fees

Late payment fee. For delayed payment of any of the incidental, nonresident tuition, or departmental fees or deposits, \$1. Departmental fees and deposits must be paid by date set for filing registration book.

Application fee, \$5.† This fee is charged every applicant for admission to the University, and is payable at the time the first application is filed. Applicants for graduate status must pay this fee, even though it may have been paid once in undergraduate status; see page 32.

Medical examination: Original appointment, or deferment arranged in advance, no fee; fee for a second appointment, \$2.

Late filing of registration book, \$1. (More than five days after registration.)

Late examination in Subject A, \$1.

For courses added or dropped after date set for filing registration book, \$1 for each petition.

For reinstatement of lapsed status, \$2.

For duplicate registration card, \$1.

For late application for teaching assignment, \$1.

For late notice of candidacy for the bachelor's degree, \$2.

For late return of athletic supplies, \$1 minimum.*

For failure to empty locker within specified time, \$1.

Returned check collection, \$1.

Deposit required of applicants for teaching positions who register with the Office of Teacher Placement: Persons registering with the Office of Teacher Placement are required to make a deposit of \$5 to cover the clerical cost of correspondence and copying of credentials.

Refunds

Refund of a part of the incidental fee is made to a student who withdraws from the University within four weeks from the date of his registration.

Refund on the nonresident fee is made in accordance with a schedule on file in the offices of the Registrar and Cashier; dates are computed from the first day of instruction of the semester.

No claim for refund of fees will be considered unless such claim is presented during the fiscal year to which the claim is applicable. No student will be entitled to a refund except upon surrender to the Cashier of his registration certificate and receipt. Students should preserve their receipts.

* Supplies or equipment not returned before the close of the fiscal year must be paid for in full; return after that date is not permitted.

† Veterans who expect to enroll under the provisions of Public Law 846 (G. I. Bill of Rights), or Public Law 16, are not required to remit this fee with their applications.

Rules Governing Residence

The term "nonresident student" is construed to mean any person who has not been a bona fide resident of the state of California for more than one year immediately preceding the opening day of a semester during which he proposes to attend the University.

The residence of each student is determined in accordance with the rules for determining residence prescribed by the provisions of Section 244 of the Government Code of California, and Section 20005 of the Education Code of California, provided, however:

1. That every alien student who has not made a valid declaration of intention to become a citizen of the United States, as provided by the laws thereof, prior to the opening day of the semester during which he proposes to attend the University, is deemed to be a nonresident student.

2. That no person is deemed to have made a valid declaration of intention to become a citizen of the United States whose declaration of intention at the time when it is presented in support of an application for classification as a resident student in the University has lost its force or effectiveness, or who cannot, under said declaration, without renewing the same or making a new declaration, pursue his declared intention of becoming a citizen of the United States.

Every person who has been, or who shall hereafter be classified as a nonresident student shall be considered to retain that status until such time as he shall have made application in the form prescribed by the Registrar of the University for reclassification, and shall have been reclassified as a resident student.

Every person who has been classified as a resident student shall, nevertheless, be subject to reclassification as a nonresident student and shall be reclassified as a nonresident student whenever there shall be found to exist circumstances which, if they had existed at the time of his classification as a resident student, would have caused him to be classified as a nonresident student. If any student who has been classified as a resident student should be determined to have been erroneously so classified, he shall be reclassified as a nonresident student, and if the cause of his incorrect classification shall be found to be due to any concealment of facts or untruthful statement made by him at or before the time of his original classification, he shall be required to pay all tuition fees which would have been charged to him except for such erroneous classification, and shall be subject also to such discipline as the President of the University may approve.

The nonresident tuition fee may be remitted in whole or in part in the case of students in regular graduate status [except in the professional schools, e.g., Jurisprudence, Medicine, Education (leading to the Ed.D. degree), and except in the case of foreign students whose tuition is paid by their governments], who have proved that they are distinguished scholars and who are carrying full programs of work toward the fulfillment of requirements for academic higher degrees. No graduate student in regular graduate status, no matter how dis-

tinguished his scholarship may have been, will be exempted from the payment of the tuition fee if he is merely carrying some lower division courses for his cultural advancement.

The term *distinguished scholarship* in connection with the question of exemption from the payment of the tuition fee is interpreted as follows: the scholarship standing must have been excellent throughout a period of no less than two years just preceding the time of application for this privilege. Moreover, only students from institutions of high standing in scholarly work will be considered. Applicants for this privilege will be required to have sent to the Dean of the Graduate Division confidential letters about themselves from persons who are thoroughly acquainted with their personalities and their intellectual achievements. It should be clear from these statements, therefore, that only the decidedly exceptional student will be eligible for the privilege of exemption from the payment of tuition if he is a nonresident. Students exempted from the tuition fee pay only the incidental fee.

The privilege of exemption from the nonresident tuition fee may be revoked at any time at the discretion of the Dean of the Graduate Division if in his judgment a student fails to maintain distinguished scholarship, or if he proves himself unworthy in other respects.

LIVING ACCOMMODATIONS AND GENERAL EXPENSES FOR WOMEN

A list of approved accommodations for women students is prepared for distribution at the beginning of each semester by the Dean of Women and may be obtained at her office, 239 Administration Building. No woman is permitted to complete her registration until her living accommodations have received the approval of the Dean of Women. *Women are not permitted to live in public apartments unless satisfactory arrangements concerning chaperonage are made in advance with the Dean of Women.*

Mira Hershey Hall, made available by the will of the late Miss Mira Hershey, is the only dormitory maintained on the Los Angeles campus. It is conveniently situated on the campus and accommodates 128 women students. Board and room cost \$50 a month. Applications for residence should be filed with the Dean of Women as early as possible.

Four privately owned halls of residence provide board and room at rates which vary from \$50 to \$55 per month per person, depending upon the number of days meals are served and also upon the number of meals served per day. In most cases, student lunches and week-end meals are extra. Five college halls provide rooms and also housekeeping accommodations at rates from \$14 to \$30 per month per person. There are four coöperative halls of residence, in which the usual price for board and room is from \$30 to \$37.50 per month per person. Private homes offer accommodations of all kinds at about the same rates as the halls of residence.

Self-supporting women students usually can get board, lodging, and \$15 to \$20 a month in exchange for three hours of household work daily. They may secure the assistance of the Bureau of Occupations, Room 39 Administration Building, in obtaining employment.

Extracurricular expenses may be kept at a minimum. The expense of participating in general and honorary or professional organizations need not cost more than \$5 a semester. Membership in a social sorority may be estimated at from \$12 to \$33 a month, in addition to the cost of board and lodging.

The student living at home, although she may have no expense for board and lodging, must plan for transportation and lunch on the campus. While transportation varies according to the location of each student's home, \$10 a month is an average estimate. Lunches may be estimated at \$8 to \$16 a month. Some students reduce or eliminate this expense by bringing their lunches from home.

Personal expenses, including clothing, drugs, beauty shop, recreation, etc., vary with the individual.

PRINCIPAL ITEMS OF EXPENSE ESTIMATED ON A TWO-SEMESTER BASIS

Expense Items	Minimum		Moderate		Liberal	
	Men	Women	Men	Women	Men	Women
Incidental Fee.....	\$ 58	\$ 58	\$ 58	\$ 58	\$ 58	\$ 58
Books and Supplies.....	25	25	45	45	65	65
Board and Room..... (or Housekeeping).....	450	500 (240)	550	600 (350)	650	700 (500)
Miscellaneous (Recreation, club dues, laundry, drugs, etc.).....	50	80	75	150	200	250
Total.....	\$ 583	\$ 663	\$ 728	\$ 853	\$ 973	\$1073

NOTE.—It is impossible to include in the above figures such variable items as clothes or transportation to and from home, or fees other than the incidental fee. Students classified as nonresidents of the State must also add to their estimated budgets the tuition fee of \$150 per semester.

LIVING ACCOMMODATIONS AND GENERAL EXPENSES FOR MEN

The cost of attending the University varies greatly with the individual student; however, the majority of men students living away from home spend between \$350 and \$500 a semester. Students classified as nonresidents of California must also pay the tuition fee of \$150 each semester.

The cost of board and room is estimated at from \$50 to \$70 a month. A list of rooming and boarding accommodations for men is prepared by the Dean of Undergraduates, and may be obtained at Room 202, Administration Building.

The University does not maintain on the Los Angeles campus any dormitories for men. Students attending the University and living at home should make an estimate of the cost of transportation and include this item in the year's budget.

The initiation fees for professional fraternities vary from \$5 to \$12, and for social fraternities from \$25 to \$75. The dues for social fraternities average about \$5 a month and the cost of living in a fraternity house averages about \$55 a month. This amount does not include the cost of social affairs which may be given by the fraternity in the course of the year.

There are also coöperative housing units for men in which each student gives several hours a week to the work of the organization, and thereby greatly reduces his cash outlay for room and board. Information concerning fraternities and coöperative units is available at the Office of the Dean of Undergraduates.

SELF-SUPPORT AND STUDENT EMPLOYMENT

Many students earn part, and a few earn all, of their expenses while attending the University. The University authorities are eager to offer as much encouragement as possible to students who must maintain themselves, but long experience has brought out the fact that the self-supporting student, early in his college life, may have to face unforeseen problems which affect his welfare.

University work demands the best that a student can give to it. The following statements are made, therefore, not to discourage the able student who must do outside work, but to forearm him with facts and information so that he may plan carefully and intelligently, and by so doing overcome many of the difficulties that might otherwise lead to disappointment and failure.

(1) Whenever possible, it is wise for a student to use his savings to make the first semester of residence in the University one of freedom to give full time to academic work. He may then have an opportunity to adjust himself to new surroundings, to establish sound habits of study, and to maintain a good scholastic standing, and thereby build a foundation for the rest of his University course. By the end of the first semester the student should know the demands of university life and his own capabilities well enough to make it possible to plan, for subsequent semesters, a combined program of studies and work for self-support.

(2) The regular undergraduate four-year course based on an average of 15 units of academic work a semester is organized on the supposition that students will give the major part of their time and attention to their studies while attending the University. Therefore, a student who must give considerable time and energy to outside work should consider at the outset the possibility that more than the usual eight semesters (four years) may be required to complete the program for the degree, if he is to maintain his scholastic standing and his health, and to enjoy the advantages of university life.

With reasonable diligence, a student in good health carrying an average program of study in the undergraduate departments can give as much as twelve

hours a week to outside employment without seriously interfering with his college work; employment in excess of this amount should be accompanied by a reduction of the academic program carried.

(3) Students who are not physically strong or in good general health should not, under ordinary circumstances, attempt to be wholly self-supporting because of the danger of jeopardizing health and academic progress.

EMPLOYMENT

BUREAU OF GUIDANCE AND PLACEMENT

The Bureau of Guidance and Placement has as its chief function the coordination, under one executive officer, of the various placement activities on the Los Angeles, Berkeley, and Santa Barbara campuses, including those of the Bureaus of Occupations and of the Offices of Teacher Placement.

BUREAU OF OCCUPATIONS

Student Employment

Students desiring employment may register with the Bureau of Occupations, 39 Administration Building.

Since it is not always possible to secure employment immediately, the new student who plans to be self-supporting should not begin his University course without sufficient funds to cover the major expenses of at least the first semester.

Women students may obtain board, room and \$15 to \$20 salary per month in exchange for three hours work daily in a private home. Opportunities of this type for men are limited; however, local boarding houses and restaurants often offer employment for board.

Employment also is available on an hourly basis in the following fields: typing and stenography, bookkeeping, sales and clerical work, care of children, housework, manual labor, tutoring, and other specialized types of work.

Full-Time Placement

Through its full-time placement service, the Bureau of Occupations recommends graduates and students for positions in business and professional fields other than teaching or educational research. This service is available to students when they leave the University or at any later date if they desire an improvement in their employment situation.

OFFICE OF TEACHER PLACEMENT

The Teacher Placement Executive recommends graduates, students, and former students for positions in universities, colleges, junior colleges, high schools, and elementary schools, and for educational research, thereby assisting qualified candidates to obtain permanent employment or promotion in the work for which they have prepared themselves. A fee of \$5 is charged each

candidate for clerical services; there is no expense to school officials seeking teachers through this office. Communications should be addressed to the Teacher Placement Executive, 123 Education Building.

The University reserves the right to refuse its services to candidates who seek positions for which they are not fully qualified. In every recommendation the aim is to keep in mind the best available persons, remembering candidates already employed as well as those who may be out of employment.

Candidates for positions are urged to inform the office of the result of their candidacy, and of their desires for future promotion or change of occupation.

All persons who obtain the services of students through either the Bureau of Occupations or the Office of Teacher Placement are urged to inform the Manager of the Bureau of Guidance and Placement concerning the quality of service given.

UNDERGRADUATE SCHOLARSHIPS

The Committee on Scholarships of the University of California, Los Angeles, recommends annually for award a limited number of scholarships to undergraduate students in the University of California at Los Angeles. Because of the limited number of scholarships available, the Committee must restrict the awards to students who have been in attendance at least one semester (except for the Alumni Freshman Scholarships described below). The Committee rates all candidates with respect to scholarship, need, and character, and bases its recommendations upon relative ratings of all the candidates applying at any one time. Applications for these scholarships with letters and testimonials, should be filed with the Dean of Undergraduates on or before April 15 preceding the academic year for which the awards are to be made; if received later they will not ordinarily be considered until the following year. A blank form of application, which gives all the necessary information, may be obtained from the Dean of Undergraduates.

A limited number of scholarships known as the *LaVerne Noyes Scholarships* are assigned to needy veterans of World War I or their children. Certain scholarships are available for students in the College of Engineering, and others are available for students who are handicapped by obstacles caused by environment or lack of opportunity.

Alumni Freshman Scholarships

The U.C.L.A. Alumni Association makes available each year a certain number of scholarships to entering freshmen. These Alumni Freshman Scholarships constitute a portion of cash awards of varying amounts for freshmen who enroll on any of the University's campuses. Candidates for the Alumni Freshman Scholarships may receive information by writing to the Executive Secretary, U.C.L.A. Alumni Association, 402 Westwood Boulevard, Los Angeles 24. Information concerning similar scholarships available for freshmen who enroll on other campuses of the University may be had by writing the Executive Man-

ager, California Alumni Association, 301 Stephens Union, University of California, Berkeley 4. Applications must be on file on or before February 15 in any one year.

In the selection of the beneficiaries of these awards, the alumni committees in charge will choose applicants not only with substantial scholastic ability but also of high character and outstanding qualities of leadership, who give promise of reflecting credit upon themselves and the University.

GRADUATE SCHOLARSHIPS AND FELLOWSHIPS

For information concerning graduate scholarships, consult the **ANNOUNCEMENT OF THE GRADUATE DIVISION, SOUTHERN SECTION.**

LOANS

Various organizations and individuals have contributed toward the building up of several student loan funds. The gifts for this purpose are administered by the University in accordance with the conditions laid down by the donors, and are sufficient to make small loans, for short periods of time and usually without interest, to students in an emergency; applications should be filed at least ten days in advance. For further information, apply to the Dean of Undergraduates or the Dean of Women.

PRIZES

The generosity of alumni and friends of the University also provides each year for competitive prizes and awards in several fields. These are ordinarily announced at Commencement in June of each year.

PUBLIC LECTURES, CONCERTS, AND ART EXHIBITS

As opportunity offers, the University presents to its members and to the public, lectures of general and of special or scholarly interest by qualified persons. These lectures are intended to supplement and stimulate the work of all departments of the University.

The musical interests of the University are served by the Artists' Concert Series and other specially announced musical events. Each year three young artists are chosen by competitive auditions and are presented as a special feature of the Concert Series. Tuesday Noon Recitals and Friday Noon Organ Recitals are presented weekly throughout the year. The Tuesday Recitals feature the A Cappella Choir, the Madrigal Singers, the Glee Clubs, the University Band, the University Symphony Orchestra, individual student artists, and members of the music faculty. All of these events are open to the public.

The Department of Art schedules a series of exhibitions of painting, design, and craftwork in its exhibition hall. These illustrate the work of students, local artists, national exhibitors, and occasionally of old masters. A series of dance recitals is regularly presented under the auspices of the Department of Physical Education, Women's Division, and the University Dramatic Society.

THE ASSOCIATED STUDENTS

The extracurricular activities are administered and controlled by the Associated Students, in which all undergraduates hold membership by virtue of paying at registration the regular University incidental fee. The organization has an executive council composed of a president, two vice-presidents, two representatives of groups, and the chairmen of five activity boards. The activity boards control the activities in definite fields, such as debating, athletics, dramatics, and publications; the council coördinates the work of these boards and administers the general business of the Association. Offices of the Associated Students are in Kerekhoff Hall, a gift to the University of Mrs. William G. Kerekhoff of Los Angeles.

Members are entitled to participation in the affairs of the Associated Students, to a subscription to the *California Daily Bruin*, to free admission to many athletic contests, and to reduced rates to all other athletic contests, as well as to dramatic, social, and similar events coming under the jurisdiction of the Associated Students.

The U.C.L.A. Students' Store is owned and operated by the Associated Students.

The *California Daily Bruin* and the *Southern Campus* are the official publications of the students. The *California Daily Bruin* contains news of all campus and college activities, official University announcements, and is under direct charge of an editor and a manager appointed by the Council. The *Southern Campus* is the yearbook and contains a record of the college life of the year. It is edited, managed, and financed by the students.

RELIGIOUS FACILITIES

In the immediate vicinity of the campus, at 10845 LeConte Avenue, is the University Religious Center where official representatives of the Jewish, Catholic, Episcopal, Methodist, Presbyterian, Baptist, Congregational, Disciple, Lutheran, Unitarian, and Latter Day Saints denominations, and the Y.M.C.A. have student headquarters. The Y.W.C.A. occupies its own building, at 574 Hilgard Avenue, near the entrance to the campus; in the same building, at 572 Hilgard Avenue, are the reading room and headquarters of the Christian Science organization.

At these centers are held religious discussion groups, lectures, Bible classes, social gatherings, luncheons, dinners, and other student meetings.

REQUIREMENTS IN THE SEVERAL COLLEGES, SCHOOLS, AND CURRICULA

COLLEGE OF LETTERS AND SCIENCE

THE CURRICULA of the College of Letters and Science are designed to provide opportunities and facilities for broadening the basis of culture, preparing a student for specialized professional studies, and developing intelligence. These curricula lead to the degree of Associate in Arts, normally at the end of the fourth semester, and to either the degree of Bachelor of Arts or Bachelor of Science, normally at the end of the eighth semester. At the present time the degree of Bachelor of Science is offered only in Chemistry and Applied Physics.

Breadth of culture can be attained only through familiarity with the best that has been thought and known in the arts and sciences. To this end the student is required to select courses in the general fundamentals of human knowledge, which are available in the lower division. In the more diverse and abundant offering of the upper division the student is relatively free to continue his liberal education along lines which appear best suited to his aptitudes, needs, and purposes.

Each student in the upper division pursues a special course of study which may be a program of related courses within a single department (departmental major), or a group of coordinated courses involving a number of departments (organized curriculum), or a liberalized curriculum of courses chosen from not more than three departments (general major). The pursuit of such special courses of study necessarily requires a knowledge of antecedent courses known as "prerequisites." With the assistance of his counselor, the student is expected to select those lower division courses which are definitely related to his proposed advanced study. Through such guidance and selection, continuity in a chosen field of learning is assured.

The College is vitally interested in the University's broad purposes of developing qualities of leadership, initiative, responsibility, and self-discipline. For this reason, considerable freedom of choice is permitted through a system of electives, that is, of courses not directly related either to the student's major subject or to the basic requirements of the curriculum of the College. A liberal education presupposes a reasonably wide distribution of courses which contribute to a desirable balance of intellectual interest and activity.

With a view to realizing the cultural objectives outlined above, each student in his freshman and sophomore years is required to consult an educational counselor, and during his junior and senior years is required to confer with an official adviser in his major department, or in the general major.

CHANGES IN REQUIREMENTS

Revised requirements for the degree of Associate in Arts and for the degrees of Bachelor of Arts and Bachelor of Science are being formulated and will be announced at an early date.

Lower Division*Requirements for the Associate in Arts Degree
or Upper Division Standing*

The work of the lower division comprises the studies of the freshman and sophomore years. The degree of Associate in Arts or upper division standing in the College of Letters and Science is required for admission to the upper division. Lower division students are not admitted to upper division courses.

In order to be admitted to the upper division of the College of Letters and Science, students must have completed at least 60 units of college work with a grade-point average in all work done in the University of not less than 1.0 (a C average), and must have satisfied requirements (A) to (E) below.

The degree of Associate in Arts is granted to students who:

- (1) Have earned not less than 60 nor more than 90 units which may be counted toward the bachelor's degree;
- (2) Have completed requirements (A) to (E) below;
- (3) Have spent at least the two final semesters (24 units of lower division work) in residence at the University and at least the final semester in the College of Letters and Science; and who
- (4) Have a grade-point average in all work done in the University of not less than 1.0 (a C average).

Students who do not complete all requirements for the degree of Associate in Arts by the time they have acquired 90 units will proceed toward the bachelor's degree without the degree of Associate in Arts, but must nevertheless complete all remaining lower division requirements before graduation.

A student who transfers from another college of this University or from another institution must meet the lower division requirements; but, if credit of 60 or more units is allowed him, he is given upper division standing and may meet subject shortages concurrently with upper division requirements.

Certain courses taken in the high school are acceptable as fulfilling in part or in whole some of the lower division requirements. The student should so arrange his high school program as to reduce the required work in the fields of foreign language, mathematics, and natural science. However, the fulfillment of lower division requirements in the high school does not reduce the number of units required in the University for the degrees of Associate in Arts (60) and Bachelor of Arts or Bachelor of Science (120).

The requirement of 120 units for the bachelor's degree is based on the assumption that the student will normally take 15 units of work each semester, including the prescribed work in military science and physical education. The following general and specific requirements must be completed.

(A) *General University requirements.*†

Subject A.‡

Military Science and Tactics, 12 units, or Naval Science and Tactics, 12 units (men).

Physical Education, 4 units.

(B) *Foreign Language.*—At least 16 units in not more than two languages.

(1) The first two years of high school work in a foreign language will together be counted in satisfaction of four units of this requirement; the third and fourth years in the same language will be counted in satisfaction of four units each. Only work of grade C or higher may be counted.§

(2) If a new language is begun on the college level it may not apply on this requirement unless course 2, or the equivalent, with its prerequisites is completed.

(3) This requirement may also be satisfied by passing a proficiency examination in one language.

(4) Courses given in English by a foreign language department will not be accepted in fulfillment of this requirement.

(5) College credit for the mother tongue of a foreigner and for its literature is allowed only for courses taken in native institutions of college grade, or for upper division and graduate courses actually taken at the University of California or at another English-speaking institution of approved standing.

(C) *Matriculation Mathematics.* Elementary algebra and plane geometry. If these subjects were not completed in the high school, they may be taken in the University of California Extension, but will not be counted as a part of the 60 units. Plane geometry is normally offered also in the summer session.

(D) *Natural Science.* At least 12 units chosen from the following list, of which not less than one unit shall be in laboratory work. Courses marked with an asterisk meet the laboratory requirement. Three units of mathematics|| not

† For information concerning exemption from these requirements apply to the Registrar.

‡ An examination in Subject A (English Composition) is required of all entrants at the time of their first registration in the University. For further regulations concerning Subject A, see page 86.

§ Any student who because of lapse of time or other circumstance feels unable to continue successfully a language begun in high school may consult the department of the language concerned regarding the advisability of repeating all or a part of the work. Under certain circumstances, college credit can be allowed for repeated work. Such credit would count on the 60 units required for upper division standing and on the 120 units required for the bachelor's degree; but credit is not allowed toward the required 16 units in foreign language for both the high school and college work thus duplicated.

|| Any lower division mathematics course except D, E, and 18 is acceptable on this requirement.

offered in satisfaction of requirement (E), or Astronomy 4 or 12, may be substituted for three units of this requirement. Three units of the requirement may be satisfied by any eleventh- or twelfth-year laboratory science taken in high school with grade of at least C.

High school science (eleventh- or twelfth-year laboratory course.*

Anthropology 1A.†

Astronomy 1, 2*, 7.

Bacteriology 1*, 6.

Biology 1, 12.

Botany 1A*, 1B*.

Chemistry 1A*, 1B*, 2A*, 2B*, 6A*, 6B*, 8.

Entomology 1*.

Geography 1A†, 3, 5A.†

Geology 2, 2L*, 3, 5*.

Meteorology 3.

Physics 1A*, 1B*, 1C*, 1D*, 2A*, 2B*, 10A, 10B, 21*.

Zoölogy 1A*, 1B*, 2A*, 13*, 14*, 15*, 16*, 18, 35*.

(E) *Three Year-Courses.* A year-course chosen from *three* of the following seven groups. At least one course must be chosen from group 1, 2, or 3. Only the courses specified below are acceptable.

1. English, Public Speaking:

English 1A-1B, 36A-36B.

Public Speaking 1A-1B, 2A-2B.

2. Foreign Language. Courses offered in satisfaction of this requirement may not include any of the work offered as part of the 16-unit requirement in language under requirement (B) above. No high school work may be counted on this requirement.

French, any two consecutive courses from the following: 1, 2, 3, 4, 25, 25A-25B.

German, any two consecutive courses from the following: 1, 2, 3, (or one of 3, 3L, 3P, or 3S), 4, 7, 25A, 25B.

Greek 1, 2, 101, 102.

Italian, any two consecutive courses from the following: 1, 2, 3, 4.

Latin, any two consecutive courses from the following: 1, 2, 3, 5A, 5B, 102.

Portuguese, 1, 2.

Scandinavian, 1 and 2, 11 and 12.

Spanish, any two consecutive courses from the following: 1, 2, 3, 4, 9, 20, 25A-25B.

* Will be accepted as a laboratory course.

† May not be used on both requirement (D) and (E-4).

3. Mathematics:

Any two sequential courses from the following: Mathematics C, D, 1, 3A, 3B, 7.

4. Social Sciences:

Anthropology† 1A-1B.

Economics 1A-1B.

Geography† 1A-1B.

History 4A-4B, 5A-5B, 7A-7B, 8A-8B.

Political Science 1 or 3A, and 2 or 3B.

Sociology 1A-1B.

5. Philosophy:

Philosophy 2A and either 2B or 9, 20 and 21, 30 and 31.

6. Psychology:

Psychology 21, and either 22 or 23.

7. Art, Music:

Art 1A-1B, 2A-2B.

Music 1A-1B, 2A-2B, 35A-35B

University Extension. Courses in the University of California Extension (either class or correspondence) may be offered in satisfaction of requirements for upper division standing and for the degree of Associate in Arts provided they bear the same number as acceptable courses in the regular session. Equivalent courses bear the prefix "XL."

Honorable mention with the degree of Associate in Arts. Honorable mention will be granted with the degree of Associate in Arts to students who attain an average of B; that is, at least two grade points for each unit undertaken.

Upper Division

Only those students who have been granted the degree of Associate in Arts or upper division standing, or who have been admitted to the College with 60 or more units of advanced standing will be registered in the upper division.

The degree of Bachelor of Arts or Bachelor of Science will be granted upon the following conditions:

1. The total number of units in college courses offered for the degree must be at least 120, of which at least 108 must be in courses chosen from the Letters and Science List of Courses (see page 65). Courses numbered in the 300 and 400 series are not included on the List.

No credit is allowed toward the bachelor's degree for work taken at a junior college after the student has completed 70 units.

2. The student must attain at least a C average (one grade point for each

† May not be used on both requirement (D) and (E-4).

unit of credit) in all courses taken by him in the University. Courses taken in other institutions are not counted in computing grade-point totals.

3. At least 50 units of college work must be completed after the attainment of upper division standing, or after transfer from a junior college.

4. At least 36 units of upper division work in courses on the Letters and Science List must be completed after the student has attained upper division standing.

5. The requirement of American History and Institutions must be completed by all candidates for the degree. See page 37.

6. All candidates for the degree must be registered in the College of Letters and Science while completing the final 24 units of work. This regulation applies to students entering this University from other institutions or from the University of California Extension, and to students transferring from other colleges of this University.

7. Students who transfer to the University of California, Los Angeles, from other institutions or from the University of California Extension with senior standing must complete at least 18 units in upper division courses selected from the Letters and Science List, including at least 12 units in the major department or in the general major. This regulation does not apply to students transferring from other colleges within the University.

8. The student must fulfill the requirements of either (a) or (b):

(a) A departmental major or curriculum of at least 24 units in one of the subjects listed under the heading Organized Majors and Curricula in the College of Letters and Science (see page 66).

(b) A general major consisting of not less than 36 upper division units selected from the Letters and Science List of Courses; these units to be chosen from not more than three departments, with not more than 15 units in any one department. See page 71.

Students desiring to enroll in the general major should consult the office of the Dean of the College, 232 Administration Building.

The student is required to take at least one course in his major or curriculum during each of his two final semesters.

Ordinarily no student will be permitted to carry more than 10 units in any one department in any semester. In exceptional cases, 11 units of work in a single department may be permitted provided these units are distributed in not more than three courses.

9. No student may change his major or curriculum after the opening of his final semester.

10. Any department offering a major in the College of Letters and Science may require from candidates for the degree a general final examination in the department.

Students who fail in the lower division to attain a C average in any department may be denied the privilege of a major in that department. If in the

opinion of the major department any student cannot profitably continue in the major, the Dean may permit a change in the major or may, if circumstances warrant, require the student to withdraw from the College.

Letters and Science List of Courses

At least 108 units offered for the degree of Bachelor of Arts must be in courses chosen from the Letters and Science List of Courses, and the 36 units in upper division courses (numbered 100-199) required in the upper division must be selected from the same list.

Any course not included in the Letters and Science List of Courses but required or accepted by a department as part of its major or as a prerequisite therefor, will, for students offering a major in that department at graduation, but for no others, be treated as if it were on the Letters and Science List of Courses.

The following list refers to the courses as given in the departmental offerings for the fall and spring semesters, 1946-1947.

Agriculture:

Agricultural Economics. 101A, 116.

Botany. All undergraduate courses.

Entomology. 1, 134.

Plant Pathology. 120.

Soil Science. 110A.

Anthropology and Sociology:

Anthropology. All undergraduate courses.

Sociology. All undergraduate courses.

Art. 1A-1B, 2A-2B, 4A-4B, 21A-21B, 32A-32B, 42, 121A-121B, 131A-131B, 134A-134B, 144A-144B, 161A-161B, 164A-164B, 180, 182A-182B.

Astronomy. All undergraduate courses except 112.

Bacteriology:

Bacteriology. All undergraduate courses.

Business Administration. 1A-1B, 120, 131, 132, 140, 145, 153, and 180.

Chemistry. All undergraduate courses except 10.

Classics:

Latin. All undergraduate courses.

Greek. All undergraduate courses.

Economics. All undergraduate courses.

Education. 101, 102, 106, 110, 111, 112, 114, 119, 170, 180, 185.

Engineering. 11A-11B, 2, 8, 15A-15B, 102A-102B, 103, 105A-105B, 108A-108B.

English:

English. All undergraduate courses.

Public Speaking. All undergraduate courses except 23.

French. All undergraduate courses.

General Philology and Linguistics. All undergraduate courses.

Geography. All undergraduate courses.

Geology. All undergraduate courses.

Germanic Languages:

German. All undergraduate courses.

Scandinavian Languages. All undergraduate courses.

History. All undergraduate courses.

Home Economics. All undergraduate courses except 11A-11B, 107, 108, 109, 150, 175, 176.

Life Science:

Biology. All undergraduate courses.

Mathematics:

Mathematics. All undergraduate courses.

Statistics. All undergraduate courses.

Meteorology. All undergraduate courses.

Military Science and Tactics. All undergraduate courses.

Music. All undergraduate courses except 7A-7B, 26A-26B, 27A-27B, 46ABCD, 108A-108B, 115A-115B, 118, 144, 168.

Naval Science and Tactics. All undergraduate courses.

Oceanography. All undergraduate courses.

Philosophy. All undergraduate courses.

Physical Education. 1, 2, 26, 44, 130, 135, 140, 146, 150, 151, 155A-155B.

Physics. All undergraduate courses.

Political Science. All undergraduate courses.

Psychology. All undergraduate courses.

Public Health 101A-101B.

Spanish and Italian:

Spanish. All undergraduate courses except 10.

Italian. All undergraduate courses.

Portuguese. All undergraduate courses.

Zoölogy. All undergraduate courses except 4.

ORGANIZED MAJORS AND CURRICULA IN THE COLLEGE OF LETTERS AND SCIENCE

A major (or curriculum) consists of a substantial group of coördinated upper division courses. The upper division unit requirement may represent courses in one or more departments. The details of the program must be approved by an official adviser in the major or curriculum.

Special attention is directed to the courses listed as preparation for the major. In general, it is essential that these courses be completed before upper division major work is undertaken. In any event they are essential requirements for the completion of the major.

Not more than 30 units of upper division courses taken in one department after receiving upper division standing will be counted toward the bachelor's

degree. **NOTE.**—In economics, this limitation is inclusive of courses in business administration.

The major must, in its entirety, consist (1) of courses taken *in resident instruction* at this or another university, or (2) of courses taken in the University of California Extension with numbers having the prefix XL, XB, or X.

The student must attain an average grade of C (1 grade point for each unit of credit) in all courses offered as part of the major (or curriculum).

Courses numbered in the 300 series (teachers' courses) or in the 400 series (professional courses) are not accepted as part of the major.

See further under Regulations for Study Lists, on page 37.

The College offers majors or curricula leading to the degree of Bachelor of Arts in the following fields:

Curriculum in American Culture and Institutions (see below)	Latin
Anthropology	Mathematics
Astronomy	Curriculum in Medical Technology (With major in Bacteriology; see page 69)
Bacteriology	Meteorology
Botany	Music
Economics	Philosophy
English	Physics
French	Political Science
General Major (see page 71)	Curriculum in Public Service (see page 69)
Geography	Psychology
Geology	Sociology
German	Spanish
Greek	Zoölogy
History	
Curriculum in International Relations (see page 68)	

The College offers a major leading to the degree of Bachelor of Science in Chemistry and Applied Physics.

The requirements of the several majors will be found in the announcement of courses.

CURRICULUM IN AMERICAN CULTURE AND INSTITUTIONS

Lower Division

Required: English 1A-1B (6), Geography 1A-1B (6), History 7A-7B (6) or 8A-8B (6) or 4A-4B (6), Political Science 1-2 (6) or Economics 1A-1B (6). Recommended: Agricultural Economics 3 (2), Anthropology 1A-1B (6), Astronomy 1 (3), Bacteriology 6 (2), Biology 1 (3), 12 (3), Chemistry 2A-2B (8), Economics 1A-1B (6) (see above), English 36A-36B (6), History 39 (2), 46 (3), Physics 4A-4B (6), Political Science 1-2 (6) (see above), 10 (3), 34 (3), Sociology 1A-1B (6), Zoölogy 18 (2).

*Undergraduate Curricula***Upper Division**

Curriculum requirements: From Group I.....	15 units
From Group II.....	12
From Group III.....	15
	<hr/>
Total	42 units

The 199 courses in all departments shall be accepted as applying to groups I, II and III below; but the gross count of 199 courses shall not exceed 6 units.

I. Historical Development

Required: Geography 121 (3) and twelve units selected from Anthropology 105 (3), Geography 161 (3), 122A-122B (6), 171A-171B (6), History 152A-152B (6), 153A-153B (6), 156 (3), 162A-162B (6), 171 (3), 172 (3), 173 (3), 174 (3), 181 (3).

II. Cultural and Intellectual Development

Required: English 111 (3), and six units selected from Astronomy 100 (3), Botany 151 (2), Education 102 (3), English 130A-130B (4), 131 (3), 132 (3), 190A-190B (4), Geology 107 (2), Music 142 (2), Philosophy 102 (3), 114 (3), Physical Education 151 (2), Psychology 101 (3), Public Health 101A-101B (6), Public Speaking 165 (3).

III. Political, Economic and Social Development

Fifteen units selected from Economics 107 (2), 131A-131B (4), 132 (3), 150 (3), 155 (2), Education 185 (3), History 112A-112B (6), 164A-164B (4), Political Science 113 (3), 125 (3), 126 (3), 141 (3), 143 (2), 146 (2), 156 (3), 157A-157B (6), 158 (2), 162 (3), 163 (3), 181 (3), Sociology 186 (3), 189 (2).

CURRICULUM IN INTERNATIONAL RELATIONS

This curriculum is designed primarily for students in the College of Letters and Science whose interests, while not specialized, fall in the field of foreign relations and diplomacy. Students interested in preparing for the American Foreign Service examinations should consult the adviser.

Lower Division

Required: Political Science 1-3B (3-3); History 4A-4B, 5A-5B, or 8A-8B (3-3); and Economics 1A-1B (3-3). Recommended: Political Science 2 (3); Geography 1A-1B (3-3); History 7A-7B (3-3).

Upper Division

The curriculum comprises 36 upper division units, distributed as follows:

I. General requirements (21 units): Political Science 125 (3), 127 (3), 133A-133B (3-3); History 140, 144, 145, 146A-146B, or 153A-153B (3-3); and Geography 181 (3).

II. Field requirements: at least nine units in one of the four following fields of specialization—

(a) *Far Eastern Affairs*: Political Science 136 (3), 138 (3); History 191A-191B (3-3); Geography 124 (3).

(b) *Latin American Affairs*: Political Science 126 (3), 151 (3); History 162A-162B (3-3); Geography 122A-122B (3-3).

(c) *European Affairs*: Political Science 154 (3), 155 (3); History 145 (3); [if not offered under I, above, 164A-146B (3-3)], 142 (3), 143 (3); Geography 123A-123B (2-2).

(d) *British Empire Affairs*: Political Science 153 (2); History 163A-153B (3-3) (if not offered under I, above), 152A-152B (2-2), 158A-158B (3-3); Geography 121 (3).

III. Electives: six additional units chosen from the courses listed above or from Political Science 110 (3), 112 (3), 128 (3); History 131A-131B (3-3); Economics 195 (3).

Candidates for the degree in this curriculum will be required to give evidence of their ability to read the current literature in the field in one modern language: French, German, Spanish, or Italian. With permission, candidates may offer Oriental or Slavic languages.

CURRICULUM IN MEDICAL TECHNOLOGY

(with the major in Bacteriology)

The curriculum in Medical Technology prepares students for positions in hospitals, public health departments, and physicians' laboratories. The state of California, through its Board of Health, has set up certain standards for certification in this field. In meeting these requirements, a university education is desirable. Without State certification, which is obtained by passing a State examination, opportunities for appointment are limited. Present State regulations stipulate the completion of a university major in bacteriology, biochemistry, or public health. Of these, only bacteriology is offered on the Los Angeles campus of the University. The Department of Bacteriology accepts as majors only those students whose scholarship is excellent. Transfers from other institutions are carefully interviewed before acceptance.

Lower Division

Required: one year of English (1A-1B); one year of modern foreign language; Chemistry 1A, 1B, 8, 6A; Physics 2A-2B; Zoölogy 15, or the equivalent; Bacteriology 1; additional courses necessary to meet lower division requirements (see page 60).

Upper Division

Required: Bacteriology 103, 105, 106, 106c, 107; Zoölogy 111, 111c, 111H (118 is frequently recommended); Botany 127; American Institutions 101, or the equivalent; electives to total 120 units for the A.B. degree (Public Health 101A-101B is a preferred elective).

CURRICULUM IN PUBLIC SERVICE

The Curriculum in Public Service is designed to be of assistance to students who wish to qualify themselves for positions in government work. It should be noted that a large percentage of government positions are open only through competitive examinations. The curriculum, therefore, is designed to allow the student to coördinate a program drawn from several departments in preparation for a general class of positions. Although the curriculum is primarily related to political science, it is designed to allow a broader training in administrative work than is permitted a departmental major.

Lower Division

Required: Business Administration 1A-1B (3-3), Economics 1A-1B (3-3), Political Science 1 or 3A, 3B (3-3), Statistics 1 (2). In certain fields, other courses are prerequisite to upper division courses included in the curriculum:

Public Welfare—Sociology 1A-1B, Psychology 21, 22.

Public Personnel—Psychology 21, 22.

Public Relations—Six units of lower division history.

Recommended: Economics 40 (3), English 1A-1B (3-3), Public Speaking 1A-1B (3-3), Mathematics D (3) or 1 (3), Political Science 34 (3), Psychology 23.

Upper Division

Required: Thirty-six units of upper division work, including: Business Administration 140 or Economics 40 (if Statistics 1 was not taken in the lower division), Political Science 141, 156, 163, 181, 185. The program must be selected from one of the five fields:

I. Public Personnel Administration

Political Science 141 (3), 156 (3), 162 (3), 163 (3), 181 (3), 183 (3), 185 (3), 187 (3); Psychology 105A-105B (3-3), 185 (3); Business Administration 140 (4), 153 (3); Economics 150 (3), 152 (3), 155 (2).

II. Public Management

Political Science 113 (3), 141 (3), 143 (2), 146 (2), 156 (3), 158 (3), 162 (3), 163 (3), 181 (3), 183 (3), 185 (3), 187 (3); Business Administration 120 (3), 140 (4), 153 (3); Economics 131A-131B (2-2), 150 (3), 152 (3).

III. Public Welfare Administration

Political Science 112 (3), 141 (3), 156 (3), 162 (3), 163 (3), 181 (3), 183 (3), 185 (3), 187 (3); Business Administration 140 (4), 153 (3); Economics 106 (2), 152 (3), 155 (2); Sociology 120 (3), 181 (2), 182 (2); Public Health Nursing 402 (2), 419 (3); Psychology 112 (3), 168 (3), 166A-166B (2-2).

IV. Public Relations

Political Science 125 (3), 127 (3), 141 (3), 142 (2), 143 (2), 146 (2), 148 (3), 156 (3), 157A-157B (3-3), 162 (3), 163 (3), 181 (3), 183 (3), 185 (3), 187 (3); Business Administration 140 (4), 153 (3); Economics 150 (3); History 171-172 (3-3) or 172-173 (3-3).

V. Financial Administration

Political Science 141 (3), 143 (2), 156 (3), 157A-157B (3-3), 162 (3), 163 (3), 181 (3), 183 (3), 185 (3), 187 (3); Business Administration 120 (3), 140 (4), 160A-160B (3-3); Economics 131A-131B (2-2), 133 (3).

Variations in the programs may be made with the approval of the adviser.

The curriculum in public service, which combines work of the departments of Political Science, Economics, Sociology, Psychology, and Business Administration, prepares students for positions in governmental work other than foreign service. The curriculum is of value also for students interested in careers as public relations counselors, personnel managers, etc.

During the past few years, governmental employment, both in the federal and local governments, has offered an attractive field to young men and women who have the proper training and interest. Governmental positions increasingly require specialized training in fields such as budgeting, personnel, engineering,

and in government management. In addition to regular positions with the government, there are openings for part-time or full-time internship training in various governmental agencies in the Los Angeles area.

THE GENERAL MAJOR

To meet the needs of students who do not wish to specialize, the College provides a liberalized curriculum known as a General Major, consisting of 36 units of upper division courses (together with their prerequisites) chosen from the Letters and Science List. These 36 units are to be chosen from not more than three departments, with not more than 15 nor less than 6 units in any one department. Because of its flexibility, this plan makes a special appeal to many students who have professional objectives not identified with any particular major, such as elementary teaching, law, journalism, and librarianship, as well as to those who desire only a broad general culture.

To be admitted to the General Major a student must file a "General Major Plan" approved by an authorized General Major adviser. A student who has a grade-point deficiency is not permitted to transfer to the General Major. He may, however, submit a tentative plan for the major and follow it until such time as his deficiency is removed.

An average grade of C is required in each departmental group of courses comprising the General Major. Deficient grades must be included in the grade calculation.

At least 12 of the 36 units must be taken in a department in which this College offers a departmental major. A total of not more than 24 units in two closely allied fields is allowable, for example in English and speech, or in business administration and economics.

Two semesters of residence in the General Major immediately preceding graduation are normally required. To meet conditions resulting from the present emergency this period may, in deserving cases, be reduced to one semester upon petition to the Dean of the College.

Choice of the General Major should be made on serious grounds, professional, vocational, or personal. Indecision as to educational objectives or future career is not an adequate basis for choosing this major. The General Major is not equivalent to "Major Undecided." The student should have an adequate reason for the combination of fields which he chooses, and should be able to show that the choice has meaning for him, particularly when the reason for the combination is not obvious. That a student happens to have prerequisites in a particular field is not in itself adequate reason for selecting that field.

HONORS

Honorable Mention with the degree of Associate in Arts.

1. Honorable mention is granted with the degree of Associate in Arts to students who attain at least an average of two grade points for each unit undertaken.

2. The list of students who receive honorable mention with the degree of Associate in Arts is sent to the chairmen of departments.
3. A student who gains honorable mention has thereby attained the honor status for his first semester in the upper division.

Honor Students in the Upper Division.

1. An honor list is prepared in the fall semester, and also in the spring semester if the Committee on Honors so decides. The department of the student's major is named in the list.
2. The honor list includes the names of:
 - (1) Students who have received honorable mention with the degree of Associate in Arts and who are in their first semester of the upper division.
 - (2) Upper division students who have an average of at least two grade points for each unit undertaken in all undergraduate work at the University of California, Los Angeles.
 - (3) Other upper division students specially approved for listing in the honor status by the Committee on Honors, either upon recommendation made to the Committee by departments of instruction, or upon such other basis as the Committee may determine.

Honors with the Bachelor's Degree.

1. Honors are granted at graduation only to students who have completed the major with distinction, and who have a general record satisfactory to the Committee on Honors.
2. Before Commencement each department determines, by such means as it deems best (for example, by means of a general final examination), which students it will recommend for honors at graduation, and reports its recommendations to the Registrar.
3. Students who in the judgment of their departments display marked superiority in their major subject may be recommended for the special distinction of highest honors.
4. The Committee on Honors will consider departmental recommendations and will confer with the several departments about doubtful cases. The Committee is empowered at its discretion to recommend to the Committee on Graduation Matters that honors be not granted to any student who has failed to attain a B average in the major, or in the upper division, or in all undergraduate work.
5. The list of students to whom honors or highest honors in the various departments have been awarded is published in the annual COMMENCEMENT PROGRAM.

"Pass" Courses for Honor Students. Upon petition, an honor student pursuing a major shall have the privilege of taking each semester one course not to be offered by him in satisfaction of the requirements for the major, in which

he shall be marked "passed" or "not passed." In calculating grade-point standing, units gained in this way shall not be counted. The maximum number of units which may be earned under this provision is 12. Petitions for such credit will not be accepted later than the first week in the semester.

PREPARATION FOR VARIOUS PROFESSIONAL CURRICULA

Certain courses given at the University of California at Los Angeles may be used as preparation for admission to the professional colleges and schools of the University in Berkeley and in San Francisco.

PREDENTAL CURRICULA

The College of Dentistry offers three curricula: the first and second lead to the degrees of Bachelor of Science and Doctor of Dental Surgery, with a major in restorative dentistry or preventive dentistry, and the third (limited to women students) provides training in dental hygiene and leads to the degree of Bachelor of Science.

The academic (undergraduate) and professional curriculum leading to the degrees of B.S., D.D.S., normally covers six years. The degree of Bachelor of Science is awarded at the end of ten semesters—four semesters in the College of Letters and Science at Los Angeles or Berkeley, followed by six semesters of the eight-semester professional curriculum in the College of Dentistry at San Francisco—and the degree of Doctor of Dental Surgery is awarded after two additional semesters (the last two of the professional curriculum) in San Francisco.

The curricula leading to the degree of Doctor of Dental Surgery include 60 units in the College of Letters and Science at Berkeley or Los Angeles (or the equivalent in another institution of approved standing) before the student may be admitted to the College of Dentistry.

The 60 units of required college study include general University and specific requirements as follows:

- (1) General University requirements
Subject A (see page 36)
Military Science and Tactics, 12 units, or Naval Science and Tactics, 12 units (men). (Not required of students who enter with two years of advanced training.)
Physical Education, 4 units
- (2) English or public speaking, 6 units
- (3) Chemistry with laboratory, 16 units
Inorganic (1A-1B), 10 units
Organic (8 and 9), 6 units
(Chemistry 6A may be substituted for course 9)
- (4) Zoölogy with laboratory, 6-8 units
Courses 1 and 2 (6 units); or 1 and 13 (6 units); or 15 and 2 (8 units); or 1A and 1B (8 units); or 3 units zoölogy and 3 units botany if both include laboratory
- (5) Physics with laboratory, 6-8 units
Courses 2A-2B (8 units); or 1A-1B (6 units)

All students entering the College of Dentistry must have a scholarship average of at least grade C in all work of college level. Students who have attended the University of California must have at least a C average in all work undertaken in the University.

The applicant who wishes to qualify for the degree of Bachelor of Science in addition to the degree of Doctor of Dental Surgery must meet the requirements of the degree of Associate in Arts (see page 60). If the student has completed the requirements stated above, the degree of Bachelor of Science will be awarded at the end of the junior year of the professional curriculum. At the end of the senior year the degree of Doctor of Dental Surgery is conferred upon all qualified students.

Dental Hygiene. To be admitted to the curriculum for the training of dental hygienists, the student must complete a 60-unit college course equivalent to that outlined above for pre dental students. The professional course consists of 60 units of work taken in the College of Dentistry or in part in some other division of the University in the upper division, or in an institution of equivalent standing. The degree of Bachelor of Science is awarded upon the successful completion of the curriculum in dental hygiene.

Limitation of Enrollment. The College of Dentistry reserves the right to limit enrollment on the basis of scholarship, recommendations, and interviews if the number of applicants exceeds the available facilities.

Filing of Applications. Applications for admission to the fall semester, 1946-1947, must be filed not later than August 1, 1946. The admission date for the class entering in 1947 will be announced later.

Information concerning the professional curricula leading to the degrees of Bachelor of Science and Doctor of Dental Surgery will be found in the ANNOUNCEMENT OF THE COLLEGE OF DENTISTRY. Address the Dean of the College of Dentistry, University of California, Medical Center, San Francisco 22, California.

PRELEGAL CURRICULA

The University of California offers instruction in law in both the School of Jurisprudence in Berkeley and in the Hastings College of the Law in San Francisco. Applicants for admission to the professional curriculum of the School of Jurisprudence leading to the degree of Bachelor of Laws must have received the degree of Bachelor of Arts or Bachelor of Science from the University of California, or an equivalent degree from a college or university of approved standing. Exceptions may be made in the case of war veterans. Hastings College of the Law requires for admission the degree of Associate in Arts or its equivalent.

Each applicant to the School of Jurisprudence must (1) present satisfactory references as to character, and (2) submit evidence of an undergraduate program in substantial conformity with the essentials of a satisfactory prelegal education as summarized below.

The faculty of the School is authorized to refuse admission to applicants with low academic records.

References should include the names and addresses of not fewer than three disinterested and responsible persons to whom the applicant is well known and to whom the faculty may appropriately address inquiries with respect to the applicant's character. Wherever possible, the character references should include a member of the Bar who is a graduate of the School of Jurisprudence or of another law school approved by the American Bar Association.

Applicants for admission to the professional curriculum who meet all requirements set forth above, except the requirement of an academic degree, may be admitted to the School if (1) they are eligible for and entitled to receive education or training as provided in Section 400 of the Servicemen's Readjustment Act of 1944 (Public Law 346, Seventy-eighth Congress) or if they have been released from active duty with the armed forces of the United States under conditions other than dishonorable after not less than the period of service therein provided, (2) the record demonstrates superior achievement in undergraduate studies, and (3) they are eligible for admission to senior standing in the University of California.

Students in the College of Letters and Science who plan to offer the first year of law school in lieu of a major and to receive the A.B. degree at the end of the senior year, should select an alternative major and so plan their courses that they may complete the alternative major in two semesters in the event they are not admitted to the School.

In general, the law schools do not prescribe a prelegal curriculum. However, for the guidance of students who are looking forward to the study of law, the essentials of a satisfactory prelegal education are effectively summarized by the School of Jurisprudence, as follows:

In the first place, *the prelegal student should follow a plan of study which will assure adequate foundations for a broad culture.* Such a plan should include among its objectives: (1) a well-grounded facility in the use of English, written and spoken, and a wide acquaintance with the best of English literature; (2) an introduction to Latin as the basis of modern language and the cultivation of at least one modern language other than English, preferably French or German, to a point at which it may be used freely in reading; (3) a familiarity with at least the outlines of human history and a much more thorough knowledge of the history of our own country and people; (4) an acquaintance with the great philosophers and an understanding of the progress and significance of philosophic thought; (5) a mastery of elementary logic and mathematics and some acquaintance with their applications in contemporary life; (6) an introduction, at least, to science, particularly to chemistry and physics, and an appreciation of the tremendous importance of science in the modern world; and (7) a thorough knowledge of the elements of social science, including the essentials of economics, government, psychology, and other important social studies. Foundations must be laid in high school for the

study of English, foreign language, history, mathematics, and science. The prelegal student will generally be well advised to defer philosophy and the social studies until he has entered college. If prelegal study is planned effectively, the foundations for a broad culture may be laid during the high school period and the first two years of college.

In the second place, *the prelegal student should acquire the intellectual discipline and experience which is to be derived from intensive work for a substantial period of time in a selected field of study.* This work should be carefully planned and a special competence should be achieved in the selected field. The field is ordinarily described as a major and the work in this field may be expected to occupy a substantial part of the last two years of college. In general, it has been found that a well-planned major in economics may be related effectively to later professional study in the field of law. Majors in political science, philosophy, English, history or other social studies, if carefully selected, may also provide a suitable preprofessional training. For many students the general major will be found appropriate. College courses in commercial, elementary or business law, planned primarily for students who do not expect to study law, should not be included in any prelegal program.

In the third place, *the prelegal student should begin the cultivation of professional standards of study as early as possible.* Few ideas are more fallacious or harmful than the notion that it is possible to dawdle through high school and college and then make the adjustment to higher standards promptly upon entering the professional school. Essential habits of concentration and effective methods of study must be acquired and developed during the prelegal years. Careful reading and the constant exercise of practice in writing should be cultivated assiduously. Intelligently selected private reading should supplement the work of the classroom at all times. The law as a process of social adjustment is reflected in all aspects of life and the student who carelessly wastes the opportunities of his prelegal years cannot possibly present himself well prepared for professional training. A large proportion of failures in the professional school may be traced directly to the neglect of opportunities in school and college. Distinguished achievement in school and college is usually followed by distinction in the professional school and in later practice.

Further information about the professional curriculum in the School of Jurisprudence is contained in the ANNOUNCEMENT OF THE SCHOOL OF JURISPRUDENCE, to be obtained from the Secretary of the School of Jurisprudence, University of California, Berkeley 4, California.

PREMEDICAL CURRICULUM: THREE YEARS

It is assumed that as preparation for this curriculum the student will have completed in the high school the following subjects: English, 3 units; history, 1 unit; mathematics, 2 units (elementary algebra and plane geometry); chemistry, 1 unit; physics, 1 unit; foreign language (preferably French or German), 2 units. The requirements for the degree of Associate in Arts may be

met more easily if the foreign language has been pursued four years in the high school. It is desirable that a course in freehand drawing be taken in high school. If possible, the student should also complete in high school intermediate algebra, $\frac{1}{2}$ unit, and trigonometry, $\frac{1}{2}$ unit, although these courses may be taken in the University. Trigonometry is prerequisite to the premedical courses in physics.

It is important for students to bear in mind that the class entering the Medical School is limited; in the past there have been a great many more applicants than could be admitted. Premedical students who, upon the conclusion of their sixth semester, find themselves thus excluded from the Medical School, will be unable to obtain the bachelor's degree in the College of Letters and Science at the end of the eighth semester, unless they plan their program with this contingency in mind. They should, therefore, either enter a departmental major at the beginning of the fifth semester, at the same time meeting all premedical requirements, or include in their premedical program a sufficient number of appropriate courses in some major department. Provision for the completion of such a major does not prejudice the student's eligibility for admission to the Medical School.

For matriculation in the Medical School—the eight-semester professional curriculum leading to the degree of Doctor of Medicine—the student must have attained senior standing in the premedical curriculum in the College of Letters and Science.

All applicants for admission to the Medical School are required to take the Medical Aptitude Test of the Association of American Medical Colleges. This examination is given annually at various colleges and universities, including the University of California. The date upon which the examination is to be held in Los Angeles will be announced later.

Applications for admission to the Medical School for the September, 1947, first-year class must be filed with the Director of Admissions, University of California, Berkeley 4, between November 1, 1946, and April 1, 1947. Applications must be accompanied by a draft or money order, made payable to The Regents of the University of California, for \$5 in payment of the application fee. A deposit of \$50 will be required at the time of acceptance of an applicant to the Medical School. This deposit may be refunded if the student fails to meet the requirements but it is not refundable if he accepts appointment to another medical school. Inquiries concerning admission should be addressed to the Dean, University of California Medical School, Medical Center, San Francisco 22.

The number of students who may be admitted to each first-year class from institutions outside the state of California is limited to five, and of these five not more than one will be selected from institutions of any one state.

Owing to the limitation of enrollment in the classes of the Medical School, candidates are selected on the basis of scholarship rank, Medical Aptitude Test score, and personal rating based on interviews with a committee appointed by the President of the University.

The Committee on Admissions to the Medical School is authorized to refuse admission to students who have low academic records and to those of obvious physical, mental, or moral disability. Successful candidates must pass a physical examination before registering in the Medical School. It is advisable for premedical students at the end of their freshman year to consult the University Physician to determine whether they have any physical disabilities which would impair their chances for success in the medical profession.

An applicant for admission to the Medical School who in any semester is rejected because of inferior scholarship may at once present a second application for admission, together with a detailed plan concerning studies to be undertaken in furtherance of his preparation for the work of the Medical School. If his plan receives the approval of the Committee on Admissions, his name will be listed for admission a succeeding semester, and his success in admission will depend on his scholarship rank as a member of the group of applicants for that semester.

An accepted applicant who is unable to begin his work in the Medical School with his class, or who actually enters but finds it necessary to withdraw in his first year, loses his place and, if he desires to begin work in a later period, is required to reapply with the group of applicants for that period. Successful candidates must pass a satisfactory medical examination before registering in the School. Students in attendance in San Francisco are examined annually.

The State law governing the practice of medicine in California prescribes that every person, before practicing medicine or surgery, must produce satisfactory testimonials of good moral character and a diploma issued by some legally chartered medical school, whose requirements meet in every respect the Medical Practice Act of California as attested by the last annual approval of the California State Board of Medical Examiners. The requirements for matriculation in the University of California Medical School cover those set by the Association of American Medical Colleges, provided the high school program includes physics and chemistry.

For further information see the annual ANNOUNCEMENT OF THE MEDICAL SCHOOL, to be obtained from the Dean's office, University of California Medical School, Medical Center, Third and Parnassus avenues, San Francisco 22.

Premedical subjects. For matriculation in the Medical School—the eight-semester course leading to the M.D. degree—the applicant must give evidence of sufficient training in physics, chemistry, biology, and in English literature and composition to enable him to undertake with profit the medical curriculum. He must have a good reading knowledge of French or German. A knowledge of Latin is also of great value.

The following courses given in the University on the Los Angeles campus represent the minimum preparation required in the subjects named: English 1A-1B or Public Speaking 1A-1B; Chemistry 1A-1B (general inorganic chemistry), 6A (quantitative analysis), 8 (elementary organic chemistry); Physics 2A-2B (general physics); Zoölogy 2, 14, 15 (general zoölogy), and Zoölogy 4

(microscopical technique) or zoölogy 1A, 1B, 14, and 4; Zoölogy 105 (mammalian embryology); French or German through course 2. The requirement of American History and Institutions must also be satisfied.

Besides taking the above-listed specific premedical subjects, the student must also be eligible for admission to senior standing in the College of Letters and Science of the University of California. This includes the attainment of the degree of Associate in Arts (or upper division standing), and the completion, after receiving the A.A. degree (or upper division standing), of a minimum of 24 units, 6 units of which must be in upper division courses. The total number of units of college credit which the student must present for senior standing must be at least 90. As an emergency measure, however, the requirement of 90 units may be waived in the case of selected students who have completed not less than 80 units of college work, including all other basic requirements for admission to the Medical School, or who have completed the premedical program of the Army or of the Navy.

After completing the work of the first year in the Medical School with the required scholarship average (reckoned in grade points), and having received as many grade points as units undertaken, the student will be recommended to receive the degree of Bachelor of Arts in the College of Letters and Science. (Thirty units of credit are allowed for the first year's work in the Medical School which, with the ninety units required for admission to the School, fulfill the 120-unit requirement for the A.B. degree). Every candidate for the bachelor's degree must have fulfilled the requirement of American History and Institutions.

SOCIAL WELFARE

Graduate training is now required in almost all fields of social welfare work. Only the undergraduate preparation for this training is offered on the Los Angeles campus. The School of Social Welfare at Berkeley offers a graduate curriculum leading to the degree of Master of Social Welfare (M.S.W.). Some students prefer to enroll for only one academic year, two semesters of work, and to take junior professional positions at the conclusion of their first year of work. No credential is given at the end of the first year, but those who have satisfactorily completed the first year are eligible for junior membership in the American Association of Social Workers.

Admission to the first year's graduate work at Berkeley is limited to students who (a) hold the bachelor's degree and are eligible for admission in full graduate standing at the University of California; (b) are not more than 35 years of age;* (c) are in good health, as indicated by a certificate from the University of California Health Service based upon a thorough medical and physical examination; (d) have completed the following courses or their equivalents, or have shown by qualifying examinations that they have an adequate knowledge of the subject matter of such courses:

1. Economics 1A-1B (Elements of Economics);

* This requirement may be waived for those persons who through experience in the field have demonstrated their capacity for social work.

2. Psychology 21 (General Psychology) ;
3. Economics 150 (Labor Economics) or some other courses in social economics, such as Sociology 181 (Care of Dependents) ;
4. Two units of work in clinical or abnormal psychology ;
5. Economics 40 (Economic and Social Statistics) or Psychology 107A (Mental Measurements) or Statistics 1 (Elementary Statistics) or Education 114 (Educational Statistics).

Candidates must also satisfy the Admissions Committee of the School of Social Welfare that they are in other respects suitably prepared for admission.

NOTE: Students who have not fulfilled items (3), (4), and (5) under requirement (d) above, may be admitted if they submit a plan satisfactory to the School of Social Welfare whereby the requirement will be fully met not later than one calendar year after the date on which they first enroll in the School.

The major for the A.B. degree is not specified, but one of the following is recommended: the major in Sociology; the curriculum in Public Service taken in Public Welfare Administration; the General Major taken in three of the following fields: economics, political science, psychology, sociology;† or the major in Economics, Political Science or Psychology. The Department of Anthropology and Sociology has outlined a course of study which includes the major in Sociology, designed especially for students planning to undertake graduate work in social welfare. Either the major in Sociology or the curriculum in Public Service or the General Major is ordinarily to be preferred, the choice depending upon the student's particular objective within the field. Students planning to enter graduate work in social welfare should confer at the beginning of their undergraduate studies with the counselor in social work.

Not all applicants who qualify under the foregoing provisions will necessarily be admitted to the School, since total enrollment is limited to the number for whom suitable field work training can be arranged. Preference is given to those qualified applicants who appear to be most suitable for the profession of social work.

The graduate curriculum in social welfare may be combined with a program leading to the General Secondary Teaching Credential. This will ordinarily require three or four semesters of graduate work. Students planning to take this combined program should, as early as possible in the undergraduate period, obtain the advice of the Educational Counselor in the School of Education as well as of the counselor in social work.

For information concerning admissions procedure and details of the graduate curricula at Berkeley, consult the ANNOUNCEMENT OF THE SCHOOL OF SOCIAL WELFARE which may be obtained from the School of Social Welfare, 2400 Allston Way, University of California, Berkeley 4, California. Students who plan to take their professional work at other institutions should secure

† In certain cases, the inclusion of home economics in the General Major is recommended.

the appropriate announcements from these institutions and plan their undergraduate program in accord with the admissions requirements of the school or college concerned.

JOURNALISM

The University of California at Los Angeles does not have a curriculum in journalism; a student who desires to prepare himself in this field should enroll in the College of Letters and Science and, with the assistance of his adviser, arrange a program containing fundamental courses in English, economics, history, political science, modern languages, and science. Students interested in this field may acquire practical training by working on the student publications.

RELIGION

Students having a cultural or professional interest in religion and religious education will find in the offerings of various departments many courses germane to these fields of study. In completing the requirements for a degree, including the requirements for a departmental or general major, a student can by judicious selection acquire basic preparation for various forms of religious leadership. Particular attention is directed to the following courses:

- Anthropology 1A-1B, 101A-101B, 103, 125.
- Business Administration 1A-1B, 18A-18B, 132.
- Classics, Latin 110A-110B, Greek 117A-117B.
- Economics 1A-1B, 106, 107, 150, 152, 155, 196A-196B.
- Education 101, 111, 112, 123, 125A-125B, 170, 180, 181, 185.
- English 1A-1B, 31, 36A-36B, 106F, 115.
- Geography 1A-1B, 175.
- History 4A-4B, 111A-111B-111C, 114, 121A-121B, 131A-131B.
- Philosophy 5, 20, 21, 30, 31, 104A-104B, 112.
- Physical Education 2, 5, 15, 140, 141, 142, 155A-155B.
- Political Science 1, 2, 3B, 125, 127, 146.
- Psychology 21, 22 or 23, 112, 138, 147, 175.
- Public Speaking 1A-1B, 2A-2B.
- Sociology 1A-1B, 120, 121, 181, 182, 186, 189.
- Statistics 1.

OTHER PROFESSIONAL CURRICULA IN THE UNIVERSITY

Architecture. In order to be admitted to the School of Architecture in Berkeley, the student must have at least junior standing and should normally have completed the requirements for the degree of Associate in Arts of the College of Letters and Science at Berkeley or Los Angeles, including such prerequisites to upper division courses in architecture as may be prescribed by the faculty of the School of Architecture. Only the academic courses in this program may be taken in the College of Letters and Science at Los Angeles; consequently, the student desiring a major in architecture is advised to enroll at Berkeley in order to complete the curriculum in four years.

Librarianship. The School of Librarianship in Berkeley offers a curriculum of two years subsequent to the bachelor's degree, leading at the end of the first year to the Certificate in Librarianship, and at the end of the second year to the degree of Master of Arts. The A.B. degree of the University of California (Los Angeles or Berkeley) or its equivalent, full graduate standing in the University, and one year each of college French and German are required for admission.

Public Health. The School of Public Health offers a professional curriculum in public health, based on matriculation in the Medical School, leading to the degree of Doctor of Medicine at the end of five years, and to the degree of Doctor of Public Health in two additional years. Students of medicine in the University of California may present one year of the specific public health program in fulfillment of the fifth year in the Medical School, thereby reducing by one year the time required for the degree of Doctor of Public Health.

COLLEGE OF BUSINESS ADMINISTRATION

COURSES WHICH CONSTITUTE the curricula of the College of Business Administration are designed to give students who choose to work toward the Bachelor of Science degree a well-balanced introduction to professional careers in business. Certain fundamental courses are included in the requirements for the degree of Associate in Arts which should give the student the proper background for more technical offerings when the upper division is reached. At the beginning of the junior year the student selects a major field in which advanced work will be completed in the more specialized professional fields of accounting, banking and finance, marketing, management and industry, or office management. While the greatest value of such specialization is largely dependent upon a wise choice in one of those basic fields, students who desire to obtain a more general business training may work toward that end by taking the general business major. With the approval of the Dean the major may be changed not later than the beginning of the senior year. Details covering all phases of the work offered in the College are set forth on the following pages, under Lower Division and Upper Division Requirements.

Every student, upon his matriculation in the University, is assigned to an adviser who will gladly assist him in the selection and arrangement of his course of study, and to whom he may go when problems of a social or a scholastic nature arise. While the student may occasionally be summoned to confer with his adviser, it is his privilege at all times to seek an interview during the hours designated on the adviser's door card.

Special Secondary Teaching Credential in Business Education. Candidates for the bachelor's degree in the College of Business Administration may receive the Special Secondary Teaching Credential in Business Education by completing certain additional requirements, as set forth in the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION, LOS ANGELES.

General Secondary Teaching Credential. Candidates for the Certificate of Completion leading to the General Secondary Teaching Credential, with a major or minor in Business Education, should consult the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION, LOS ANGELES.

University Extension. Students who desire to satisfy the specific subject requirements in the University of California Extension may use only those courses which are the equivalents of courses offered in the fall or spring sessions listed as acceptable in meeting the requirements.

Approved courses for electives in the College. All undergraduate courses in the Letters and Science List (see page 65), will be accepted for credit toward the B.S. degree. A maximum of 6 units of electives aside from the preceding will be accepted toward the degree.

Program limitation. A student who is not restricted in his study list and who is not on probation may present a study list aggregating 12 to 18 units a semester without special permission with respect to quantity of work, save that

in his first semester of residence the maximum must not exceed 16 units, plus the required 1-unit course in physical education. A student who is not under the supervision of the Dean of the College but has a deficiency in the work of the previous semester is limited to 16 units. All courses in military or naval science and physical education and repeated courses are to be counted in the totals.

Lower Division

Requirements for the Degree of Associate in Arts

The degree of Associate in Arts of the College of Business Administration or its equivalent is required for admission to the upper division of the College. It is granted to students who have completed 64 units of college work (of which at least 24 were completed in residence in the College), with a grade-point average in all work done in the University of not lower than 1.0 (a C average), and who have satisfied requirements (a) to (d) below. While some of these requirements may be satisfied by work in the high school, work done prior to graduation from high school will not be counted as part of the 64 units.

(a) *General University requirements:*

Subject A.

Military Science and Tactics, 12 units, or Naval Science and Tactics, 12 units (men).

Physical Education, 4 units.

(b) *Either:*

Foreign Language. At least 16 units in one foreign language. The first two years of high school work in a foreign language will be counted in satisfaction of four units of this requirement; the third and fourth years will be counted in satisfaction of four units each, but will not reduce the total number of units for the degree of Associate in Arts or the degree of Bachelor of Science.

Or:

Natural Science. At least 14 units chosen from the following list, including not less than 4 units of college courses with laboratory work. [Courses marked with an asterisk (*) meet the laboratory requirement.] One year of chemistry or physics completed in the high school will each count as 3 units in satisfaction of the natural science requirement, but will not reduce the total number of units for the degree of Associate in Arts or the B.S. degree.

High school chemistry.

High school physics.

Chemistry 2A, 5 units.*

Physics 2A-2B, 8 units*

Botany, 1A, 4 units.*

Astronomy 1, 3 units.

Biology 1, 3 units.

Geology 2, 3 units.

Geology 5, 4 units.*

Or:

Foreign Language and Natural Science. At least 25 units in foreign language and natural science, of which 16 units must be in not more than two languages and 9 units must be in natural science courses listed above, includ-

ing at least 3 units with laboratory work. In the partial fulfillment of this requirement (but not in satisfaction of unit requirements for a degree) the first two years of high school work in a foreign language will be counted together in satisfaction of 4 units and the third and fourth years will be counted in satisfaction of 4 units each; one year only of chemistry or physics completed in the high school will count as 3 units and will satisfy the requirement of laboratory work.

(c) *Required courses:*

Business Administration 1A-1B, 6 units.

Economics 1A-1B, 6 units.

English 1A, 3 units.

Geography 5A-5B, 6 units.

Mathematics E, 2, 6 units.

Public Speaking 1A, 3 units.

(d) *Matriculation Mathematics.* Elementary algebra and plane geometry. If these subjects were not completed in the high school, they may be taken in University Extension, but will not be counted as a part of the 64 units.

Upper Division

The degree of Associate in Arts is required as a prerequisite to registration in the upper division, except for students who have been granted 64 or more units of advanced standing; such students may complete the remaining lower division requirements while registered in the upper division. Except for such students there must be completed at least 50 units of credit after qualifying for the degree of Associate in Arts, 36 of which must be upper division units.

(a) *University requirement:* American History and Institutions is required of all candidates for the degree of Bachelor of Science (see page 37).

(b) *Social Science.* At least 6 units in social science chosen from the following list:—(may be taken in either upper or lower division.)

Political Science 3A or 1, 3B, 6 units.

History 4A-4B, 6 units; 7A-7B, 6 units; 8A-8B, 6 units; 46, 3 units.

Psychology 21, 3 units; 22 or 23, 3 units.

Anthropology 1A-1B, 6 units.

(c) *General requirements:*

Junior required courses: Business Administration 115A-115B, 120, 140, 160A, 180.

Economics 135.

Senior required course: Business Administration 100.

(d) *Special Elective.* Three units chosen from the following:

Business Administration 110, 116, 117, 132‡, 145, 150, 154.

Economics 131A-131B, 150, 170, 171, 173.

‡ Finance majors may not take this course to meet the Special Elective requirement.

Undergraduate Curricula

(e) *At least nine upper division units in one of the six following majors:*

- (1) *Accounting*: Business Administration 160B, 161, 162, 163, 165.
- (2) *Banking and Finance*: Business Administration 131, 132, 133, 139.
- (3) *Marketing*: Business Administration 184, 185, 186; Economics 195.
- (4) *Management and Industry*: Business Administration 121A-121B, 124, 125, 144, 153.
- (5) *Office Management*: Business Administration 150, 151, 152, 154.
- (6) *General Business*: Business Administration 125, 131, 150, 160B, 184.

The major must be started not later than the beginning of the next to the last semester prior to the date of graduation.

(f) All candidates for the B.S. degree are required to take at least 12 units of electives outside the Department of Business Administration, chosen from the Letters and Science List of Courses (see page 65). These electives may consist of either lower or upper division courses.

(g) *Scholarship requirements*: A candidate for graduation is required to meet the following minimum scholarship requirements:

- (1) At least a C average in all work undertaken in the University.
- (2) At least a C average in all upper division courses taken in the Department of Business Administration.
- (3) At least a C average in all subjects undertaken in the major.

Summary—Units and Grade-Point Requirements

Bachelor of Science Degree

Lower division requirements	64 units with 64 grade points
Upper division requirements:	
General requirements	27 units
Major requirement	9
University requirement	2
Social Science requirement	6
Electives	12
—	
Total	56 units
Total minimum requirements for B.S.	
degree	120 units with 120 grade points

HONORS

The Executive Committee of the College will recommend for Honors or Highest Honors such students as it may judge worthy of that distinction.

COLLEGE OF AGRICULTURE

THE COLLEGE OF AGRICULTURE of the University of California offers at Los Angeles the plant science curriculum with the major in horticulture leading to the degree of Bachelor of Science. This major is not available on the other campuses where the College of Agriculture offers instruction. Courses in floriculture and ornamental horticulture have been recently added and make possible specialization within the major in any one of three coördinate fields—subtropical fruits, flower crops, and ornamental plants. Graduate work is also offered which leads to the degrees of Master of Science and Doctor of Philosophy in horticultural science.

Students electing other majors in the plant science curriculum—agronomy, food technology, genetics, irrigation, plant pathology, pomology, truck crops, and viticulture and enology—may spend the freshman and sophomore years at Los Angeles and then transfer to the campus, Berkeley or Davis, where their major work is offered. The same is true of students electing certain other curricula in the College of Agriculture—agricultural economics, agricultural education, entomology and parasitology, and soil science. Students electing the animal science, forestry, and landscape design curricula are advised to transfer after one year at Los Angeles. The first three years of the agricultural engineering curriculum are available in the College of Engineering at Los Angeles. Students who register at Los Angeles with the intention of later transferring to Berkeley or Davis to pursue other curricula or to obtain majors in the plant science curriculum other than horticulture are requested to consult the PROSPECTUS OF THE COLLEGE OF AGRICULTURE and the appropriate advisers in agriculture at Los Angeles.

The Division of Botany of the College of Agriculture, Los Angeles, offers the major in botany in the College of Letters and Science. Graduate work is also offered which leads to the degrees of Master of Arts and Doctor of Philosophy in botanical science. Students who elect the major in botany are directed to register in the College of Letters and Science. Each student will be required to consult an educational counselor during his freshman and sophomore years, and thereafter an official adviser in the Division of Botany.

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURE

PLANT SCIENCE CURRICULUM, MAJOR IN HORTICULTURE

The candidate for the degree of Bachelor of Science in the College of Agriculture must complete the following requirements:

(1) The equivalent of four years of university residence. The senior year must be spent in the College of Agriculture at this University.

The student should note that in order to complete the work in agriculture within the normal four-year period, prerequisites must be systematically met

and the proper sequence of courses followed. Unnecessary delay will thereby be avoided. It is advisable, therefore, for the student who wishes to receive his bachelor's degree in agriculture at the University of California to take as much of his undergraduate program as possible in the University.

(2) One hundred and twenty-four units of university work, with at least an equal number of grade points, in addition to matriculation units and Subject A. (The Subject A examination in English Composition is required of every undergraduate student on or before his first registration in the University. Further regulations concerning Subject A are given on page 36.

(3) Thirty-six of the 124 units must be in upper division courses (courses numbered 100-199). Not more than 4 units may be in lower division physical education courses.

(4) Nine units of mathematics, including trigonometry. Matriculation work may be offered toward this requirement, with each year of high school work valued at 3 units. The student normally satisfies this requirement before the end of his sophomore year in the University.

(5) American History and Institutions. The student may meet this requirement by passing an examination for which no credit is given, or by completing certain prescribed courses or course sequences. For details, see page 37.

(6) In addition to requirement (4) above, every student must complete the requirements as listed under the following curriculum:

PLANT SCIENCE CURRICULUM

(a) Students must complete the following:

	Units
Chemistry (including Biochemistry).....	16
Botany (including Plant Physiology).....	12
Physics	6
Bacteriology	4
Economics	3
English or Public Speaking.....	3
Genetics	4
Plant Pathology	4
Soils and/or Irrigation.....	6
Entomology	4
Military or Naval Science and Physical Education.....	16
	78

(b) Students also must take a major with the minimum of 12 units of upper division work in horticulture.

Freshman and Sophomore Years

During the freshman and sophomore years the following schedule will normally be followed. For examples of programs in other curricula of the College of Agriculture students should consult the PROSPECTUS OF THE COLLEGE OF AGRICULTURE and the appropriate advisers for agricultural students at Los Angeles.

The College of Agriculture requirements for graduation are the same whether the student registers at Berkeley, Davis, or Los Angeles.

Example of Program—Plant Science Curriculum

	Units First Semester	Units Second Semester
<i>Freshman Year</i>		
11-12 Military or Naval Science (for men).....	3 A	3 A
Physical Education 1.....	1 A	1 A
Botany 1A-1B	4 A	4 B
Chemistry 1A-1B	5 B	5 A
Physics 2A-2B	4 C	4 B
	17	17
<i>Sophomore Year</i>		
21-22 Military or Naval Science (for men).....	3 C	3 B
Physical Education 1.....	1 A	1 A
Botany 6, 7	3 B	4 A
Chemistry 6A, 8	3 B	3 B
Bacteriology 1 .....	..	4 A
Horticulture 2	3 A	..
Horticulture 10 .....	..	2 B
Economics 1A	3 A	..
	16	17

There is no Associate in Arts degree in the College of Agriculture. Consequently students who are unable to meet the above-outlined program of study during the first two years may take some of the requirements in their junior or senior years. It should be noted, however, that any great departure from the above program may delay graduation beyond the normal four-year period.

Junior and Senior Years

The additional required courses—Entomology 134, Zoölogy 130 and 131 (Genetics); 6 units from Soil Science 110A or 126 and Irrigation 110, Plant Pathology 120, and American Institutions 101—together with such electives in any department as may be approved by the major adviser will be taken during the junior and senior years. Entomology 1, normally taken in the sophomore year, may be substituted for course 134 and Plant Pathology 130 for course 120. For elective courses in other departments, see the later pages of this catalogue.

Students should consult the major adviser concerning the 12 units required for the major in horticulture.

OTHER CURRICULA

The requirements in the other curricula offered by the College of Agriculture will be found in the **PROSPECTUS OF THE COLLEGE OF AGRICULTURE**. Programs suitable for the conditions at Los Angeles may be had from the appropriate advisers in agriculture, who should be consulted.

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ARTS**MAJOR IN BOTANY**

Since the major in botany is given in the College of Letters and Science, the requirements for the degree of Bachelor of Arts with the major in botany will be found under College of Letters and Science (see page 65).

HONORS

Students who become candidates for the bachelor's degree in the College of Agriculture may be recommended for honors on the basis of the quality of the work done in the regular curriculum.

I. *Honorable mention with Junior Standing* (that is, to students who have completed 64 units in their freshman and sophomore years).

- (1) Honorable mention is granted with junior standing to students who attain at least an average of two grade points for each unit of credit undertaken. Such students will remain in honors status unless their average for all work at the end of any semester falls below two grade points for each unit undertaken.
- (2) The list of students who receive Honorable Mention is sent to the chairman or study-list officer of the College before the beginning of the next semester.

II. *Honors with the Bachelor's Degree.*

- (1) Honors are granted at graduation only to students in honor status who have completed the major with distinction, and who have a general record satisfactory to the Committee on Honors.
- (2) Students who, in the judgment of the Committee on Honors, show marked superiority in their major subject may be recommended for the special distinction of Highest Honors.
- (3) A list of students to whom Honors or Highest Honors in the College have been awarded is published in the **COMMENCEMENT PROGRAM**.

COLLEGE OF ENGINEERING

THE COURSE offerings of the Department of Engineering were instituted on July 1, 1945. Practically all courses of the first and second years in all engineering curricula are available on the Los Angeles campus (see later sections of this catalogue). The third year courses of most of the options in civil, electrical, and mechanical engineering are being scheduled. Restricted fourth-year engineering offerings will be instituted as conditions permit. The courses and curricula available will be described in future releases of the College of Engineering. Students whose requirements cannot be met on the Los Angeles campus will transfer to the Berkeley or Davis campus at the appropriate time.

*Matriculation requirements:** A statement concerning matriculation requirements will be found on pages 24-26. Intrants to Engineering will be seriously handicapped in undertaking the courses of the freshman year in this College unless they have completed *all* of the following subjects in high school: plane geometry, 1 unit; algebra, 2 units; trigonometry, $\frac{1}{2}$ unit; physics, 1 unit; chemistry, 1 unit; mechanical drawing, 1 unit. Solid geometry, $\frac{1}{2}$ unit, is recommended. Without this preparation it will be difficult or impossible to complete the required curriculum in four years, because the student cannot register for certain freshman and sophomore courses to which matriculation subjects are prerequisite.

Advanced standing: For general information, see page 28. Students transferring from other collegiate institutions to the University of California for the study of engineering should have adequate training in the basic subjects of the curricula as outlined in the following pages. For example, admission unconditionally to the sophomore year presupposes the completion of all matriculation requirements as stated above, and a full year of acceptable subjects of college level, including the fundamental freshman courses for students of engineering, designated in the University of California as Mathematics 3A-3B, Physics 1A-1B, Chemistry 1A-1B.

Many graduates of California high schools may find it desirable to complete the first and second years at an appropriate junior, city, or state college. An examination for acceptance in the third year of engineering will be set and scheduled for all applicants, irrespective of school or campus in which the student has completed the first two years.

Curricula in engineering: Students in the College of Engineering may elect one of nine curricula:** (1) Agricultural Engineering; (2) Civil Engineering; (3) Electrical Engineering; (4) Industrial Engineering; (5) Mechanical Engineering; (6) Mining Engineering; (7) Metallurgy; (8) Economic Geology; and (9) Petroleum Engineering. Each is a four-year curriculum leading to the

* The estimated enrollment during the coming semesters will exceed capacity and a selection of qualified students will have to be made, the details to be announced later. All entering lower division students must take the Pre-Engineering Inventory examination.

** As announced by the College of Engineering at Berkeley.

degree of Bachelor of Science upon completion of the appropriate number of units, and, in addition, grade points equal to the number of units in the credit value of all courses undertaken. In each curriculum fields of study, or options, may be selected.

Curricula and options are so arranged that there is little variation in the freshman years, thereby making it possible for a student to change his curriculum or option without difficulty or loss of time. However, a change in curriculum after the second year may require a student to spend more than four years to meet degree requirements. The degree of Associate in Arts is not awarded in the College of Engineering.

Degree requirements may be completed in four years of residence. Students who give full time to University responsibilities may register without special permission for the number of units shown in the curriculum and option selected. Students who engage in part-time employment or extracurricular activities should plan to spend more than four years by registering for fewer units each semester. Students who wish to spend five years in engineering training may do so to advantage. Some of the benefits of a longer program of study are stated on page 97.

Upon admission to the University, engineering students are assigned to faculty advisers, and are under the guidance of the Dean of the College of Engineering. Study programs are arranged in conference with the adviser and must be approved by the Dean.

Students who plan to seek advanced degrees are referred to the Announcements of the Graduate Division, Southern and Northern Sections.

TABLE OF CORRESPONDING ENGINEERING COURSE NUMBERS

<i>Los Angeles Campus</i>	<i>Berkeley Campus</i>
Engineering 11A, 1FA	Engineering 1A
Engineering 11B, 1FB	Engineering 1B
Engineering 12	Agricultural Engineering 12
Engineering 15A, 15B	Mechanical Engineering 102A, Civil Engineering 108A
Engineering 100A, 100B	Electrical Engineering 100A, 100B
Engineering 102A, 102B	Mechanical Engineering 102A, 102B
Engineering 103	Mechanical Engineering 103
Engineering 104A, 104B	Electrical Engineering 104A, 104B
Engineering 105A, 105B	Mechanical Engineering 105A, 105B
Engineering 107	Civil Engineering 107A
Engineering 108A, 108B, 108F	Civil Engineering 108A, 108B, 108F
Engineering 109	Irrigation 102A
Engineering 113A	{ Electrical Engineering 113
Engineering 125	{ Mechanical Engineering 113
	Civil Engineering 125

ENGINEERING CURRICULA**

AGRICULTURAL ENGINEERING

	Units First Semester	Units Second Semester
<i>First Year</i>		
Subject A (if required) .....	..	..
Military or Naval Science	3	3
Physical Education	1	1
*Mathematics 1 (or 3A)-3B	3	3
Chemistry 1A-1B	5	5
Physics 1A-1B	3	3
Engineering 11A .....	..	2
Engineering 11A .....	..	1
Engineering 2	3	..
	18	18
<i>Second Year</i>		
Military or Naval Science	3	3
Physical Education	1	1
Mathematics 4A-4B	3	3
Engineering 6 .....	..	3
Engineering 12 .....	..	2
Physics 1B-1C	3	3
Economics 1A-1B	3	3
Geology 2	3	..
†Agricultural Engineering 49 .....	..	(6)
‡American History and Institutions .....	..	..
	16	18
<i>Third Year</i>		
‡Engineering 102A-102B	3	3
Engineering 105A-105B	3	3
‡Engineering 108A-108B	3	2
Engineering 108F .....	..	1
Engineering 103 .....	..	3
Engineering 100A-100B	3	3
Engineering 104A-104B	2	2
Engineering 109	3	..
Mathematics 110A-110B	2	2
	19	19

* Admission to Mathematics 3A subject to completion of Mathematics 1 or equivalent. Mathematics 3B must be completed by the beginning of the third semester.

† Agricultural Engineering 49 (6 units taken at Davis), a summer course consisting of a study of engineering problems on typical California farms will be offered in the summer of 1947.

‡ Students who have completed Engineering 15A-15B may petition to substitute for Engineering 102A and Engineering 108A.

§ See page 37 of this bulletin for the Requirement of American History and Institutions.

** Students should consult the GENERAL CATALOGUE, DEPARTMENTS AT BERKELEY, for the fourth year subject requirements.

CIVIL ENGINEERING*		Units	Units
<i>First Year</i>		First Semester	Second Semester
Subject A (if required) .....		..	..
Military or Naval Science		3	3
Physical Education		1	1
† Mathematics 1 (or 3A)-3B		3	3
Physics 1A-1B		3	3
Chemistry 1A-1B		5	5
Engineering 1LA-1LB		2	2
Engineering 1FA-1FB		1	1
		—	—
		*	*
<i>Second Year</i>			
Military or Naval Science		3	3
Physical Education		1	1
Mathematics 4A-4B		3	3
‡ Astronomy 3 .....		..	1
Engineering 8		2	..
Engineering 2		3	..
Physics 1D-1C		3	3
Geology 5 .....		..	4
|| Engineering 15A-15B		3	3
° Engineering 3 .....		..	(4)
¶ American History and Institutions .....		..	..
Electives		—	..
		—	—
		*	*
<i>Third Year**</i>			
†† Engineering 102A-102B		3	3
†† Engineering 108A-108B		3	2
Engineering 107 .....		..	3
Engineering 105A		3	..
Engineering 103 .....		..	3
Engineering 108F .....		..	1
§ Civil Engineering 103 .....		..	(3)
Engineering 100A		3	..
Engineering 104A		2	..
Engineering 109 .....		..	3
Engineering 125		2	..
Electives .....		..	..
		—	—
		*	*

* Normal total, 18 units.

† Students will be admitted to Mathematics 3A upon completion of Mathematics 1, college algebra, or its equivalent. Mathematics 3B must be completed before the beginning of the third semester.

‡ Astronomy 3 is not required of students in Naval R.O.T.C.

§ Not to be given until further notice.

¶ See page 37 of this bulletin for the Requirement of American History and Institutions.

|| Equivalent to Engineering 102A and 108A.

° Students interested in the various options should consult adviser for appropriate course sequence.

** See GENERAL CATALOGUE, DEPARTMENTS AT BERKELEY, for description of options.

†† Students who have completed Engineering 15A-15B may petition to substitute for Engineering 102A and Engineering 108A.

** To be given, summer, 1947.

ELECTRICAL ENGINEERING

	Units First Semester	Units Second Semester
<i>First Year</i>		
Subject A (if required).....	..	..
Military or Naval Science	3	3
Physical Education	1	1
† Mathematics 1 (or 3A)-3B	3	3
Physics 1A-1B	3	3
Chemistry 1A-1B	5	5
Engineering 1LA	2	..
Engineering 1FA	1	..
Engineering 2 .....	..	3
	*	*
<i>Second Year</i>		
Military or Naval Science	3	3
Physical Education	1	1
Mathematics 4A-4B	3	3
Physics 1D-1C	3	3
‡ Engineering 15A-15B	3	3
Engineering 8	2	..
Engineering 10B .....	..	2
Engineering 6 .....	..	3
¶ American History and Institutions .....	..	..
	*	*
<i>Third Year</i>		
* Engineering 102A-102B	3	3
Engineering 105A-105B	3	3
° Engineering 108A-108B	3	2
Engineering 108F	1	..
Engineering 100A-100B	3	3
Engineering 104A-104B	2	2
Mathematics 110A-110B	2	2
Electives .....	..	..
	*	*

* Normal total, 18 units.

† Students will be admitted to Mathematics 3A upon completion of Mathematics 1, college algebra, or its equivalent. Mathematics 3B must be completed before the beginning of the third semester.

‡ Equivalent to Engineering 102A and 108A.

¶ See page 87 of this bulletin for the Requirement of American History and Institutions.

** Students who have completed Engineering 15A-15B may petition to substitute it for Engineering 102A and Engineering 108A.

° Students who intend to specialize in Electronics should enroll in Physics 116-116C, instead of Engineering 108B.

MECHANICAL ENGINEERING

	Units First Semester	Units Second Semester
<i>First Year</i>		
Subject A (if required) .....	..	..
Military or Naval Science	3	3
Physical Education	1	1
† Mathematics 1 (or 3A)-3B	3	3
Physics 1A-1B	3	3
Chemistry 1A-1B	5	5
Engineering 1LA	2	..
Engineering 1FA	1	..
Engineering 2 .....	..	3
	*	*
<i>Second Year</i>		
Military or Naval Science	3	3
Physical Education	1	1
Mathematics 4A-4B	3	3
Physics 1D-1C	3	3
† Engineering 15A-15B	3	3
Engineering 8	2	..
Engineering 10B .....	..	2
Engineering 6 .....	..	3
‡ American History and Institutions .....	..	..
	*	*
<i>Third Year</i>		
** Engineering 102A-102B	3	3
Engineering 103 .....	..	3
Engineering 105A-105B	3	3
Engineering 100A-100B	3	3
Engineering 104A-104B	2	2
** Engineering 108A-108B	3	2
Engineering 108F .....	..	1
Mathematics 110A-110B	2	2
Electives	2	..
	18	19

* Normal total, 18 units.

† Students will be admitted to Mathematics 3A upon completion of Mathematics 1, college algebra, or its equivalent. Mathematics 3B must be completed before the beginning of the third semester.

‡ Equivalent to Engineering 102A and 108A.

§ See page 87 of this bulletin for the Requirement of American History and Institutions.

** Students who have completed Engineering 15A-15B may petition to substitute it for Engineering 102A and Engineering 108A.

MINING AND METALLURGY**

Students in mining may elect one of four curricula: (1) Mining Engineering; (2) Metallurgy; (3) Economic Geology; (4) Petroleum Engineering. Students who plan to enroll in the curriculum in metallurgy should register as freshmen in the College of Engineering at Berkeley if they wish to complete their work in eight semesters. Students who elect mining engineering, economic geology, or petroleum engineering should transfer to the College of Engineering at Berkeley at the end of the first year if they wish to complete their work in six additional semesters.

	<i>First Year</i>	Units First Semester	Units Second Semester
Subject A (if required).....	
Military or Naval Science		3	3
Physical Education		1	1
† Mathematics 1 (or 3A)-3B		3	3
Chemistry 1A-1B		5	5
Physics 1A-1B		3	3
Engineering 1LA-1LB		2	2
Engineering 1FA-1FB		1	1
§ Engineering 3	(4)
		*	*

FIVE-YEAR ENGINEERING CURRICULA

The four-year curricula in engineering may be distributed advantageously over five undergraduate years. A five-year program will permit a wider choice of electives offered by other departments, particularly in the humanities. In addition, training in other fields which underlie many of the functions of engineering such as Agriculture, Economics, Business Administration, Psychology, Physiology, Upper Division Chemistry, Geology, Physics, and Mathematics is made possible. Also, a student may wish to widen his basic experiences within engineering by including courses of both the professional and analytical character as well as to cut across the printed curricular suggestions. The program chosen should be objective and exhibit coherence and is subject to the approval of the adviser and the Dean of the College of Engineering.

* Normal total, 18 units.

† Students will be admitted to Mathematics 3A upon completion of Mathematics 1, college algebra, or its equivalent. Mathematics 3B must be completed before the beginning of the third semester.

§ To be given, summer 1947.

** See GENERAL CATALOGUE, DEPARTMENTS AT BERKELEY, for curricula in Mining Engineering, Metallurgy, Economic Geology, and Petroleum Engineering.

THE COLLEGE OF APPLIED ARTS

THE COLLEGE OF APPLIED ARTS was established on the Los Angeles campus of the University of California to meet a demand for curricula of a specialized character which have to a considerable extent technical or professional appeal, and to maintain and develop certain curricula leading to secondary teaching credentials.

The College now offers majors in art and music leading to the degree of Bachelor of Arts, and majors in home economics and physical education leading to the degree of Bachelor of Science. In connection with these majors, it is possible to secure a secondary teaching credential by following closely the regulations laid down by the School of Education. It should be noted, however, that it is possible to obtain the degree without working for the teaching credential.

In addition, curricula are offered in drama, leading to the degree of Bachelor of Arts, and in apparel design, apparel merchandising, and dance, leading to the degree of Bachelor of Science. For properly qualified graduate nurses, a curriculum in public health nursing, leading to the degree of Bachelor of Science and a Certificate in Public Health Nursing is available.

Nondegree curricula are offered as follows: a certificate program in public health nursing, and preprofessional curricula in prenursing, preoccupational therapy, preoptometry, prepharmacy, and prepublic health.

REQUIREMENTS FOR GRADUATION

LOWER DIVISION

Requirements for Upper Division Standing and the Degree of Associate in Arts

The work of the lower division comprises the studies of the freshman and sophomore years, while the upper division refers to the junior and senior years. In order to be admitted to upper division work a student must have attained upper division standing.

Upper division standing is granted to students who have completed at least 60 units of college work, including requirements (A) to (D) below, with a C average in all work done in the University. Students transferring from other colleges in the University or from other institutions with 60 or more units of credit are given upper division standing and subject shortages, if any, may be completed concurrently with the requirements for the bachelor's degree.

The degree of Associate in Arts will be granted to students who have completed not less than 60 nor more than 90* units of college work, including requirements (A) to (D) below, with at least a C average in all work done in

* If a student fails to satisfy the requirements for the degree of Associate in Arts by the time he completes 90 units of work, he will proceed toward the bachelor's degree without the degree of Associate in Arts.

the University. In addition, the last two semesters (24 units) must be spent in residence at the University and at least the final semester must be completed in the College of Applied Arts.

Certain courses taken in the high school are accepted as fulfilling in part or in whole some of the lower division requirements. However, the fulfillment of lower division requirements in the high school does not reduce the number of units required in the University for the degree of Associate in Arts (60) or for the bachelor's degree (120).

(A) *General University requirements.*†

Subject A.‡

Military Science and Tactics, 12 units, or Naval Science and Tactics, 12 units (men).

Physical Education, 4 units.

(B) EITHER:

(B₁) *Foreign Language.* At least 16 units in one foreign language.

Without reducing the total number of units required for the degree of Associate in Arts or the bachelor's degree, high school work with grades of C or better and not duplicated by college work§ will count as follows: 4 units for the first two years together, and 4 units each for the third and fourth years. The requirement may also be met by passing a proficiency examination in one language. Courses given in English by a foreign language department may not be applied on this requirement.

OR

(B₂) *Natural Science.* At least 12 units chosen from the following list, of which not less than one unit must be in laboratory work. Courses marked with an asterisk (*) meet the laboratory requirement. Only college courses may apply on the natural science requirement.

Anthropology 1A°.

Astronomy 1 or 12, 2*, 7.

Bacteriology 1*, 6.

Biology 1, 12.

Botany 1A*, 1B*, 6*, 7*.

Chemistry 1A*, 1B*, 2A*, 6A*, 6B*, 8, 9*, 10*.

† For information concerning exemption from these requirements apply to the Registrar.

‡ An examination in Subject A (English Composition) is required of all entrants at the time of their first registration in the University. For further regulations concerning Subject A, see page 86.

§ Any student who because of lapse of time or other circumstance feels unable to continue successfully a language begun in high school may consult the department of the language concerned regarding the possibility of repeating all or a part of the work for credit. Such credit would count on the 60 units required for the degree of Associate in Arts and on the 120 units required for the bachelor's degree; but credit is not allowed toward the required 16 units in foreign language for both the high school and college work thus duplicated.

° May be used on natural science or year-course requirement, but not on both.

Entomology 1*.
 Geography 1A°, 3, 5A°.
 Geology 2, 2L*, 3, 5*.
 Mineralogy 3A*, 3B*.
 Physics 1A*, 1B*, 1C*, 1D*, 2A*, 2B*, 21*.
 Zoölogy 1A*, 1B*, 2A*, 13*, 14*, 15*, 16*, 18, 35*.

OR

(B₂) A combination of *Foreign Language* and *Natural Science* to be distributed as follows:

Foreign Language. At least 16 units in not more than two languages. Without reducing the total number of units required for the degree of Associate in Arts or the bachelor's degree, high school work with grades of C or better and not duplicated by college work§ will count as follows: 4 units for the first two years together, and 4 units each for the third and fourth years. If a new language is begun in college, it may not apply on this requirement unless course 2 with its prerequisites is completed. The requirement may also be met by passing a proficiency examination in one language. Courses given in English by a foreign language department may not be applied on this requirement.

Natural Science. At least 9 units chosen from the natural science list set forth above, of which not less than one unit must be in laboratory work. Three units of mathematics not offered in satisfaction of (D) may be substituted for three units of this requirement if Astronomy 12 is not also offered.

(C) *Matriculation Mathematics.* Elementary algebra and plane geometry. If these subjects were not completed in the high school, they may be taken in University of California Extension, but will not be counted as a part of the 60 units.

(D) *Three Year Courses.* A year course chosen from three of the following seven groups, one sequence to be selected from group 1, 2, or 3. Only the courses specified below are acceptable.

1. English, Public Speaking:

English 1A-1B, 36A-36B.

Public Speaking 1A-1B, 2A-2B.

English 1A and Public Speaking 1A, English 1A and Public Speaking 2A, English 1A and 40, Public Speaking 1A and 2B.

§ Any student who because of lapse of time or other circumstance feels unable to continue successfully a language begun in high school may consult the department of the language concerned regarding the possibility of repeating all or a part of the work for credit. Such credit would count on the 60 units required for the degree of Associate in Arts and on the 120 units required for the bachelor's degree; but credit is not allowed toward the required 16 units in foreign language for both the high school and college work thus duplicated.

¶ May be used on natural science or year-course requirement, but not on both.

2. Foreign language. Courses offered in satisfaction of this requirement may not include any of the work offered as part of requirement (B) above. No high school work may be counted on this requirement.

French, any two consecutive courses from the following: 1, 2, 3, 4, 25, 25A, 25B.

German, any two consecutive courses from the following: 1, 2, 3 (or one of 3L, 3F, 3S), 4, 7, 25A, 25B.

Greek 1A-1B.

Italian, any two consecutive courses from the following: 1, 2, 3, 4.

Latin, any two consecutive courses from the following: 1, 2, 3, 5A, 5B.

Portuguese 1, 2.

Scandinavian, any two consecutive courses from the following: 1, 2, 11, 12.

Spanish, any two consecutive courses from the following: 1, 2, 3, 4, 9, 20, 25A, 25B.

3. Mathematics.

Any two of the following courses: Mathematics C, D or E or 1, 2, 3A, 3B, 4A, 4B, 7; Statistics 1.

4. Social Sciences:

Anthropology 1A*-1B.

Economics 1A-1B.

Geography 1A*-1B, 5A*-5B.

History 4A-4B, 5A-5B, 7A-7B, 8A-8B.

Political Science 3A or 1, and 3B or 2.

Sociology 1A-1B.

5. Psychology:

Psychology 21, and 22 or 23.

6. Philosophy:

Philosophy 2A-2B, 20 and 21, 22 and 23.

7. Music, Art (acceptable only when the specific sequence is not the student's major):

Art 1A-1B, 2A-2B, 4A-4B.

Music 1A-1B, 2A-2B, 10A-10B, 11A-11B, 35A-35B.

University Extension. Courses in University of California Extension (either class or correspondence) may be offered in satisfaction of requirements for the degree of Associate in Arts provided they bear the same number as acceptable courses in the regular session. (Equivalent courses bear the prefix "XL.") Extension courses may not, however, be offered as a part of the residence requirement.

* May be used on natural science or year-course requirement, but not on both.

UPPER DIVISION

Requirements for the Bachelor's Degree

The bachelor's degree will be granted upon the following conditions:

1. The minimum number of units for the degree is 120. The student must attain at least a C average, that is, he must obtain as many grade points as units attempted in the University of California.
2. He must complete all the lower division requirements of the College of Applied Arts.
3. The requirement of American History and Institutions must be met by passing an examination or courses accepted as satisfactory for this purpose.
4. All candidates for the degree must be registered in the College of Applied Arts while completing the final 24 units.
5. After admission to the upper division, the candidate must complete at least 50 units of college work, of which at least 42 must be in upper division courses.
6. The candidate must complete a minor of not less than 20 units of co-ordinated courses, of which at least 6 units must be in *closely related* upper division courses. Courses used on the major or teaching credential may not apply on the minor.
7. The candidate must complete, with a scholarship average of at least one grade point per unit, a major† or curriculum in the College of Applied Arts, and must be recommended by the appropriate department or curriculum committee.

Each student is required to take at least 6 units in his major (either 3 units each semester or 2 units one semester and 4 units the other) during his last or senior year.

No student is permitted to change his major after the opening of the last semester of the year in which he intends to graduate.

Students who fail in the lower division to attain at least a C average in any department may be denied the privilege of a major in that department.

A department may submit to the Dean of the College the name of any student who, in the opinion of the department, cannot profitably continue in the major, together with a statement of the basis for this opinion, and the probable cause of the lack of success. The Dean may permit a change of major or may, with the approval of the President, require the student to withdraw from the College.

Any department offering a major in the College of Applied Arts may require from candidates for the degree a general final examination in the department.

† With the approval of the department chairman and the dean, not to exceed six units of "800" courses may be used on both the major and the teaching credential.

Students transferring from other institutions or from University of California Extension with senior standing must complete in the College of Applied Arts at least 18 units in upper division courses, including 12 or more units in the major department. This regulation does not apply to students transferring from other colleges within the University.

*Requirements for the Degree of Bachelor of Science
in Public Health Nursing*

Upon recommendation of the Committee on Curricula in Public Health Nursing, the degree of Bachelor of Science and the Certificate in Public Health Nursing will be awarded to students completing the following requirements:

1. The minimum number of units for the degree is 120. The student must attain at least a C average, that is, as many grade points as units attempted in the University of California.
2. Not more than 24* units of work completed in a school of nursing will be accepted toward this requirement.
3. The candidate must complete all the lower division requirements of the College of Applied Arts.
4. All candidates for the degree must be registered in the College of Applied Arts while completing the final 24 units.
5. The Requirement of American History and Institutions must be met by passing an examination or courses accepted as satisfactory for this purpose.
6. The candidate must complete, with a scholarship average of at least one grade point per unit, a curriculum of 36 units of coördinated upper division units approved by the Committee on Curricula in Public Health Nursing, including the sixteen-week course in supervised field experience.

HONORS

Honorable Mention with the Degree of Associate in Arts. Honorable Mention is granted with junior standing to students who attain an average of at least two grade points for each unit of work undertaken. Such students remain in honor status for the rest of the undergraduate course unless the average for all work at the end of any semester falls below two grade points for each unit undertaken.

The list of students who receive Honorable Mention with the degree of Associate in Arts is sent to the chairmen of the departments.

Honor Students in the Upper Division. The honor list includes the names of:

- A. Students who received Honorable Mention with the degree of Associate in Arts and who are in their first semester of the upper division.

* Formerly 80 units. However, this change does not increase the academic load since the 6 units of field experience not previously counted toward the total is now accepted as part of the 120 units required for the degree of Bachelor of Science.

- B. Upper division students who have an average of at least two grade points for each unit undertaken in all undergraduate work in the University of California.
- C. Other upper division students specially approved for listing in the honor status by the Committee on Honors, either upon recommendation made to the Committee by departments of instruction, or upon such other basis as the Committee may determine.

Honors with the Bachelor's Degree.

- A. Honors are granted at graduation only to students who have completed the major with distinction, and who have a general record satisfactory to the Committee on Honors. Departmental recommendations are reported to the Registrar.
- B. Students who in the judgment of their departments display marked superiority in their major subject may be recommended for the special distinction of Highest Honors. Departmental recommendations are reported to the Registrar.
- C. The Committee on Honors is empowered at its discretion to recommend to the Committee on Graduation Matters that Honors be granted only to students who have attained a B average or higher in the major, or in the upper division, or in all undergraduate work.
- D. A list of students to whom Honors or Highest Honors in the various departments have been awarded is published in the COMMENCEMENT PROGRAM.

ORGANIZED MAJORS AND CURRICULA

A major or a curriculum consists of at least 36 units of coordinated upper division courses. A major is composed of courses from one or more departments arranged and supervised by a department, whereas a curriculum is a program of study made up of courses from several departments and supervised by a special committee.

Special attention is directed to the courses listed as preparation for the major. In general, it is essential that these courses be completed before upper division major work is undertaken. In any event they are essential requirements for the completion of the major.

The major must, in its entirety, consist (1) of courses taken *in resident instruction* at this or another university, or (2) of courses with numbers having the prefix XL, XB, or X taken in University of California Extension.

The student must attain an average grade of C (1 grade point for each unit of credit) in all courses offered as part of the major (or curriculum).

Departmental *majors*, with opportunities for specialization as indicated, are offered in the following fields:

MAJOR IN ART

Appreciation and History
Industrial Design
Interior Decoration and Costume
Design
Painting and Commercial Art
Teaching

Food and Nutrition for Research
Work
General
Teaching

MAJOR IN MUSIC

General
Teaching

MAJOR IN HOME ECONOMICS

Clothing
Dietetics
Food and Nutrition for Promotional Work

MAJOR IN PHYSICAL EDUCATION

Physical Therapy
Recreation
Teaching

Detailed statements of the requirements for these majors, as well as the work to be taken in preparation for them, will be found in later pages of this catalogue.

Special *curricula*, each involving work in several departments, are offered as follows:

Curriculum in Apparel Design

Curriculum in Public Health Nursing

Curriculum in Apparel Merchandising

(Open only to qualified graduate nurses)

Curriculum in Dance

Curriculum in Drama

CURRICULUM IN APPAREL DESIGN

The Curriculum in Apparel Design is planned to provide students with the knowledge, taste, originality, and technical skill essential to the successful designer in either the wholesale or retail trade, or for the stage and screen.

Preparation for the Major.—Art 2A-2B, 4B or 14B, 21A, 24, 32A-32B, Business Administration 1A, Economics 1A-1B, Home Economics 1A-1B.

The Major.—Art 101B, 173 or 183C, 183A-183B, Business Administration 120, Home Economics 107, 170, 175, 176, and 13 units to be chosen from at least two of the following departmental groups: Anthropology 140, 141, Economics 151, 158, 170, Geography 100, 108, 111, History 131A-131B, 171, 172, 173, 174, Psychology 138, 141A-141B, 177, 180, 185. Recommended: at least one summer of practical experience in a factory or retail store.

CURRICULUM IN APPAREL MERCHANDISING

The Curriculum in Apparel Merchandising is designed for students interested in the retailing of clothing, preparing them for positions as salespeople, buyers, or department managers with manufacturers, retail stores, and custom shops.

Preparation for the Major.—Art 2A-2B, 21A, 24, 32A, Business Administration 1A, Economics 1A-1B, Home Economics 1A-1B.

The Major.—Art 101B, 183A–183B–183C, Business Administration 120, 180, 185, 186, Home Economics 109, 170, 175, and 8 units to be chosen from at least two of the following departmental groups: Anthropology 140, 141, Economics 151, 158, 170, Geography 100, 108, 111, History 131A–131B, 171, 172, 173, 174, Psychology 138, 141A–141B, 177, 180, 185. Recommended: at least one summer of practical experience in a factory or retail store.

CURRICULUM IN DANCE

The Curriculum in Dance is designed to give students an opportunity to study in an area involving art, English, music, philosophy, physical education, and psychology as related to dance. This curriculum is not planned to train professional dancers, but rather to offer those interested in dance a program of study in contributing fields.

Preparation for the Major.—Art 1A–1B, 2A–2B, 48B, English 1A–1B, 36A–36B, Philosophy 2A–2B, or 20 and 21, or 22 and 23, Physical Education 31. Recommended: Chemistry 2A, French 1, 2, Music 2A–2B, Psychology 21 and 22 or 23, Zoölogy 15, 35.

The Major.—Thirty-six units of upper division courses, including Art 101B or 168A, English 114A–114B, Philosophy 136, Psychology 135 or 138, 177, Physical Education 130, 150, 151, 153A–153B, 155A, 327A–327B, and 3 or 4 units selected from 105, 131, 140, 141, 142, 145A, 146, 152, 155B. Recommended minor: Art or English.

CURRICULUM IN DRAMA

The Curriculum in Drama offers students an opportunity to study in an area involving basic training in English literature, oral and literary interpretation, play production and directing, and some experience in design, supervision, and costume of the theater. This curriculum is not designed to train students professionally for the stage, but to offer those interested a program of coordinated courses in the field of the theater arts. It is an excellent preparation for the English-Speech field major looking toward the General Secondary Teaching Credential.

Preparation for the Major.—Art 48A–48B, English 1A–1B, 36A–36B, Physical Education 31, Public Speaking 2A–2B. Recommended: History 5A–5B, Psychology 21 and 22 or 23, Public Speaking 23.

The Major.—Thirty-six units of upper division courses, including English 114A–114B, 117J, 6 units to be selected from 156, 157, 167, 177, 187, Physical Education 153A, Public Speaking 155A–155B, 156, 159A–159B, and 8 units to be selected from Art 101B, 168A–168B, 173, 183A–183B, Music 151, Philosophy 136, Physical Education 153B, Psychology 138, 177, Public Speaking 122.

Students who plan ultimately to complete the field major in English-Speech will need to take the following additional courses: English 31 or 106, 115 or 153, 130A–130B or 190A–190B, and must also pass the English Comprehensive Examination.

CURRICULA IN PUBLIC HEALTH NURSING

For degree and certificate programs, see Public Health Nursing in the announcement of courses section of this catalogue.

PREPARATION FOR PROFESSIONAL CURRICULA

Certain courses given on the Los Angeles campus of the University of California may be used as preparation for curricula of professional colleges and schools of the University in Berkeley and in San Francisco.

PRENURSING CURRICULA

Two prenursing curricula are offered:

Two-year Curriculum. The University offers a five-year curriculum leading to the degree of Bachelor of Science and the Certificate in Nursing. The first two years may be taken in the College of Applied Arts (Los Angeles) or the College of Letters and Science (Berkeley), and the final years in the School of Nursing at the University Hospital, San Francisco. The two-year preparatory course is given below.

	Units First Semester	Units Second Semester
<i>First Year</i>		
Subject A (if required).....	..	..
Physical Education 26.....	1	1
Chemistry 2A.....	5	..
Zoölogy 15.....	..	5
English 1A.....	3	..
English 1B or Public Speaking 1A or 2A.....	..	3
†Electives.....	7	7
	16	16
<i>Second Year</i>		
Physical Education 26.....	1	1
Bacteriology 1.....	4	..
Zoölogy 16, 35.....	2	3
Economics 1A-1B.....	3	3
Psychology 21, 22.....	3	3
Political Science 1.....	..	3
†Electives.....	3	3
	16	16

PREOCCUPATIONAL THERAPY CURRICULUM

The University does not offer a complete course in occupational therapy. The following two-year program meets the requirements for the degree of Associate in Arts and includes those subjects recommended by the American Occupational Therapy Association for the freshman and sophomore years. It does not, however, necessarily meet the lower division requirements of all schools of occupational therapy, and each student should ascertain the requirements of the

† Foreign language and Sociology 1A-1B are recommended.

professional school where he plans to take his advanced work and adjust his program accordingly.

	<i>First Year</i>	Units First Semester	Units Second Semester
Subject A (if required)
Physical Education 26		1	1
Chemistry 2A		5	..
Zoölogy 15	5
English 1A-1B		3	3
Art 2A-2B		2	2
Public Speaking 1A or 2A		3	..
Political Science 1	3
		14	14
<i>Second Year</i>			
Physical Education 26		1	1
Zoölogy 35		3	..
Physical Education 44	2
English 36A-36B		3	3
Psychology 21, 22 or 23		3	3
Sociology 1A-1B		3	3
Physical Education 43		1	..
Art 27A-27B		2	2
Bacteriology 6	2
		16	16

PREOPTOMETRY CURRICULUM

The University offers a four-year program in optometry, leading to the degree of Bachelor of Science and the Certificate of Completion in Optometry. The first two years may be taken at Los Angeles; the last two years must be taken in the School of Optometry at Berkeley.

As prerequisites, students should offer the following high school subjects for matriculation: algebra, plane geometry, trigonometry, chemistry, physics, three years of foreign language, and mechanical drawing.

During the first two years, the following curriculum outline should be followed, with such choice of electives as will meet the requirements for the degree of Associate in Arts in the College of Letters and Science, which is prerequisite to admission to the School of Optometry.

	<i>First Year</i>	Units First Semester	Units Second Semester
Subject A (if required)
Military or Naval Science		3	3
Physical Education		1	1
Chemistry 1A-1B		5	5
Public Speaking 1A-1B		3	3
Foreign Language		4	4
Mathematics D or 1, 3A		3	3
		*	*

* Normal total, 16 or 17 units.

	Units First Semester	Units Second Semester
<i>Second Year</i>		
Military or Naval Science.....	3	3
Physical Education	1	1
Bacteriology 6 .....	..	2
Psychology 21, 22	3	3
Zoölogy 15, 16.....	5	2
Physics 2A-2B	4	4
Chemistry 8	3	..
	—	—
	*	*

PREPHARMACY CURRICULUM†

The College of Pharmacy offers a four-year curriculum leading to the degree of Bachelor of Science in Pharmacy. The first year is offered on the Berkeley and Los Angeles campuses of the University. The remaining three years are given at the Medical Center, San Francisco.

The following high school preparation is recommended:

English, 3 units; history, 1 unit; mathematics (algebra and plane geometry), 2 or 2½ units; chemistry, 1 unit; physics, 1 unit, or mathematics (including trigonometry), 3 units; German or French, 2 units; Latin, 2 units; biology, 1 unit. In addition, a year of freehand drawing is recommended.

	Units First Semester	Units Second Semester
<i>First Year‡</i>		
Physical Education	1	1
Military or Naval Science.....	3	3
Chemistry 1A-1B	5	5
Botany 1A .....	..	4
Zoölogy 1A	4	..
English 1A-1B or Public Speaking 1A-1B.....	3	3
Electives .....	..	..
	—	—
	*	*

PREPUBLIC HEALTH CURRICULUM

The University offers a four-year program in public health leading to the degree of Bachelor of Science. On the Los Angeles campus it is recommended that the first two years' work be taken in the College of Applied Arts; the last two years' work is given under the School of Public Health.

* Normal total, 16 or 17 units.

† Students should have completed two years of algebra and one-half year of trigonometry in the high school. Those who have not done so, as well as those who lack the Subject A requirement, should complete these respective requirements in Summer Sessions or in University Extension.

‡ Students who have completed the requirements of the first year cannot be assured of admission to the second year on the Medical Center campus. When the number of qualified applicants exceeds the available facilities, selection of students will be made on the basis of scholarship as determined from the transcript of record, or by examination, or both, at the discretion of the Admission Committee. A personal interview will normally be required. Application blanks for admission to the College of Pharmacy on the Medical Center campus may be obtained from the Dean's Office, College of Pharmacy, Medical Center, San Francisco 22, California.

Undergraduate Curricula

During the first two years, the following curriculum outline* should be followed, with such choice of electives as will meet the requirements for the degree of Associate in Arts:

	<i>First Year</i>	Units First Semester	Units Second Semester
Subject A (if required).....	
Physical Education		1	1
Military or Naval Science.....		3	3
Chemistry 1A-1B		5	5
† Year Course (social science).....		3	3
§ Year Course		3	3
		—	—
		15	15
<i>Second Year</i>			
Physical Education		1	1
Military or Naval Science.....		3	3
Chemistry 6A, 8.....		3	3
Bacteriology 1		4	..
Zoology 1A or 13 or 15.....		..	4-5
Psychology 21, 22 or 23.....		3	3
Electives		1	1-0
		—	—
		15	15

* This program meets the B₂ natural science option for the degree of Associate in Arts.

† See list on page 101.

§ English or public speaking recommended.

THE GRADUATE DIVISION SOUTHERN SECTION

THE UNIVERSITY OF CALIFORNIA offers in the Graduate Division, Southern Section, advanced study leading to the degrees of Master of Arts, Master of Science, Doctor of Philosophy, and Doctor of Education, and to the certificates of completion for the general secondary and junior college teaching credentials. For more complete information concerning the work of the Division, and concerning the requirements for higher degrees, consult the ANNOUNCEMENT OF THE GRADUATE DIVISION, SOUTHERN SECTION, which may be had upon application to the Registrar of the University of California, Los Angeles 24, California.

DEFINITION OF ACADEMIC RESIDENCE

Every regular graduate student must register for, attend, and complete upper division courses (courses in the 100 series) or graduate courses (200 series) amounting to at least 4 units for each term or 2 units for each summer session, in order to satisfy the minimum residence requirement in candidacy for any higher degree or certificate issued by the University.

STUDY-LIST LIMITS

In order to counteract the tendency to accumulate credits by sacrificing thoroughness and the high scholarly attainment which comes only through intense application, the University restricts the number of units in which a student may enroll.

A graduate student in a regular semester is limited to 16 units when he takes only upper division courses, to 12 units when he takes only graduate courses, and to a total made up in the proper proportion of 12 to 16—as for example, 6 graduate and 8 upper division—when he takes both upper division and graduate courses.

Teaching assistants and other employed approximately on half time are limited to three-fourths of these totals. Four units of upper division or graduate courses is the program limit for graduate students engaged on full time in other occupations.

REQUIREMENTS FOR THE MASTER'S DEGREE

Preparation. The candidate's preliminary training for the degree of Master of Arts or Master of Science should be substantially the equivalent of that represented by the corresponding bachelor's degree. In the University of California, the bachelor's degree indicates eight years of systematic high school and college work distributed according to the University's requirements for the particular college or course in which the degree is offered.

If the candidate's undergraduate course has been deficient in breadth of fundamental training and fails to provide a proper foundation for advanced work in the department or departments of his choice, it probably will be neces-

sary for him to take specified undergraduate courses before he may be admitted to regular graduate status.

The degree. The degree of Master of Arts is awarded for the completion of requirements in any of the major subjects of graduate study at the University of California at Los Angeles except applied physics, business administration, chemistry, engineering, home economics, horticultural science, oceanography, and physical education, in which the degree of Master of Science is given.

Major fields. The major fields for the master's degree are:

Anthropology-Sociology	Geography	Music
Applied Physics	Geology	*Oceanography
Art	German	Philosophy
Botany	Greek	Physical Education
Business Administration	History	Physics
Chemistry	Home Economics	Political Science
Economics	Horticultural Science	Psychology
Education	Latin	Spanish
Engineering	Mathematics	Zoölogy
English	Meteorology	
French	Microbiology	

Application for advancement to candidacy. Advancement to candidacy must occur not later than one semester prior to the completion of requirements for the degree. Students are warned that such advancement is not automatic, but requires a formal application distinct from registration. A date approximately two weeks after the opening date is set each semester for application for candidacy by those who hope to qualify for degrees at the close of that session.

Amount and distribution of work. A student must pursue one of the following plans at the option of the department of his major field for fulfillment of the requirements for the master's degree. Under either plan all requirements for the degree must be satisfied within a calendar year from the time of completion of the course requirement.

Plan I: Thesis Plan. At least 20 units and a thesis are required. The units must be taken in graduate or upper division undergraduate courses, and at least 8 of the 20 must be strictly graduate work in the major subject. No unit credit is allowed for the thesis. It is expected that the work of the graduate course, or courses, together with the thesis will not be less than half of the work presented for the degree. After these general and the special departmental requirements are met, the student may take any course in the 100 or 200 series, although he is subject to his major department's guidance in the distribution of his work among the departments. In addition, the major department may require any examination which seems necessary to test the candidate's knowledge of his field.

* At Scripps Institution of Oceanography, La Jolla.

Plan II: Comprehensive Examination Plan. Twenty-four units of upper division and graduate courses are required, of which at least 12 units must be in strictly graduate courses in the major subject. After these general and the special departmental requirements are met, the student may take any course in the 100 or 200 series, although he is subject to his major department's guidance in the distribution of his work among the departments. A comprehensive final examination in the major subject, its kind and conduct to be determined by the department concerned, is taken by each candidate.

Scholarship. Only courses in which the student is assigned grades A, B, or C are counted in satisfaction of the requirements for the master's degree. Furthermore, the student must maintain an average of two grade points a unit in those courses and also in all others elected at the University subsequent to the bachelor's degree; this includes upper division or lower division courses taken in unclassified status. Three grade points for each unit of credit are given to grade A, two points to grade B, one point to grade C, none to grades D, E, and F. (See under Grades of Scholarship, page 41.)

Foreign language. A reading knowledge of a modern foreign language (other than that of the major subject, if the major is a foreign language) is required of each candidate for the master's degree; this requirement must be satisfied before the student is admitted to candidacy. The department of the candidate's major must approve the language selected. In specific instances the Dean of the Graduate Division may authorize the substitution of Latin for a modern language upon the recommendation of the department of the student's major. The examination is to be conducted by the language department in question.

Residence. The minimum period of academic residence required is two semesters, of which at least one semester must be spent at Los Angeles. The requirement may be satisfied in part by residence in the Graduate Division, Northern Section.

A student is not regarded as in residence unless he is actually attending regularly authorized university exercises amounting to at least 4 units of upper division or graduate work in a regular session, or 2 units in a summer session.

Ordinarily all the work for the master's degree is expected to be done in residence, but a graduate of this University or any other approved candidate may complete part of his work in absence, subject to the approval of the Graduate Council, the regulations on study in absence, and the minimum residence requirement of one year.

The thesis. The thesis is the student's report, in as brief a form as possible, of the results of his original investigation. Although the problems for master's degree candidates are of limited scope, they must be attacked in the same systematic and scholarly way as problems of greater magnitude, as, for example, one under investigation by a candidate for the doctor's degree. Before

beginning his work on a thesis, the student must receive the approval of his major department and the instructor concerned, on the subject and general plan of investigation. Detailed instructions concerning the physical form in which theses must be submitted may be had upon application to the Dean of the Graduate Division.

REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

Students who desire to become candidates for the doctor's degree should bear in mind that the degree of Doctor of Philosophy is granted by the University of California not for the fulfillment of technical requirements alone, such as residence and the completion of fundamental courses within a chosen field, but more for the student's general grasp of the subject matter of a large field of study and his distinguished attainments within it, for his critical ability, his power to analyze problems and to coordinate and correlate the data from allied fields to serve the progress of ideas. In addition, he must demonstrate, through his dissertation, the ability to make an original contribution to the knowledge of his chosen field, and throughout his career as a graduate student must prove himself capable of working independently.

Fields of study for 1946-1947. The fields of study open to candidates for the degree of Doctor of Philosophy are chemistry, economics, engineering, English, geology, Germanic languages, history, mathematics, meteorology, microbiology, oceanography, philosophy, physical-biological science, physics, plant science (including botanical science and horticultural science), political science, psychology, Romance languages and literatures, and zoölogy. Other fields and departments will be added as circumstances warrant.

Preparation. A prospective candidate for this degree must hold a bachelor's degree from one of the colleges of this University, based on a curriculum that includes the requirements for full graduate status in the department of his major subject, or must have pursued successfully an equivalent course of study.

Residence. The minimum residence requirement for the doctor's degree is two academic years (or four semesters), one of which, ordinarily the second, must be spent in continuous residence at the University of California, Los Angeles. (See also *Program of Study*, below.)

Foreign language. A reading knowledge of French and German is required of every candidate for the Ph.D. degree and this requirement must be satisfied before he takes the qualifying examinations for advancement to candidacy. In special cases, with the consent of the department of the candidate's major and the Dean of the Graduate Division, another language may be substituted for one of those mentioned, provided the language selected has a clear bearing on the candidate's field of research. The examination is to be conducted by the language department in question.

Program of study. The student's program of study must be approved by the Graduate Council, must embrace a field of investigation previously approved by his department or interdepartment group, and extend over the full period of study. However, recommendation for the degree is based on the attainments of the candidate rather than duration of his study, and ordinarily not less than three full years will be needed to finish the work.

Notice of Ph.D. degree candidacy. As early as possible, preferably at the end of the first semester of graduate study, the student should declare his intention of proceeding to candidacy for the Ph.D. degree. This notification should be given to the department or interdepartment group of the student's field of study and to the Dean; forms for the purpose may be had at the office of the Dean of the Graduate Division.

Guidance committees. On receiving such notification an informal guidance committee will be appointed by the department or interdepartment group of the student's field of study to assist the student in making out his program and in preparing him for the qualifying examinations. This committee must give its written approval to the department before the student is permitted to take these examinations and it ceases to exist as soon as he has passed the qualifying examinations.

Qualifying examinations. Before he is admitted to candidacy, the student must pass a series of qualifying examinations, both written and oral. The written examinations may be administered by the department of the student's field of study, but the oral examination must be conducted by his doctoral committee (see below). The qualifying oral examination is never open to the public.

Doctoral committees. Upon nomination of the department or interdepartment group of the student's field of study a doctoral committee will be appointed by the Graduate Council. This committee conducts the qualifying oral examination (in some cases also the written examinations), supervises and passes upon the student's dissertation, and conducts the final oral examination. For this final oral examination additional members may be appointed to the committee by the Dean of the Graduate Division in consultation with the department.

Advancement to candidacy. The candidate must file his application, properly approved by the committee conducting the qualifying examinations, and must report in person to the Dean of the Graduate Division who determines whether all formal requirements have been met.

A minimum period of resident study approximately equivalent to two semesters must intervene between the date of formal advancement to candidacy and the date of the final examination.

The dissertation. A dissertation on a subject chosen by the candidate, bearing on his principal study and showing his ability to make independent investigation, is required of every candidate for the degree. In its preparation the

candidate is guided by his doctoral committee, which also passes on the merits of the completed dissertation, and the approval of this committee, as well as that of the Graduate Council, is required before he is recommended for the degree. Special emphasis is laid on this requirement. The degree is never given merely for the faithful completion of a course of study, however extensive.

The dissertation must be typewritten or printed. Specific instructions concerning the form may be obtained from the Dean of the Graduate Division. Two copies of the approved dissertation (if it is typewritten, the original and the first carbon) must be filed with the Dean two weeks before the proposed date of the final examinations, for later deposition in the University Library. In certain instances, however, the Graduate Council may authorize the final examination to be taken before the dissertation is accepted.

Final examination. The candidate's final examination is conducted by his doctoral committee. The examination is oral and deals primarily with the relations of the dissertation to the general field in which its subject lies. Admission to the final examination may be restricted to committee members, members of the Academic Senate, and guests of equivalent academic rank from other institutions.

REQUIREMENTS FOR THE DEGREE OF DOCTOR OF EDUCATION

The requirements for the degree of Doctor of Education are similar in general outline to those for the degree of Doctor of Philosophy; for a detailed statement consult the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION, LOS ANGELES.

THE BACHELOR'S DEGREE FOR GRADUATE STUDENTS

Graduate students may be recommended as candidates for the degree of Bachelor of Arts or Bachelor of Science on completing at least 24 units during one or more years of attendance upon such courses of instruction as are regularly pursued by seniors in the University of California, and on performing such additional work and passing such examinations as may appear necessary to the Executive Committee of the appropriate college. Graduate students may, with the permission of the Graduate Council and the approval of the college concerned, register as candidates for a bachelor's degree, but their course of study will be subject to the jurisdiction of the college concerned, which college shall set requirements and shall also make recommendation for the degree. In all cases candidates must satisfy the requirement of 36 units of advanced studies in the College of Letters and Science, or their equivalent in the colleges of applied science, not all of which, however, need have been completed while in residence at this University. No person will be recommended for a bachelor's degree who shall not have satisfied substantially, at the time of procedure to the degree, the conditions imposed upon undergraduate students at the University of California.

SCHOOL OF EDUCATION

LOS ANGELES

THE SCHOOL OF EDUCATION, established on the Los Angeles campus July 1, 1939, offers professional curricula to students preparing for teaching service in elementary and secondary schools, and for experienced teachers desiring preparation for educational administration, research, or other specialized phases of public school education. The School of Education makes provision for all types of teacher training formerly offered in the Teachers College, which was discontinued on June 30, 1939.

Applicants for admission to the School of Education must be students in good standing in the University of California, must have completed the requirements for the degree of Associate in Arts in one of the colleges of the University, or the equivalent, and must be approved by a physician of the University of California as having met the health requirements of the State Board of Education.

Although admission to curricula of the School of Education is contingent upon the attainment of full junior standing, as defined above, representatives of the School will be glad to advise students interested in the most effective preparation for various teaching fields, during their freshman and sophomore years. All such students are urged to consult the Educational Counselor of the School of Education as early as possible in their academic careers.

The School of Education offers curricula leading to certificates of completion and State credentials authorizing service in the following fields:

1. Kindergarten-Primary
2. General Elementary
3. Junior High School
4. Special Secondary in the fields of:
 - a. Art
 - b. Business Education
 - c. Homemaking
 - d. Industrial Arts
 - e. Music
 - f. Physical Education
 - g. Trade and Industrial Education
5. General Secondary
6. Junior College
7. Child Welfare and Supervision of Attendance
8. Special Supervision
9. Elementary School Supervision
10. Elementary School Administration
11. Secondary School Supervision
12. Secondary School Administration
13. General Administration

In addition to maintaining the foregoing curricula, the School of Education provides opportunity for individual programs of study meeting the requirements of the State Board of Education for credentials in educational research, educational counseling, and certain other limited fields.

Students planning to prepare for kindergarten-primary or elementary school teaching may enroll either in the College of Letters and Science, or if their major interests lie in the fields of art, homemaking, industrial arts, music, or physical education, in the College of Applied Arts. Those enrolling in the College of Letters and Science should choose the general major, or a major related to the curriculum of the elementary schools.

Students desiring to prepare for the special secondary credential, which is limited to one field, should enroll in the College of Applied Arts if the proposed major is art, homemaking, industrial arts, music, or physical education. Those desiring the special secondary credential in business education may register either in the College of Business Administration, or the College of Letters and Science with a major in economics.

Candidates for the general secondary credential may enroll for their undergraduate work in the College of Letters and Science, the College of Agriculture, the College of Business Administration, or the College of Applied Arts (if the major is art, homemaking, music, or physical education).

It is highly desirable that all students preparing for teaching consult the Educational Counselor of the School of Education as early as possible in their academic careers, in order that their programs of study may be efficiently planned.

A complete statement of curricula, requirements, and procedures in the School of Education will be found in the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION, LOS ANGELES, which may be obtained at the office of the Dean, 231 Education Building on the Los Angeles campus, or by mail upon application to the Registrar of the University of California, Los Angeles 24, California.

SCHOOL OF PUBLIC HEALTH

The School of Public Health is a University-wide school. Instruction is given on the campuses at Berkeley, Los Angeles, and San Francisco, leading to the degrees of Bachelor of Science, Master of Public Health, and Doctor of Public Health. A Department of Public Health has been established on the Los Angeles campus, which will offer courses satisfying the requirements for these degrees.

Admission: To be admitted to the School of Public Health, students must have completed the requirements for the degree of Associate in Arts or an equivalent thereof satisfactory to the Faculty of the School of Public Health. It is recommended that on the Los Angeles campus the first two years be taken in the College of Applied Arts under the Prepublic Health Curriculum. (See page 109.)

Requirements for the Bachelor's Degree: Candidates for the degree of Bachelor of Science must have completed at least 120 units of college work, at least 60 units of which shall have been upper division courses as prescribed by the curriculum, not less than 24 units of which shall have been completed in the School of Public Health. The student must have obtained at least as many grade points as there are units in the total credit value of all courses undertaken by him in the University of California. He must have satisfied the requirement of American History and Institutions. (See page 37.)

Requirements for the Degree of Master of Public Health: To be admitted to the graduate curricula the student must have graduated from an approved medical school, college of dentistry, college of engineering, or have received the bachelor's degree from an approved college or university, provided the candidate's program had included such a substantial amount of satisfactory work in the biological, physical, and social sciences as will, in the judgment of the Faculty of the School of Public Health, constitute an adequate preparation for his proposed field of specialization. A student who has undergraduate deficiencies must remove them in addition to completion of the requirements of his curriculum.

1. At least one year of graduate residence and a program including not less than 24 units of acceptable course work, in which an average of not less than two grade points per unit has been maintained. With the approval of the Executive Committee of the Faculty of the School of Public Health, a candidate may be authorized to present an acceptable thesis in lieu of 4 of the 24 units required.
2. A comprehensive final examination either in the student's field of specialization or in the general field of public health, as determined by the student's supervisory faculty committee.
3. At least twelve weeks of approved field service in a public health agency.

4. Each candidate for the degree of Master of Public Health must satisfactorily complete the specific requirements of one of the graduate curricula and must include in his program at least one course from each of the four major areas (public health administration, biostatistics, epidemiology, and sanitation), and at least 6 units of second- or third-level courses in his field of concentration.

Requirements for the Degree of Doctor of Public Health:

1. The candidate for the degree of Doctor of Public Health must hold the degree of Doctor of Medicine from an approved medical school.
2. He must complete at least 60 units of work in a curriculum approved by the Faculty of the School of Public Health and by the Graduate Council, with an average grade not lower than B. This program must include not less than:
 - (a) Twenty units in the fields of public health administration, public health bacteriology and immunology, vital statistics, biometry, and epidemiology.
 - (b) Twenty units in the field of human nutrition, protozoölogy and parasitology, sanitary engineering, child hygiene, industrial hygiene, social economics, public administration, and mental hygiene.At least 30 of these units must be completed during residence at the University of California.
3. A thesis based on investigation in one of the above fields.
4. Six weeks' field service completed in an approved public health agency.

ANNOUNCEMENT OF COURSES FOR THE FALL AND SPRING SEMESTERS, 1946-1947

The course offerings listed in this Catalogue are subject to change without notice.

CLASSIFICATION AND NUMBERING

COURSES ARE CLASSIFIED and numbered as follows:

Undergraduate courses. These are of two kinds, lower division and upper division.

A lower division course (numbered 1-49, or sometimes indicated by a letter if the subject is one usually given in high school) is open to freshmen and sophomores, and does not count as upper division work in any department.

An upper division course (numbered 100-199) is advanced study in a field which has been pursued in the lower division, or elementary work in a subject of sufficient difficulty to require the maturity of upper division students. A lower division student (except in Agriculture) may not take an upper division course without written permission of his dean.

Graduate courses (numbered 200-299) are open only to students accepted in regular graduate status. As a condition for enrollment in a graduate course the student must submit to the instructor in charge of the course evidence of satisfactory preparation for the work proposed; adequate preparation will consist normally of the completion of at least 12 units of upper division work basic to the subject of the graduate course. Students in unclassified graduate status are not admitted to graduate courses.

Teachers' courses (numbered 300-399) are highly specialized courses dealing with methods of teaching specific subjects, and are acceptable toward academic degrees only within the limitations prescribed by the various colleges.

ABBREVIATIONS

In the following list of courses, the credit value of each course in semester units is indicated by a number in parentheses after the title. A unit of registration is one hour of the student's time at the University, weekly, during one semester, in lecture or recitation, together with the time necessary in preparation therefor; or a longer time in laboratory or other exercises not requiring preparation. The session in which the course is given is shown by Roman numerals: I for the fall semester, and II for the spring semester. A course given throughout the period September to June is designated: Yr. The assignment of hours is made in the SCHEDULE OF CLASSES AND DIRECTORY to be obtained at the time of registration.

Year courses. A course given in a period of two semesters is designated by a double number. Economics 1A-1B is an example. Each half of the course constitutes a semester's work. The first half is prerequisite to the second unless there is an explicit statement to the contrary. The instructor makes a final report on the student's work at the end of each semester. Unless otherwise noted, the student may take the first half only and receive final credit for it.

AGRICULTURE

CLAUDE B. HUTCHISON, M.S., LL.D., D.Agr. (hon.c.), Professor of Agriculture (Chairman of the Department), Berkeley.

ROBERT W. HODGSON, M.S., Professor of Subtropical Horticulture (Vice-Chairman of the Department on the Los Angeles campus).

Letters and Science List.—Agricultural Economics 101A, 116, all undergraduate courses in botany, Entomology 1, 134, Plant Pathology 120, Soil Science 110A. For regulations governing this list, see page 65.

Upper Division Courses.—All upper division courses announced by this department presuppose at least junior standing. Juniors and seniors in colleges other than Agriculture may elect such courses in the Department of Agriculture as they are qualified to pursue.

Majors Offered.—Two majors are offered on the Los Angeles campus, the major in horticulture in the plant science curriculum of the College of Agriculture (for requirements see sections under the College of Agriculture and the Division of Horticulture) and the major in botany in the College of Letters and Science (for requirements see sections under the College of Letters and Science and the Division of Botany).

Preparation for Other Majors in the Plant Science Curriculum and for Other Curricula in the College of Agriculture.—See the PROSPECTUS OF THE COLLEGE OF AGRICULTURE and consult the appropriate advisers for students in Agriculture.

Course Offerings.—On the Los Angeles campus courses are offered by the following divisions of the Department of Agriculture:

Agricultural Economics (see page 123).

Botany (see page 141).

Entomology (see page 193).

Horticulture (see page 227).

Irrigation, including Soil Science (see pages 229 and 289).

Plant Pathology (see page 274).

AGRICULTURAL ECONOMICS

A Division of the Department of Agriculture

ROY J. SMITH, Ph.D., Assistant Professor of Agricultural Economics.

The Major.—The major is offered only on the Berkeley campus. See the PROSPECTUS OF THE COLLEGE OF AGRICULTURE and consult the appropriate adviser for students in Agriculture.

UPPER DIVISION COURSES

101A. Principles of Marketing Agricultural Products. (3) II. Mr. Smith

Prerequisite: Economics 1A-1B.

Nature of the problems, types of marketing agencies, principal marketing functions and their combination, marketing costs and margins, price quotations and speculation in farm products. Government in its relation to marketing; consideration of proposals for improvement.

***116. Agricultural Policy. (3) II.**

Mr. Smith

Prerequisite: Economics 1A-1B.

The evolution of agricultural policy in the United States. Historical and analytical treatment of principal farmer movements, legislative provisions for the betterment of agriculture, and current policy problems.

118. Farm Management: Business Organization. (3) II.

Mr. Smith

The place, purpose and scope of organization; community and farm basis; farm enterprise; selecting farms; planning and equipping; capital needs; earnings.

* Not to be given, 1946-1947.

ANTHROPOLOGY AND SOCIOLOGY

RALPH L. BEALS, Ph.D., Associate Professor of Anthropology (Chairman of the Department).

HARRY HOLJER, Ph.D., Associate Professor of Anthropology.

CONSTANTINE PANUNZIO, Ph.D., Associate Professor of Sociology.

LEONARD BLOOM, Ph.D., Assistant Professor of Sociology.

EDWIN M. LEMERT, Ph.D., Assistant Professor of Sociology.

GEORGE WALTON BRAINARD, Ph.D., Assistant Professor of Anthropology.

WILLIAM S. ROBINSON, Ph.D., Assistant Professor of Anthropology and Sociology.

VIRGINIA ROEDIGER JOHNSON, Ph.D., Research Associate in Anthropology.

ESHREV SHEVKY, Ph.D., Research Associate in Sociology.

Letters and Science List.—All undergraduate courses in anthropology and sociology are included in the Letters and Science List of Courses. For regulations concerning this list, see page 65.

MAJOR IN ANTHROPOLOGY

Preparation for the Major.—Required: Anthropology 1A-1B and at least 6 units chosen from a list of approved courses. Copies of this list may be obtained from the adviser or from the chairman of the department.

The Major.—Courses 101A-101B, 105, and 9 units chosen from upper division courses in anthropology; and 6 additional units which may be chosen from upper division courses in anthropology or sociology, or from an approved list of related courses in other departments. Copies of this list may be obtained from the adviser or from the chairman of the department.

MAJOR IN SOCIOLOGY

Preparation for the Major.—Required: Sociology 1A-1B, Economics 40 or 142 or Statistics 1 (taken either in lower or upper division), and at least 6 units of courses in other departments selected from a recommended list in accordance with the student's proposed field of specialization. Copies of this list should be obtained from the faculty adviser.

The Major.—Twenty-four upper division units; 6 to 9 units of courses in other departments will be accepted toward completion of the major. A list of such courses, which are prescribed in accordance with various fields of specialization, should be obtained from the faculty adviser.

Graduate Work.—The master's degree in anthropology and sociology is offered with a concentration in one discipline. The department will follow Plan II, Comprehensive Examination. For details of requirements for the examination consult the departmental adviser.

Social Welfare.—The University of California at Los Angeles offers no graduate professional training in social welfare. Students interested in this type of training are referred to the School of Social Welfare at Berkeley. The major in sociology may be offered in satisfaction of the entrance prerequisites of the School of Social Welfare at Berkeley and other approved schools of social work. Specified courses in other departments are also required for those wishing preprofessional training in social welfare. A list of such courses may be secured from the faculty adviser. See also page 79.

ANTHROPOLOGY

LOWER DIVISION COURSES

1A. General Anthropology. (3) I, II.

The Staff

Human biology and physical anthropology; the relation of man and the animals; the origin and antiquity of man; fossil man; anthropometry; the criteria of race and racial classification; current racial theories; race problems.

1B. General Anthropology. (3) I, II.

The Staff

Lectures, three hours; quiz, one hour. May be taken without Anthropology 1A. The nature of culture; culture growth and history; a survey of the range of cultural phenomena, including material culture, social organization, religion, language, and other topics.

UPPER DIVISION COURSES

Courses 1A, 1B or upper division standing are prerequisite to all upper division courses, except as otherwise stated.

101A-101B. World Ethnography. (3-3) Yr.

Mr. Beals

Major theories of culture; survey of principal culture types and their distribution; discussion of ethnological problems.

103. Culture History. (3) II.

A general survey of the origin and development of early civilizations of the Old World: Europe, Asia, Africa, Oceania.

105. The American Indian. (3) I.

An introductory survey of the Indians of North and South America; origins, languages, civilizations, and history.

125. Comparative Society. (3) I.

Mr. Hoijer

Prerequisites: Anthropology 1A, 1B, or Sociology 1A, 1B, or upper division standing and the consent of the instructor.

The comparative study of social institutions: kinship systems; marriage and the family; clans and other social units based on kin; associations; social stratification; economic and political institutions.

***139. Peoples of Africa. (3) I.**

A study of the diverse civilizations of Africa in prehistoric and modern times; relations with Europe and Asia; problems arising from European colonization.

140. Ancient Civilizations of Mexico and Peru. (3) I.

Mr. Beals

Aztecs, Mayas, Incas, and their predecessors; origins, archaeology, traditions, history; social and political systems; religion; art and architecture; intellectual achievements.

141. Indians of Modern Mexico. (3) II.

Mr. Beals

The contemporary Indian groups in Mexico; the present cultures and their derivations; the problem of the mixed culture; Indian influences on modern Mexican culture.

147. Peoples of the South Pacific. (3) II.

The aboriginal civilizations of Australia, Malaysia, Melanesia, Micronesia, and Polynesia in prehistoric and modern times; changes arising from European contact and colonization.

* Not to be given, 1946-1947.

- 199A-199B. **Special Problems in Anthropology.** (1-4; 1-4) Yr.
 Prerequisite: the consent of the instructor. Mr. Beals in charge

GRADUATE COURSES

- *252A-252B. **Theory and Method of Anthropology; Seminar.** (2-2) Yr.
 Mr. Beals
- 256A-256B. **Comparative Social Institutions; Seminar.** (2-2) Yr.
 Mr. Hoijer
- 257A-257B. **Problems in Cultural Anthropology; Seminar.** (2-2) Yr.
 Mr. Beals
- *272A-272B. **American Indian Languages; Seminar.** (2-2) Yr. Mr. Hoijer
 Prerequisite: General Philology and Linguistics 170, 171.
- 299A-299B. **Research in Anthropology.** (1-4; 1-4) Yr.
 Mr. Beals, Mr. Hoijer

RELATED COURSES IN ANOTHER DEPARTMENT (See page 194)

- General Philology and Linguistics 170. Introduction to Linguistics.** (3) II.
 Mr. Hoijer
- General Philology and Linguistics 171. Introduction to Phonetics.** (3) I.
 Mr. Hoijer

SOCIOLOGY

LOWER DIVISION COURSES

- 1A-1B. **Introductory Sociology.** (3-3) Yr. The Staff
 Not open for credit to students who have had former course 30A-30B.

UPPER DIVISION COURSES

Courses 1A-1B or 101, or their equivalent are prerequisite to all upper division courses in sociology unless otherwise stated.

101. **Systematic Sociology.** (3) I, II. Mr. Panunzio
 For upper division students who have not taken Sociology 1A-1B in this institution. An intensive rapid survey of the development of scientific sociology, the principal sociological theories, the sociology of the individual, the group system and its processes, the institutional system and its processes, the sociology of society and culture.
118. **Quantitative Methods.** (3) I. Mr. Robinson
 Prerequisites: Courses 1A-1B or 101, and Statistics 1 or its equivalent.
 The application of statistical procedures to sociological data. The methods of collection and organization of quantitative data.
120. **Social Maladjustment.** (3) I, II. Mr. Bloom, Mr. Lemert
 Selected problems in social and societal maladjustment.
121. **Social Processes.** (3) II. Mr. Panunzio
 Systematic study of the genesis, formation, structure, functioning of groups; the associational and dissociational processes, their forms, means, functions, and products.

* Not to be given, 1946-1947.

- 142. Marriage and the Family. (3) II.** Mr. Bloom
Prerequisite: upper division standing.
The marriage-family system; development, modern functions, characteristics, and maladjustments.
- 143. Urban Sociology. (3) II.** Mr. Bloom
Prerequisite: course 1A-1B and upper division standing, or course 101.
Urban and rural cultures; the characteristics of cities in western civilization with emphasis on the American metropolis.
- 144. Rural Sociology. (3) II.** Mr. Lemert
Prerequisite: course 1A-1B and upper division standing, or course 101.
The characteristics of rural cultures and rural social organization in the western world.
- 145. Community and Ecology. (3) I.** Mr. Robinson
Prerequisites: course 1A-1B and upper division standing, or course 101.
Comparative studies of community structure and organization. Application of the ecological, sociometric and similar techniques to community research.
- 181. The Sociology of Dependency. (3) I.** Mr. Lemert
Prerequisite: course 120 and upper division standing.
Various types of dependency analyzed from the standpoint of social isolation and social control.
- 182. The Sociology of Crime. (2) II.** Mr. Lemert
Prerequisite: course 120 and upper division standing.
Various theories of crime and punishment in contemporary and other societies; criminal behavior systems.
- 185. The Field of Social Welfare. (3) II.** Mr. Lemert
A survey of the field of social welfare and social work functions. This is a preprofessional course open only to senior students in sociology.
- 186. Population. (3) I.** Mr. Panunzio
Prerequisite: course 1A-1B or 101 and senior standing.
The sociological study of population phenomena; population quantity, migration, concentration, and quality of the Western World, with special reference to the United States.
- 189. Ethnic Minorities. (3) II.** Mr. Panunzio
Prerequisites: course 1A-1B or 101 and senior standing.
A sociological study of the origin, development, migration, and ecological concentration of ethnic groups; the social, institutional, and societal phenomena of majority-minority interaction, with particular reference to minorities in the United States.
- 199A-199B. Special Problems in Sociology. (1-4; 1-4) Yr.**
The Staff (Mr. Bloom in charge)
Prerequisite: open to seniors who have had six units of upper division courses in sociology with grades of B or above, and the consent of the instructor.

GRADUATE COURSES

201A-201B. Theory and Method of Sociology. (2-2) Yr.	Mr. Bloom
242A-242B. Social Control. (2-2) Yr.	Mr. Lemert
246A-246B. Demography: Theory, Method, and Policy. (2-2) Yr.	Mr. Panunzio
*249A-249B. American Ethnic Minorities. (2-2) Yr.	Mr. Panunzio
299A-299B. Research in Sociology. (1-4; 1-4) Yr.	Mr. Panunzio, Mr. Bloom

* Not to be given, 1946-1947.

ART

ROBERT S. HILPERT, M.A., Associate Professor of Art Education (Chairman of the Department).

LOUISE PINKNEY SOOY, Associate Professor of Fine Arts.

HELEN CLARK CHANDLER, Associate Professor of Fine Arts, Emeritus.

NELLIE HUNTINGTON GERE, Associate Professor of Fine Arts, Emeritus.

S. MACDONALD WRIGHT, Associate Professor of Fine Arts.

LAURA F. ANDRESON, M.A., Assistant Professor of Fine Arts.

ANNITA DELANO, Assistant Professor of Fine Arts.

CLARA BAETRAM HUMPHREYS, M.A., Assistant Professor of Fine Arts.

ANNIE C. B. MCPHAIL, Ed.B., Associate in Fine Arts.

IDA ABRAMOVITCH, M.A., Instructor in Art.

EVERETT C. ADAMS, M.A., Instructor in Art.

MARJORIE HARRIMAN BAKER, B.E., Instructor in Art.

WILLIAM BOWNE, M.A., Instructor in Art.

ARCHIE FETTY, M.A., Instructor in Art.

JOSEPH WILLIAM HULL, M.A., Instructor in Art.

KENNETH G. KINGREY, M.A., Instructor in Art.

MARGARET HINSHAW RISWOLD, B.E., Instructor in Art.

NATALIE WHITE, M.A., Instructor in Art and Supervisor of Training, Art.

College of Applied Arts

Preparation for the Major.—Courses 1A-1B, 2A, 2B, 4A, 4B, 14A, 14B, and eight units of required prerequisites for the chosen major.

The Major.—Thirty-six units of coordinated upper division courses which may be taken in one of five specified majors:

(1) *Major in Appreciation and History.*

Courses 101A, 101B, 121A-121B, 131A, 131B, 144A, 144B, 161A-161B, 174A-174B; and 12 units to be approved by the departmental adviser.

(2) *Major in Painting or Commercial Art.*

Courses 121A-121B, 134A-134B, 135, 144A-144B, 164A-164B, 165A, 174A-174B; and 12 units to be approved by the departmental adviser.

(3) *Major in Industrial Design.*

Courses 101A, 117A-117B, 121A-121B, 127A-127B, 132A-132B, 147A, 147B, 156A, 177; and 10 units to be approved by the departmental adviser.

(4) *Major in Interior Decoration and Costume Design.*

Courses 101A, 101B, 121A-121B, 156A, 156B, 173, 183A-183B, 186A, 186B; and 14 units to be approved by the departmental adviser.

(5) *Major in Teaching of Art.*

Courses 117A, 121A-121B, 127A, 132A, 134A, 144A, 147A, 156A, 165A, 168A, 173, or 183A, 180; and 10 units to be approved by the departmental adviser.

College of Letters and Science

Programs for the General Major.—Two programs are offered in partial satisfaction of the requirements for the general major:

(A) *History and Appreciation of Art*; lower division preparation, course 1A, and four units selected from 1B, 2A, 2B, 4B; the major, 6 to 15 units chosen from courses 121A–121B, 131A–131B, 161A–161B.

(B) *Painting*; lower division preparation, courses 2A, 4A, 4B, 14A; the major, 6 to 15 units chosen from courses 134A–134B, 144A–144B, 164A–164B, 174A–174B.

Letters and Science List.—Courses 1A–1B, 2A, 2B, 4A, 4B, 21A, 21B, 32A–32B, 42, 121A–121B, 131A, 131B, 134A–134B, 144A, 144B, 161A–161B, 164A–164B, and 174A–174B, 180, 182A–182B, are included in the Letters and Science List of Courses. For regulations governing this list, see page 65. A major in art is not offered in the College of Letters and Science.

Graduate Division

Requirements for the Master's Degree.—For the general requirements, see page 111. The Department of Art follows either Plan I, 20 units of graduate work and a thesis, or Plan II, 24 units of graduate work (including 4 units of an advanced project in the laboratory field as approved by the department) and a comprehensive examination.

Laboratory Fees.—Courses 147A, 330, \$2.50; 27A, 27B, \$3.50; 117A, 117B, 182A, 182B, \$4; 144B, 164A, 164B, \$5.

LOWER DIVISION COURSES

- 1A. Art and Civilization. (2) II.** Mrs. Baker
The origin and function of the arts and their practical relation to contemporary civilization.
- 1B. Art and Civilization. (2) II.** _____
Prerequisite: course 1A.
A continuation of course 1A.
- 2A. Art Structure. (2) I, II.** Mrs. Baker
Fundamental course in creative design and color harmony. Color theory.
- 2B. Art Structure. (2) I, II.** _____
Prerequisite: course 2A.
Basic study of the elements of art as related to two-dimensional decorative design.
- 4A. Perspective Drawing. (2) I, II.** Mr. Hull
- 4B. Drawing. (2) I, II.** Mr. Bowne, Miss McPhail
Prerequisite: course 4A.
Objective drawing of natural forms from observation and memory.
- 14A. Water-color Still-Life Painting. (2) I, II.**
Prerequisite: courses 1B, 2B, 4A, 4B. Mrs. Abramovitch, Mr. Adams

- 14B. Rendering in Water Color and Related Media.** (2) I, II. Mr. Adams
- 15. Lettering—Layout.** (2) I, II. Mr. Kingrey
Prerequisite: courses 1A, 2B.
Introduction to design in advertising. Elements of free-brush and pen lettering (classical and contemporary). Simple problems in layout, commercial rendering, interpretation, and projection of ideas.
- 21A. Appreciative Study of the Student's Apparel.** (2) I, II. Mrs. Sooy and the Staff
Lectures on becoming color, line, fabric, and on the psychology of color, line, texture; analyses of appearance and temperament; individual criticism on apparel, hair, and makeup.
- 21B. House Furnishing.** (2) I, II. Mrs. Fetty and the Staff
Lectures and demonstrations.
Appreciative study of modern house furnishing.
- *22. Design in Three Dimensions.** (2) I, II. Miss McPhail
Prerequisite: courses 1A, 2A, 2B.
Principles of design as related to three-dimensional form; experiments in the use of plastic materials in abstract composition.
- 24. Figure Sketching.** (2) II. Miss McPhail
A basic simplified study of the proportions of the human figure with variations as used in the fashion industry. Quick sketching of the costumed model for accuracy of fashion reporting. Exercises in sketching current merchandise on the figure.
- 27A-27B. Crafts Workshop.** (2-2) Yr. Beginning either semester. ———
Fee, \$3.50 each semester.
A course designed to meet the needs of recreational workers, occupational therapists, social workers, and others interested in handcraft.
- 32A-32B. Advanced Art Structure.** (2-2) Yr. Beginning either semester. ———
Further experience in color and design with emphasis on design for fabrics and accessories related to apparel, interior decoration, and industry.
- 34A-34B. Design in Painting.** (2-2) Yr. Beginning either semester. Mr. Adams, Mrs. Abramovitch
Prerequisite: courses 1A, 1B, 2B, 4A, 4B. Imaginative painting, using line, space, light, and color; study of the derivation of modern forms in painting.
- 42. Introduction to Art.** (3) I, II. Mrs. Humphreys
Not open to students whose major is art.
An exploratory course to develop an understanding and appreciation of art as an aspect of all activities of daily life.
- 48A. Theater Crafts.** (2) I, II. ———
Construction of stage sets, use of materials and equipment of the modern stage.

* Not to be given, 1946-1947.

48B. Theater Crafts. (2) I, II.

Construction of theater costume. Cutting, fitting, dyeing, and processes of decorating. The organization of the costume wardrobe.

UPPER DIVISION COURSES

- 101A. History of Furniture. (2) I.** Mrs. Sooy
The history of furniture from ancient to modern times.
- 101B. History of Costume. (2) II.** Mrs. Sooy
The history of costume from ancient to modern times.
- 117A-117B. Ceramics. (2-2) Yr. Beginning either term.** Miss Andreson
Fee, \$4 a semester.
Practice in the various methods of building pottery; glazing; firing.
- 121A-121B. Survey of the History of Art. (2-2) Yr.** Miss Delano
Prerequisite: courses 1A, 1B.
- 127A. Bookbinding. (2) I, II.** Mrs. Riswold
Fee to be announced.
Practical work in bookbinding, using various types of book construction and binding materials.
- 127B. Bookbinding. (2) I, II.** Mrs. Riswold
Prerequisite: course 127A. Fee to be announced.
A continuation of course 127A.
- 131A. History of Architecture and Sculpture. (2) I.** Mr. Hull
Prerequisite: courses 1A, 1B.
- 131B. History of Painting. (2) II.** Mr. Hull
Prerequisite: courses 1A, 1B.
- 132A-132B. Design for Industry. (2-2) Yr.** Miss Delano
Prerequisite: courses 14B, 32B.
Study of materials, tool processes, and functional design of industrial products.
- 134A-134B. Landscape Painting. (2-2) Yr.** Miss Delano
Prerequisite: course 34B.
The development of personal vision and individual expression in landscape painting.
- 135. Book Illustration. (2) II.** Mr. Bowne
Prerequisite: courses 144A, 164A.
- 144A. Oil Painting. (2) I.** Mrs. Abramovitch
Prerequisite: courses 14A, 34A-34B.
The techniques of oil painting; development of perception and understanding of the essential qualities of form, light, color, and their integration in still-life painting.
- 144B. Oil Painting. (2) II.** Mrs. Abramovitch
Prerequisite: course 144A. Fee, \$5.
A continuation of course 144A. Painting from life models.

- 147A. Weaving. (2) I, II.** Mrs. Riswold
Prerequisite: courses 2A, 2B, 32A-32B. Fee, \$2.50.
History and development of weaving; experience with techniques and processes.
- 147B. Weaving. (2) II.** Mrs. Riswold
Prerequisite: course 147A. Fee to be announced.
A continuation of course 147A.
- 155. Poster Design. (2) I.** Mr. Kingrey
Prerequisite: courses 15, 34B.
Intensive study and practice of all forms of poster design. Analysis of psychology and propaganda as related to poster art. Practical experience through cooperation with various agencies.
- 156A. Interior Decoration. (2) I, II.** Mrs. Fetty
Lectures, laboratory, and demonstrations. Prerequisite: course 21B.
The consideration of the home as a unit; the arrangement of garden, house, floor plan, and furniture as functional and decorative problems.
- 156B. Interior Decoration. (2) II.** Mrs. Fetty
Prerequisite: course 156A.
The study of the historical periods in relation to interior decoration; adaptation, and original design.
- 161A-161B. Oriental Art. (2-2) Yr.** Mrs. Wright
Prerequisite: course 1A and the consent of the instructor.
Selected problems from phases of Oriental art.
- 164A-164B. Life Drawing. (2-2) Yr.** Mrs. Abramovitch
Fee, \$5 a semester.
Objective drawing and expressive interpretation of the human figure; its use in original composition.
- 165A. Design for Advertising. (2) I.** Mr. Kingrey
Prerequisite: courses 15, 34B.
Study of rendering techniques and forms of advertising art: newspaper, magazine, brochure.
- 165B. Design for Advertising. (2) II.** Mr. Kingrey
Prerequisite: course 165A.
Development of professional ideas; creative interpretation and layout for complete advertising campaigns.
- 168A. Fundamentals of Scenic Design. (2) I, II.** _____
Prerequisite: course 48A.
- 168B. Advanced Scenic Design. (2) I, II.** _____
Prerequisite: course 168A.
- *173. Costume of the Theater. (2) I.** Mrs. Sooy
The decorative, historical, and psychological aspects of stage costume.

* Not to be given, 1946-1947.

- 174A. Painting Methods and Materials. (2) I.** Mr. Adams
Prerequisite: course 34B.
A technical study of the methods, materials, and techniques of the artist and their use in painting.
- 174B. Tempera Painting. (2) II.** Mr. Adams
Prerequisite: course 174A.
Further experience in coördinating all of the factors entering into a painting in terms of the tempera media.
- 177. Metal Craft. (2) I.** Mrs. Biswold
Open only to art majors with the consent of the instructor. Fee to be announced.
Designing and making jewelry; sawing, soldering, stone setting, etc.
- 180. Theory and Philosophy of Art Education. (2) II.** Mr. Hilpert
A comparative study of existing theories and practices in art education.
- *182A-182B. Design in Sculpture. (2-2) Yr.** _____
Prerequisite: courses 22, 164A-164B. Fee, \$4 a semester.
Problems in creative expression; modeling of figures in terra cotta.
- 183A-183B. Modern Costume Design. (2-2) Yr.** Mrs. Sooy
Prerequisite: courses 21A, 32B.
- 183C. Principles of Fashion Analysis. (2) II.** Mrs. Sooy
Prerequisite: course 183A.
Lectures and demonstrations. Guest lecturers.
Past and present fashion trends; evaluation of current fashions; presentation and promotion of fashion merchandising; reporting, surveys, and display.
- 186A. Advanced Interior Decoration. (2) I.** Mrs. Fetty
Prerequisite: course 156B.
The study of color harmonies and form arrangements; the influence of fashion in interior decoration.
- 186B. Advanced Interior Decoration. (2) II.** Mrs. Fetty
Prerequisite: course 186A.
The technique of interior decoration; shop practice through actual problems in interior design in stores and homes.
- 199A-199B. Special Studies for Advanced Students. (1, 4; 1, 4) I, II.** Mr. Hilpert and the Staff
Prerequisite: senior standing, an average grade of B or higher in courses in art, and the consent of the instructor.
Advanced individual work upon specific problems connected with art or education.

GRADUATE COURSES

- 260A-260B. Seminar in Contemporary Art. (2-2) Yr.** Mr. Wright
A consideration of the social, economic, psychological, and philosophical influences shaping contemporary art.
- *271A-271B. Advanced History of Art: Seminar. (2-2) Yr.** _____
- 299A-299B. Special Studies for Advanced Students. (1-4; 1-4) Yr.** The Staff

* Not to be given, 1946-1947.

PROFESSIONAL COURSES IN METHOD

- 330. Industrial Arts for the Elementary Grades. (3) I, II.** Miss White
Fee, \$2.50.
- 370A. Principles of Art Education. (2) I.** Mr. Hilpert
A study of objectives, child growth and development; general educational principles as related to art education.
- 370B. Principles of Art Education. (2) I, II.** Mr. Hilpert
A study of method and the curriculum in art education.

ASTRONOMY

FREDERICK C. LEONARD, Ph.D., Professor of Astronomy.

SAMUEL HERRICK, Ph.D., Assistant Professor of Astronomy (Chairman of the Department).

JOSEPH KAPLAN, Ph.D., Professor of Physics.

Letters and Science List.—All undergraduate courses in astronomy are included in the Letters and Science List of Courses. For regulations governing this list, see page 65.

Preparation for the Major.—Required: general astronomy, spherical astronomy, and practice in observing (Astronomy 7, 4, and 2); general physics (Physics 1A-1B-1D-1C or, in exceptional cases, 2A-1D-1C or 2A-2B); plane trigonometry, plane analytic geometry, and differential and integral calculus (Mathematics C, 3A, 3B, and 4A). Recommended: English composition, public speaking, and a reading knowledge of at least one modern foreign language.

The Major.—Twenty-four upper division units of astronomy, physics, and mathematics, of which at least 18 must be of astronomy and all 24 in courses approved by the department.

LOWER DIVISION COURSES

1. **Elementary Astronomy.** (3) I, II. Mr. Leonard, Mr. Herrick
Lectures, three hours; discussion, one hour.
The general principles and the fundamental facts of astronomy. This is a cultural course for nontechnical students, and is not open, except with the permission of the department, to students who are majoring, or preparing to major, in a physical science or mathematics and who have the prerequisites for Astronomy 7.
2. **Practice in Observing.** (1) I. Mr. Leonard
Prerequisite: credit or registration in course 7; or, course 1, plane trigonometry, and the instructor's consent.
Practical work for beginners, including constellation studies, telescopic observations of celestial objects, laboratory exercises cognate to the material of course 7, and regularly scheduled excursions to the neighboring observatories and planetarium. Required of students preparing to major in astronomy.
3. **Practical Astronomy for Engineering Students.** (1) II. Mr. Leonard, Mr. Herrick
An observing period, 7:15-10 P.M., will occasionally be substituted for the regular class period. Prerequisite: Engineering 1FA and credit or registration in Engineering 1FB.
A course for civil-engineering students. The principles of practical astronomy and spherical trigonometry as they relate to the needs of such students; solution of the fundamental problems of practical astronomy; use of the *Almanac*; and computing.

4. Spherical Astronomy. (3) I or II.

Mr. Leonard

Prerequisite: plane trigonometry.

The celestial sphere and its coordinate systems; the fundamental problems of practical astronomy; spherical trigonometry and its astronomical applications. Required of students preparing to major in astronomy.

7. General Astronomy. (3) I or II.

Mr. Leonard

Prerequisite: open only to students majoring or preparing to major in a physical science or mathematics, and to others with similar prerequisites who have credit for plane trigonometry.

A survey of the whole field of astronomy. Required of students preparing to major in astronomy. Course 2 may be elected for observational and laboratory work in connection with this course. Students who have credit for course 1 will receive only $1\frac{1}{2}$ units of credit for course 7.

***12. Celestial Navigation. (3) I or II.**

Mr. Herrick

Lectures, three hours; laboratory, one hour.

The determination of the line of position and the solution of allied problems of celestial navigation, both at sea and in the air; the use of the *Air Almanac*, the *Nautical Almanac*, *H. O. 214*, other modern tables and graphs, and the marine and bubble sextants; and the identification of the naked-eye stars and planets.

UPPER DIVISION COURSES

Lower division courses in astronomy are not prerequisite to upper division courses unless specified.

***100. The Development of Astronomical Thought. (3) I.**

Mr. Herrick

Prerequisite: a college course in astronomy or physics. This course is designed especially for students whose major subject is philosophy or a social science.

Astronomical and related science: its historical development, utilization of the scientific method, and effect upon the thought of certain periods.

101. Advanced General Astronomy. (3) II.

Mr. Leonard

Prerequisite: course 7 or its equivalent.

Selected topics, supplemental to the material of course 7, developed and discussed in detail.

***102. Stellar Astronomy. (3) I.**

Mr. Leonard

Prerequisite: course 7 or 101 or 117A.

A review of stellar astronomy, with special emphasis on the results of modern researches.

***104. Practical Astronomy. (3) I.**

Mr. Leonard, Mr. Herrick

Prerequisite: Astronomy 4, Physics 1D or 2B, and Mathematics 3B.

107. The Reduction of Observations. (3) II.

Mr. Leonard, Mr. Herrick

Prerequisite: Mathematics 3B-4A.

Analytical, arithmetical, and graphical methods employed in the handling of numerical and observational data, including the theory of errors and least squares, and its application to the solution of astronomical, physical, chemical, and engineering problems.

* Not to be given, 1946-1947.

108. Numerical Analysis. (3) I.

Mr. Herrick

Prerequisite: Mathematics 3B-4A.

The more serviceable formulae of interpolation and their application in the use of astronomical, physical, chemical, and engineering tables; development of the formulae of numerical differentiation and integration and their employment in the construction of tables; practice in making extensive calculations, with special aim at accuracy and speed.

112. Rocket Navigation. (3) I.

Mr. Herrick

Prerequisite: Mathematics 3B-4A.

The astronomical aspects of the rocket problem: mechanics, position determination, and control.

115. The Determination of Orbits. (3) II.

Mr. Herrick

Prerequisite: Mathematics 3B-4A.

The theory and calculation of preliminary orbits and ephemerides of comets and minor planets.

117A-117B. Astrophysics. (3-3) Yr.

Mr. Kaplan, ———

A laboratory period will occasionally be substituted, by appointment, for one of the regular class periods. Open to students whose major subject is a physical science or mathematics. This course is acceptable in partial fulfillment of the requirements for the major in physics.

A review of spectroscopy and astronomical physics, with special emphasis, during the first semester, on the solar system.

118. Meteoritics. (3) II.

Mr. Leonard

Open to students whose major subject is a physical science or mathematics.

The science of meteorites and meteors.

199. Special Studies in Astronomy or Astrophysics. (1 to 4) I, II.

The Staff (Mr. Leonard in charge)

Prerequisite: the instructor's consent. Sec. 2, "Special Studies in Astrophysics," is acceptable in partial fulfillment of the requirements for the major in physics.

Investigation of special problems or presentation of selected topics chosen in accordance with the preparation and the requirements of the individual student.

BACTERIOLOGY

ANTHONY J. SALLE, Ph.D., Associate Professor of Bacteriology (Chairman of the Department).

MERIDIAN RUTH BALL, Sc.D., Assistant Professor of Bacteriology.

GREGORY J. JANN, Ph.D., Instructor in Bacteriology.

GORDON H. BALL, Ph.D., Professor of Zoölogy.

ORDA A. PLUNKETT, Ph.D., Associate Professor of Botany.

ORREN LLOYD-JONES, M.D., Lecturer in Public Health Nursing.

COLLEGE OF LETTERS AND SCIENCE

Letters and Science List.—All undergraduate courses in bacteriology are included in the Letters and Science List of Courses. For regulations governing this list, see page 65.

Preparation for the Major.—Bacteriology 1, Chemistry 1A-1B, Zoölogy 15, Physics 2A-2B, French or German. Recommended: Chemistry 6A, 8; Zoölogy 4.

The Major.—Bacteriology 103, either 105 or 106, 106C; also 16 units of upper division work in related subjects, these to be selected from the following series: Bacteriology-104, 105, 106, 106C, 107; Public Health 101A, 101B, 163A, 164A; Botany 105A, 119, 126, 127, 191A, 191B; Zoölogy 101, 105, 106, 107, 107C, 111, 111C, 111H, 118; Chemistry 107, 107B, 108, 109A, 109B; Home Economics 59; Soil Science 110. Courses are to be chosen with the approval of the department.

Curriculum for Medical Technicians.—For details, see page 69.

Laboratory Fees.—Course 1, \$14.50; 103, \$17.50; 105, \$11.50; 106C, \$14.50; 107, \$8; 199A, 199B, \$9. Fee for course 104 to be announced.

LOWER DIVISION COURSES

1. Fundamental Bacteriology. (4) I, II.

———, Mr. Salle

Prerequisite: Chemistry 1A. Students who have credit for course 6 will receive only three units for course 1. Fee, \$14.50.

Early history of bacteriology; effects of physical and chemical agencies upon bacteria; biochemical activities of bacteria; the bacteriology of the air, water, soil, milk and dairy products, other foods; industrial applications. The laboratory exercises include an introduction to bacteriological technique.

6. General Bacteriology. (2) I.

Students who have credit for course 1 will receive only one unit for course 6.

A cultural course for nontechnical students.

UPPER DIVISION COURSES

103. Advanced Bacteriology. (4) I.

Prerequisite: course 1. Fee, \$17.50.

The more advanced principles of the life activities, growth, and morphology of bacteria. The etiology of disease.

104. **Soil Bacteriology.** (2) II. Mr. Jann
Prerequisite: course 1. Fee to be announced.
The microscopic flora of soil: the morphology, function, and metabolism of soil bacteria.
105. **Serology.** (4) I, II. Mrs. Ball
Lecture, one hour; laboratory, nine hours. Prerequisite: course 103. Limited to sixteen students per section. Fee, \$11.50.
The theory and practice of serological methods.
106. **Metabolism of Bacteria.** (2) I. Mr. Salle
Lectures and discussions. Prerequisite: course 1 and Chemistry 8.
Chemical studies of fats, carbohydrates, proteins, and nucleic acids of bacteria; nutrition of bacteria; effect of vitamins on their growth; enzymes of bacteria and their reactions; respiration; respiratory enzymes; coenzymes; anaerobiosis; putrefactions; protein sparing action; fermentations; bacterial photosynthesis; bacterial metabolic methods.
- *106C. **Metabolism of Bacteria Laboratory.** (2) II. Mr. Salle
Prerequisite or concurrent: course 106. Fee, \$14.50.
- *107. **Public Health Bacteriology.** (4) I. Mrs. Ball
Lecture, one hour; laboratory, nine hours. Prerequisite: course 103. Designed for students who plan careers in the fields of public health and clinical bacteriology. Fee, \$8.
A study of diagnostic procedures.
195. **Proseminar.** (2) I, II. ———, Mr. Salle
Prerequisite: course 103.
Library problems.
- 199A-199B. **Problems in Bacteriology.** (2-2) Yr. ———, Mr. Salle, Mrs. Ball
Prerequisite: the consent of the instructor. Fee, \$9 a semester.

MICROBIOLOGY

GRADUATE COURSES

210. **Advanced Bacterial Physiology.** (3) I. Mr. Salle
Prerequisite: Bacteriology 106.
Physiological activities of microorganisms in the light of more advanced principles.
- *251A-251B. **Seminar in Microbiology.** (2-2) Yr. ———, Mr. Ball, Mr. Plunkett
- 293A-293B. **Research in Microbiology.** (2-5; 2-5) Yr. ———, Mr. Ball, Mr. Salle

* Not to be given, 1946-1947.

BOTANY

A Division of the Department of Agriculture

CARL C. EPLING, Ph.D., Professor of Botany and Curator of the Herbarium.

OLENUS L. SPONSLEB, Ph.D., Professor of Botany.

ARTHUR W. HAUPT, Ph.D., Associate Professor of Botany.

ORDA A. PLUNKETT, Ph.D., Associate Professor of Botany.

FLORA MURRAY SCOTT, Ph.D., Associate Professor of Botany and Assistant Director of the Botanical Garden (Head of the Division).

FREDERICK T. ADDICOTT, Ph.D., Assistant Professor of Botany.

F. HARLAN LEWIS, Ph.D., Instructor in Botany.

Preparation for the Major.—Botany 1A-1B, 6 and 7, Chemistry 1A-1B, German 1, 2. In addition to these courses, certain phases of botanical work require Geology 3, 5, Physics 2A-2B, Bacteriology 1, and Zoölogy 1, 2.

The Major.—Seventeen units of upper division botany, including courses 105A-105B and 106A-106B; and in addition, 7 units in botany or related courses—bacteriology, chemistry, geology, paleontology, and zoölogy—to be chosen with the approval of the division.

Laboratory Fees.—Course 7, \$3.50; 6, 111, 113, 126, \$2.50.

LOWER DIVISION COURSES

1A. General Botany. (4) I, II.

Miss Scott, Mr. Addicott

Lectures, two hours; laboratory, four hours. No prerequisite. Biology 1 is recommended.

An introduction to the structure, functions, and environmental relations of the seed plants.

1B. General Botany. (4) II.

Mr. Haupt, Mr. Plunkett

Lectures, two hours; laboratory, four hours. Prerequisite: course 1A.

The evolution of the plant kingdom, dealing with the comparative morphology of all the great plant groups.

6. Plant Anatomy. (3) I

Miss Scott

Lecture, one hour; laboratory, six hours. Fee, \$2.50.

The microscopic structure of the higher plants with particular reference to the development and differentiation of vegetative tissues.

7. Plant Physiology. (4) II

Mr. Addicott

Lecture, two hours; laboratory, six hours. Prerequisite: course 6, and college chemistry. Fee, \$3.50.

Experimental work designed to demonstrate various activities of the plant.

UPPER DIVISION COURSES

Botany 1A, 1B are prerequisite to all upper division courses, except 103 and 152.

103. Botany of Economic Plants. (2) I.

Miss Scott

Designed for students of economics, geography, agriculture, and botany. Biology 1 is recommended.

The general morphology, classification, ecology and geographic distribution, origin, and uses of economic plants.

- 105A. Algae and Bryophytes. (4) I.** Mr. Haupt
Lectures, two hours; laboratory, six hours.
A study of the structure, development, and phylogenetic relationships of the principal orders of fresh water and marine algae, and of liverworts and mosses.
- 105B. Morphology of Vascular Plants. (4) II.** Mr. Haupt
Lectures, two hours; laboratory, six hours.
Structure, development, and phylogenetic relationships of the principal groups of pteridophytes and spermatophytes.
- 106A-106B. Angiosperms. (3-3) Yr.** Mr. Lewis, Mr. Epling
Lecture, one hour; laboratory, six hours, and additional field work to be arranged. Designed for botany majors, teachers of nature study, and students in the College of Agriculture.
A survey of the chief orders and families of the flowering plants involving a study of their gross structure, phylogenetic classification, and geographical distribution.
- *111. Plant Cytology. (3) II.** Miss Scott
Lecture, one hour; laboratory, six hours. Prerequisite: courses 6, and 105A or 105B. Fee, \$2.50.
Structure and physiology of the cell.
- 113. Physiological Plant Anatomy. (3) II.** Miss Scott
Lecture, one hour; laboratory, six hours. Prerequisite: courses 6 and 7. Fee, \$2.50.
A study of the tissues of the higher plants in relation to function; a survey of the visible structural and reserve materials of the plant body.
- 119. Mycology. (3) I.** Mr. Plunkett
Lecture, one hour; laboratory, six hours. For students in botany, bacteriology, agriculture, and forestry. Fee to be announced.
Structure, development, and classifications of the important genera and species of fungi.
- 126. Medical Mycology. (4) II.** Mr. Plunkett
Lecture, two hours; laboratory, six hours. Prerequisite: course 119 and Bacteriology 1. This course is designed for students in bacteriology, parasitology, and medicine. Fee, \$2.50.
An introduction to the morphology, physiology, and taxonomy of the fungi which cause disease in man and the domestic animals.
- 152. Plant Geography. (2) I.** Mr. Plunkett
Lecture, two hours.
Character, distribution, and environmental relations of the principal vegetable regions of the world.
- *153A-153B. Advanced Systematic Botany. (2-2) Yr.** Mr. Epling
Prerequisite: course 106A-106B.
A systematic survey of the flowering plants by a comparison of the two principal schemes of relationship; origin of the group and concept of speciation.

* Not to be given, 1946-1947.

190. **Research Methods in Morphology.** (2) I. Mr. Addicott
 Laboratory and conferences, six hours. Prerequisite: the consent of the
 instructor. Fee, \$3.50.

Practical introduction to methods of preparing plant tissues and materials for microscopic study.

191A-191B. **Molecular Structure of Biological Materials.** (2-2) Yr.

Mr. Sponsler

Prerequisite: senior standing, or the consent of the instructor; Physics 2A-2B, Chemistry 8, and Botany 1A-1B or Zoölogy 1, 2, and in addition advanced courses in biological fields.

An adaptation of our knowledge of atomic and molecular structure to biological concepts of protoplasm and cell parts.

199A-199B. **Problems in Botany.** (2-2) Yr.

The Staff

Prerequisite: senior standing.

GRADUATE COURSES

252A-252B. **Seminar in Principles and Theories of Botany.** (2-2) Yr.

Mr. Sponsler

253A-253B. **Seminar in Special Fields of Botany.** (1-1) Yr.

The Staff

278A-278B. **Research in Botany.** (2-6; 2-6) Yr.

The Staff

RELATED COURSES IN ANOTHER DEPARTMENT (See page 229)

Biology 1. **Fundamentals of Biology.** (3) I, II.

Mr. Haupt, Miss Scott

BUSINESS ADMINISTRATION

- RALPH CASSADY, JR., Ph.D., Professor of Marketing.
 IRA N. FRISBEE, M.B.A., C.P.A., Professor of Accounting.
 HOWARD SCOTT NOBLE, M.B.A., C.P.A., Professor of Accounting (Chairman of the Department).
 * FLOYD F. BURTOCHETT, Ph.D., Associate Professor of Banking and Finance.
 JOHN C. CLENDENIN, Ph.D., Associate Professor of Banking and Finance.
 WILBERT E. KARRENBROOK, Ph.D., Associate Professor of Accounting.
 SAMUEL J. WANOUS, Ph.D., Associate Professor of Office Management and Business Education.
 WILLIAM F. BROWN, Ph.D., Assistant Professor of Marketing.
 A. GERHARD EGER, LL.B., Assistant Professor of Business Law.
 WAYNE L. MCNAUGHTON, Ph.D., Assistant Professor of Management and Industry.
 GEORGE W. ROBBINS, M.B.A., Assistant Professor of Marketing.
 ESTELLA B. PLOUGH, Associate in Commercial Practice.

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- HARRY SIMONS, M.A., C.P.A., Lecturer in Accounting.
 LAWRENCE W. ERICKSON, M.S., Assistant in Office Management.

College of Business Administration

Preparation for the Major.—Business Administration 1A-1B, Economics 1A-1B, English 1A, Public Speaking 1A, Mathematics E, 2, Geography 5A-5B. Other requirements in the lower division will be found on page 84.

The Upper Division.

1. General requirements: (a) in the junior year, courses 115A-115B, 120, 140, 160A, 180, and Economics 135; (b) in the senior year, course 100.
2. Special elective: 3 units chosen from the following: courses 110, 116, 117, 132 (except for finance majors), 145, 150, 154; Economics 131A-131B, 150, 170, 171, 173.
3. Nine upper division units in one of the following six majors: Accounting, Banking and Finance, Management and Industry, Marketing, Office Management, General Business. (For courses offered in the various majors, see page 86.)
4. (f) and (g), page 86, for requirements concerning electives and minimum scholarship standing.

Electives.—All undergraduate courses in the Letters and Science List (see page 65), will be accepted for credit toward the B.S. degree. A maximum of 6 units of electives aside from the preceding will be accepted for credit toward the degree but will not apply on the outside elective requirement.

College of Letters and Science

Letters and Science List.—Courses 1A-1B, 120, 131, 132, 140, 145, 153, and 180. For regulations governing this list, see page 65.

* In residence spring semester only, 1946-1947.

Graduate Division

Requirements for Admission to Graduate Status.

The general requirements (see paragraph 1 above), or their equivalent, as well as the general University requirements, are prerequisite to admission to regular graduate status in the Department of Business Administration.†

Departmental Requirements for the Master's Degree.

1. At least 6 units of the 24 required for the degree must be taken outside the Department of Business Administration.

2. Twelve units of graduate courses (200 series) are required, 6 of which must be taken in the field of specialization, and the remaining 6 outside the field of specialization and divided between at least two other fields.

3. The Department favors the comprehensive examination plan. For further information concerning graduate work consult the ANNOUNCEMENT OF THE GRADUATE DIVISION, SOUTHERN SECTION, and the ANNOUNCEMENT OF THE COLLEGE OF BUSINESS ADMINISTRATION.

Requirements for Teaching Credentials.

Candidates for the Special Secondary Credential in commerce or for the General Secondary Credential with a major or minor in business education should consult the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION, LOS ANGELES.

Fees.—Courses 3A, 3B, \$2.50; 140, \$3.50.

LOWER DIVISION COURSES

1A-1B. Principles of Accounting. (3-3) Beginning either semester.

Mr. Noble and Staff

Two hours lecture, and two hours laboratory. Prerequisite: sophomore standing.

2A-2B. Accounting Laboratory. (1-1) Beginning either semester.

Should be taken concurrently with course 1A-1B. Mrs. Plough

3A-3B. Secretarial Training. (2-2) Beginning either semester.

Fee, \$2.50 each semester. Mr. Wanous, Mr. Erickson

A study of typewriting in which the groundwork is laid for a thorough understanding of office management and business teaching problems. Principles of operating various kinds of typewriters, special adaptations of each, and bases of speed and accuracy development are included.

4A-4B. Secretarial Training. (3-3) Beginning either semester.

Mr. Wanous, Mrs. Plough, Mr. Erickson

A study of shorthand in which the groundwork is laid for a thorough understanding of office management and business teaching problems. An analysis of various techniques used in mastery of technical vocabularies and speed in writing and reading shorthand from dictation is included.

UPPER DIVISION COURSES

Business Administration 1A-1B and Economics 1A-1B are prerequisite to all upper division courses.

† For exceptions, consult the ANNOUNCEMENT OF THE COLLEGE OF BUSINESS ADMINISTRATION.

‡100. Theory of Business. (2) I, II.

Mr. Cassady, ———

Prerequisite: senior standing. Not open for credit to students who have taken or are taking Economics 100A.

Influence of certain fundamental laws in economics upon the practical processes of production, distribution, and exchange. The competitive process in its imperfect, as well as in its perfect, form. The nature of social and economic forces which modify and direct business policies.

‡110. Real Estate Principles. (3) II.

Mr. Clendenin

Visiting professional and business men give special lectures.

A survey of the business methods, economic problems, and legal background of real estate operation. Topics studied include ownership estates, liens, mortgages, leases, taxes, deeds, escrows, title problems, brokerage, subdivisions, appraisals, and zoning and building ordinances.

115A-115B. Business Law. (3-3) Beginning either semester.

Mr. Eger

Law in its relationship to business. Essentials of the law of contracts, agency, bailments, sales, and negotiable instruments.

‡116. General Laws Relating to Property. (3) I.

Mr. Eger

Prerequisite: course 115A-115B.

Distinctions between real and personal property, types of ownership, methods of acquisition and disposal, separate and community property, title, control and management of community property and liability for debts.

‡117. The Law of Wills, Estates, and Trusts. (3) II.

Mr. Eger

Prerequisite: course 115A-115B.

Succession to property by will and in the absence of will; types, requirements, and revocation of wills; legacies and devices; executors and administrators; probate and administration of estates and special rights of surviving spouse and children; nature, kinds, and formation of trusts; relations between trustees and beneficiary and with third persons, and termination of trusts; corpus and income problems affecting life tenants and remaindermen.

120. Business Organization. (3) I, II.

Mr. Cassady, Mr. Brown

A study of the business unit and its functions from the points of view of both society and management. The coordination of production, finance, marketing, personnel, and accounting in a going business. The relation of the enterprise to the industry in general, to the business cycle, to law and government, and to the public.

‡121A. Industrial Management. (3) I, II.

Mr. McNaughton

Prerequisite: course 120.

A study of the evolution and development of the industrial system. The application of scientific management and scientific methodology. A consideration of modern methods of approach to present-day production problems.

‡121B. Industrial Management. (3) II.

Mr. McNaughton

Prerequisite: course 121A. Classroom discussions and field trips; written reports and class discussions.

The theory and practice of modern factory management.

‡ Open only to students registered in College of Business Administration and to graduate students who have had the necessary preliminary preparation.

†124. Work Simplification and Time Study. (2) II. Mr. McNaughton

Prerequisite: courses 120 and 121A.

The specific procedures used in simplifying, standardizing, and timing manual work. Process and operation analysis, principles of motion economy, micromotion study and film analysis, time standards as a basis for wage payment plans and the calculation of costs, and fatigue study. Motion pictures are used in presenting case material.

†125. Organization and Management Problems. (3) I.

Prerequisite: senior standing.

Mr. McNaughton

A case method study of the practical problems involved in the organization and management of business enterprises. Emphasis is placed upon the correlation of functions and activities in the organization of operating departments.

131. Corporation Finance. (3) I, II. Mr. Clendenin, Mr. Burtchett

Prerequisite: Economics 135.

A study of the financial structures and financial problems of business corporations. The instruments and methods of financing a corporation will be considered in their social, legal, and economic effects as well as in their effects on the corporation and the shareholders.

132. Investments. (3) I.

Prerequisite: Economics 135.

The principles underlying investment analysis and investment policy; the chief characteristics of civil and corporate obligations and stocks. Investment trusts and institutional investors, forms, problems, and policies. Relation of money markets and business cycles to investment practice.

†133. Investment and Financial Analysis. (3) II. Mr. Clendenin

Prerequisite: course 131 or 132; Economics 135.

Examination of specific securities and projects from an investment point of view; sources of information on investment matters; the writing of investment analysis and reports. Examples of financial practices involved in mergers, reorganizations, recapitalization plans, etc. Reading assignments and class discussions will be devoted mainly to actual and recent cases.

†139. Applied Business Finance. (3) II. Mr. Burtchett

Prerequisite: Economics 135.

An intensive study of the financial operations of business; work of the credit department, the comptroller's or treasurer's office; preparation of financial reports for stockholders and for public authorities; credit analysis; credit bureaus and their services; consumer installment contracts and financing; bank relations in general. This course emphasizes the short-term financial problems and practices of all types of business enterprise.

140. Business Statistics. (4) I, II.

Lectures, two hours; laboratory, four hours. Students who have credit for Economics 40 will receive only one unit of credit for this course. Fee, \$3.50.

Sources of statistical data; construction of tables, charts, and graphs; study of statistical methods; averages, measures of deviation, index numbers, secular trend, seasonal variation, correlation; study of business cycles; practical application of statistical methods in business problems.

† Open only to students registered in College of Business Administration and to graduate students who have had the necessary preliminary preparation.

- ‡144. **Business and Statistical Research.** (2) II. Mr. McNaughton
Prerequisite: senior standing.
Research philosophy and methodology and the application of specific research techniques to actual business problems. These problems will be made possible by the cooperation of various concerns in southern California.
145. **Principles of Insurance.** (3) I. Mr. Clendenin
Description of the major types of insurance: life, property, casualty, etc.; interpretation of the contracts under which such insurance is written; regulation and control of insurance companies; general principles of mortality and premium calculation; basic legal principles of property and equity law as involved in the transfer of risks; distribution system of underwriting; organization of the insurance carrier companies.
- ‡150. **Business Correspondence.** (3) I. Mr. Wanous
Prerequisite: course 3A or its equivalent.
Designed to give students an understanding of the service of written communications to business. Training in the writing of communication forms in typical business situations. A review of correct English usage in business writing is included.
- ‡151. **Applied Secretarial Practice.** (3) I. Mr. Wanous
Prerequisite: courses 3A-3B, 4A-4B.
A study of stenographic office problems, including the development of expert skill and ability in transcription. A consideration of the principles underlying the editing of dictated letters and reports and of the requirements and standards of stenographic positions in Civil Service as well as in various types of private offices.
- ‡152. **Secretarial Problems.** (3) II. Mr. Wanous
Prerequisite: course 151.
A study of non-stenographic office problems and their solutions, including those encountered in filing, preparing statistical reports, handling incoming and outgoing correspondence, and proofreading. A study of the rules of conduct affecting all office employees, and development of understanding of various types of office machines.
153. **Personnel Management.** (3) I, II. Mr. McNaughton
A study of the administration of human relations in industry; the development of employment relations; problems and methods of selecting and placing personnel; problems and methods of labor maintenance; the joint control of industry; the criteria of effective personnel management.
- ‡154. **Office Organization and Management.** (3) II. Mr. Wanous
Analysis of functions of various office departments, their organization and management. Methods used in selecting and training office personnel; office planning and layout; selection and care of office supplies and equipment; methods and devices used to improve operating efficiency; types and uses of office appliances; techniques for performing office duties.
- 160A. **Advanced Accounting.** (3) I, II. Mr. Karrenbrock, Mr. Simons
Adjustments, working papers, statements from incomplete data, cash and receivables, inventories, investments, fixed assets, intangibles and deferred charges, liabilities, capital stock and surplus, installment accounting, statement analysis, and application of funds.

‡ Open only to students registered in College of Business Administration and to graduate students who have had the necessary preliminary preparation.

- 160B. Advanced Accounting. (3) I, II.** Mr. Karrenbrock, Mr. Simons
Prerequisite: course 160A.
Partnerships, joint ventures, agencies and branches, consolidated balance sheets, consolidated profit and loss statements, statements of affairs, receiverships, realization and liquidation statements, estates and trusts, and actuarial accounting problems.
- †161. Cost Accounting. (3) I, II.** Mr. Karrenbrock
Prerequisite: course 160A.
Distribution of department store expenses, general factory accounting, process costs, job-lot accounting, foundry accounting, budgets and control of costs, expense distributions, burden analyses, differential costs, by-products and joint-products, and standard costs.
- †162. Auditing. (3) II.** Mr. Frisbee
Prerequisite: course 160B.
Accounting investigations, balance sheet audits, and detailed audits performed by public accountants. Valuation, audit procedure, working papers and audit reports.
- †163. Federal Tax Accounting. (3) I.** Mr. Frisbee
Prerequisite: course 160B.
A study of the current federal revenue acts as relating to individual, partnership, and corporation income taxes, excess profits taxes, estate taxes, and gift taxes.
- †165. Municipal and Governmental Accounting. (3) II.** Mr. Karrenbrock
Prerequisite: course 160B.
A study of fund accounting as applied to governmental accounting and non-profit institutions. It includes problems of budgeting, tax levies, appropriations, and accounting for revenues and expenditures. The following funds are included: general, special revenue, bond sinking, working capital, special assessment, trust and agency, and utility. Special problems on non-profit institutions.
- 180. Elements of Marketing. (3) I, II.** Mr. Cassady, Mr. Robbins
A survey designed to give a basic understanding of the major marketing methods, institutions, and practices. The problems of retailing, wholesaling, choosing channels of distribution, advertising, coöperative marketing, pricing, market analysis, and marketing costs are defined from the standpoint of the consumer, the middleman, and the manufacturer.
- †184. Sales Management. (3) I, II.** Mr. Robbins
Prerequisite: course 180.
An intensive study, principally by the case method, of sales methods from the point of view of the sales manager. Includes the study of merchandising policy, choice of channels of distribution, market research and analysis, prices and credit terms, sales methods and campaigns; organization of sales department, management of sales force, and budgetary control of sales.
- †185. Advertising Principles. (3) I, II.** Mr. Brown
Prerequisite: course 180.
A survey of the field of advertising—its use, production, administration, and economic implications. Includes the study of advertising psychol-

† Open only to students registered in College of Business Administration and to graduate students who have had the necessary preliminary preparation.

ogy, practice in the preparation of advertisements, consideration of the methods of market research and copy testing, and analysis of campaign planning and sales coordination.

†186. **Retail Store Management.** (3) I. Mr. Cassady
Prerequisite: course 180.

A study of retailing methods from the standpoint of the owner and manager. Includes the case study of such subjects as purchasing, planning, stocks, inventory methods, markup, accounting for stock control, pricing, style merchandising, and general management problems.

†199A-199B. **Special Problems in Business Administration.** (3-3) Yr. The Staff

Prerequisite: senior standing, 6 units of upper division courses in business administration, and the consent of the instructor.

GRADUATE COURSES

235. **Money Rates and Money Markets.** (2) I. Mr. Clendenin

254. **Seminar in Finance.** (2) II. Mr. Clendenin

260. **Seminar in Accounting Theory.** (2) I, II. Mr. Noble

261A-261B. **Seminar in Accounting Problems.** (2-2) Yr. Mr. Frisbee

265. **Seminar in Governmental and Institutional Accounting.** (2) II. Mr. Karrenbrock

270. **Seminar in Marketing Institutions.** (2) I. Mr. Cassady

271. **Seminar in Market Price Policies.** (2) II. Mr. Cassady

290. **Problems in Business Administration.** (1 to 4) I, II. The Staff

PROFESSIONAL COURSES IN METHOD

370A. **Methods of Teaching Secretarial Subjects.** (2) I. Mr. Wanous

A survey and evaluation of the methods and materials used in teaching typewriting, shorthand, transcription, and office training to secondary school pupils. Also considered are achievement standards, grading plans, measurement devices, and procedures for adapting instruction to various levels of pupil ability.

370B. **Methods of Teaching Bookkeeping and the General Business Subjects.** (2) II. Mr. Wanous

An analytical study of the devices, methods, and materials used in teaching bookkeeping, junior business training, business arithmetic, business law, commercial geography, and related business subjects. A consideration of course objectives, curricular placement, units of instruction, evaluation measures, and remedial procedures.

*370C. **Methods of Teaching Handwriting.** (2) I. Mrs. Plough

A course in the improvement of handwriting; a survey of methods of teaching handwriting in the secondary schools, including analyses of handwriting difficulties and study of clinical procedures.

*370D. **Methods of Teaching Handwriting.** (2) II. Mrs. Plough

Prerequisite: course 370C.

A course in the improvement of handwriting primarily for teachers of elementary subjects. A survey of methods of teaching penmanship and of relating writing to pupil activities at different levels of development.

* Not to be given, 1946-1947.

† Open only to students registered in College of Business Administration and to graduate students who have had the necessary preliminary preparation.

CHEMISTRY

FRANCIS E. BLACET, Ph.D., Professor of Chemistry.

WILLIAM R. CROWELL, Ph.D., Professor of Chemistry.

MAX S. DUNN, Ph.D., Professor of Chemistry.

JAMES B. RAMSEY, Ph.D., Professor of Chemistry.

G. ROSS ROBERTSON, Ph.D., Professor of Chemistry and Director of the Chemical Laboratories.

WILLIAM G. YOUNG, Ph.D., Professor of Chemistry (Chairman of the Department).

THEODORE A. GEISSMAN, Ph.D., Associate Professor of Chemistry.

THOMAS L. JACOBS, Ph.D., Associate Professor of Chemistry.

JAMES D. MCCULLOUGH, Ph.D., Associate Professor of Chemistry.

HOSMER W. STONE, Ph.D., Associate Professor of Chemistry.

SAUL WINSTEIN, Ph.D., Associate Professor of Chemistry.

CLIFFORD S. GARNER, Ph.D., Assistant Professor of Chemistry.

TOD W. CAMPBELL, Ph.D., Instructor in Chemistry.

LIONEL JOSEPH, Ph.D., Instructor in Chemistry.

H. DARWIN KIRSCHMAN, Ph.D., Lecturer in Chemistry.

Admission to Courses in Chemistry.—Regular and transfer students who have the prerequisites for the various courses are not thereby assured of admission to those courses. The department may deny admission to any course if a grade D was received in a course prerequisite to that course, or if in the opinion of the department the student shows other evidence of inadequate preparation. Evidence of adequate preparation may consist of satisfactory grades in previous work, or in a special examination, or in both. *For each course which involves a limitation of enrollment and which requires a qualifying examination or other special prerequisite, an announcement will be posted before the first day of registration, in each semester, on the Chemistry Department bulletin board.* No regular or transfer student should enroll in any course without first consulting a department adviser who will furnish more specific information regarding limitations in enrollment.

Letters and Science List.—All undergraduate courses in chemistry except 10 are included in the Letters and Science List of Courses. For regulations governing this list, see page 65.

Preparation for the Major.—Required: Chemistry 1A-1B, 6A, Physics 1A, 1C or 2A, 1C or 2A-2B°, trigonometry, Mathematics 1, 3A-3B, 4A, English 1A, English 1B or Public Speaking 1A°, and a reading knowledge of German°. Recommended: an additional course in chemistry.

Students should note that the lower division curriculum prescribed for the College of Chemistry at Berkeley differs from the curriculum leading to the degree of Associate in Arts in the College of Letters and Science at Los Angeles.

* Permission of the department adviser required.

** The equivalent of German, 1, 2, and 3P. German 3P may be completed in the upper division.

The Major.—A limited amount of upper division credit may be allowed for chemistry courses from the group 6A, 6B, 8, and 9, provided such courses were taken by the student while he was in the upper division. Not more than 9 units total of such credit will be counted as upper division units, either for the chemistry major or for other University curricula. The minimum requirement for the major is: Chemistry 6A-6B (6), 8 and 9 (6), 110A-110B (6), 111A-111B (4). The remainder of the 24 required upper division units are to be taken in chemistry, and not less than two courses are to be selected from the following group: courses 101, 103, 107A, 107B, and 121. Not more than 8 of the above total of 24 units may be selected from the group 107A-107B-108. Additional courses in physics and mathematics, including Physics 1B and Mathematics 4B, are recommended.

In order to be eligible for full membership in the American Chemical Society in the minimum time after graduation a chemistry major must fulfill the minimum requirements adopted by the Society for professional training of chemists. Special attention is directed to the fact that at least 6 units of lecture courses and 4 units of laboratory work are required in organic chemistry. Further details of the requirements are obtainable from department advisers.

Laboratory Fees.—These fees cover the cost of material and equipment used by the average careful student. Any excess over this amount will be charged to the individual responsible. The fees are as follows: courses 1A, 1B, \$16; 2A, \$11.50; 6A, 6B, \$19.50; 9, \$31; 10, \$11.50; 101, \$31; 103, 107A, 107B, \$17.50; 108, \$7.50; 111A, 111B, \$14; 121, 199, \$17.50.

LOWER DIVISION COURSES

Certain combinations of courses involve limitations of total credit, as follows: 2A and 1A, 9 units; 2A and 1A-1B, 14 units; 2 and 1A, 7 units; 2 and 1A-1B, 12 units.

1A. General Chemistry. (5) I, II.

Mr. McCullough, Mr. Robertson, Mr. Stone

Lectures, three hours; laboratory and quiz, six hours. Prerequisite: high school chemistry, or high school physics and three years of high school mathematics, or Chemistry 2A. Required in the Colleges of Agriculture, Chemistry, Engineering, and of pre dental, premedical, premining, prepharmacy and preoptometry students; also of majors in applied physics, bacteriology, chemistry, geology and physics and of medical technicians, and of students in home economics (curriculum C) in the College of Applied Arts. Fee, \$16.

A basic course in principles of chemistry with special emphasis on chemical calculations.

1B. General Chemistry. (5) I, II.

Mr. Blacet

Lectures, three hours; laboratory and quiz, six hours. Prerequisite: course 1A. Required in the same curricula as course 1A. Fee, \$16.

Continuation of course 1A with special applications to the theory and technique of qualitative analysis; periodic system; structure of matter.

‡ Limitation of Enrollment—Warning: In view of the possibility that requests by qualified students for enrollment in Chemistry 1A may exceed laboratory capacity, it may become necessary to select applicants on the basis of scholastic ability. Note carefully any circulars of information which may be sent to new students, or bulletins posted on the campus, prior to the beginning of a semester, giving information concerning special qualifying examinations or early enrollment procedures.

2. Introductory General Chemistry. (3) I, II.

Mr. Kirschman

Lectures, three hours. An introductory course emphasizing the principles of chemistry and including a brief introduction to elementary organic chemistry. The course may be taken for credit in physical science by students following curricula not requiring laboratory work in such field of study. Not open for full credit to students who have credit for course 2A.

2A. Introductory General Chemistry. (5) I, II.

Mr. Kirschman

Lectures and quizzes, four hours; laboratory, three hours. This course satisfies the chemistry requirements for nurses as prescribed by the California State Board of Nursing Examiners; it satisfies the chemistry requirements for the majors in physical education and is required of certain home economics majors in the College of Applied Arts. Fee, \$11.50.

An introductory course emphasizing the principles of chemistry and including a brief introduction to elementary organic chemistry. Not open for full credit to students who have credit for course 2.

6A. Quantitative Analysis. (3) I, II.

Mr. Crowell, Mr. Stone

Lectures, discussions, and quizzes, two hours; laboratory, six hours. Prerequisite: course 1A-1B. Required of chemistry majors, economic geologists, petroleum engineers, public health, sanitary and municipal engineers, medical technicians, and of premedical, College of Chemistry, metallurgy, and certain agriculture students. Fee, \$19.50.

Principles and technique involved in fundamental gravimetric and volumetric analyses.

6B. Quantitative Analysis. (3) I, II.

Mr. Crowell

Lectures, discussions, and quizzes, two hours; laboratory, six hours. Prerequisite: course 6A. Required of chemistry majors, economic geologists, and College of Chemistry students. Fee, \$19.50.

A continuation of course 6A but with greater emphasis on theory. Analytical problems in acidimetry and alkalimetry, oxidimetry, electrolytic deposition, and semiquantitative procedures.

8. Organic Chemistry. (3) I, II.

Mr. Geissman, Mr. Robertson, Mr. Young

Prerequisite: course 1A-1B; concurrent enrollment in course 9 is advisable. This course is required of premedical and preidental students, majors in petroleum engineering, sanitary and municipal engineering, chemistry, home economics, public health, some agriculture majors, and College of Chemistry students.

An introductory study of the compounds of carbon, including both aliphatic and aromatic derivatives.

9. Methods of Organic Chemistry. (3) I, II.

Mr. Geissman, Mr. Robertson

Lectures and quizzes on principles of laboratory manipulation, two hours; laboratory, six hours. Prerequisite or concurrent: course 8. Required of chemistry majors, College of Chemistry students, premedical and preidental students, and majors in petroleum engineering. Fee, \$31.

Laboratory work devoted principally to synthesis, partly to analysis.

10. Organic and Food Chemistry. (4) I.

Lectures, three hours; laboratory, three hours. Prerequisite: courses 1A and 1B, or 2A. Arranged primarily for majors in home economics. Fee, \$11.50.

UPPER DIVISION COURSES

Certain combinations of courses carry limitations of total credit, as follows: 109A and 110A, 3 units; 109A-109B and 110A, 4 units; 109A and 110A-110B, 6 units; 109A-109B and 110A-110B, 6 units.

101. Organic Synthesis. (3) I, II. Mr. Jacobs, Mr. Robertson
Lecture, one hour; laboratory, eight hours. Prerequisite: courses 8 and 9 and the ability to read scientific German. Fee, \$31.

Advanced organic preparations; introduction to research methods.

102. Advanced Organic Chemistry. (3) I, II. Mr. Winstein, Mr. Jacobs
Prerequisite: course 8 and laboratory work in organic chemistry.
Condensations; mechanism of reactions; isomerism; alicyclic series, dyes, etc.

103. Qualitative Organic Analysis. (3) I, II. Mr. Young, Mr. Geissman
Lecture, one hour; laboratory, six hours. Prerequisite: courses 6A-6B, 8, and 9. Fee, \$17.50.

Classification, reactions, and identification of organic compounds.

107A. Amino Acids and Proteins. (4) I. Mr. Dunn
Lectures, two hours; laboratory, six hours. Prerequisite: courses 6A, 8, and 9. Fee, \$17.50.

107B. Carbohydrates and Fats. (4) II. Mr. Dunn
Lectures, two hours; laboratory, six hours. Prerequisite: courses 6A, 8, and 9. Fee, \$17.50.

108. General Biochemistry. (4) I. Mr. Dunn
Lectures, three hours; laboratory or demonstrations, three hours. Prerequisite: course 8; recommended, courses 6A, 9. May not be offered by chemistry majors as fulfilling part of the laboratory requirements in organic chemistry. Fee, \$7.50.

***109A-109B. General Physical Chemistry.** (2-2) Yr. Mr. Ramsey
Lectures and demonstrations. Prerequisite: course 6A, Physics 2A-2B, Mathematics 8; recommended preparation, course 8, Mathematics 7. May not be offered as part of the major in chemistry.

Chemical principles of particular importance in the life sciences and geology.

110A. Physical Chemistry. (3) I. Mr. Ramsey
Prerequisite: course 6B; Physics 1A, 1C or 2A, 1C, or 2A-2B*; Mathematics 4A. Required of chemistry majors.

110B. Physical Chemistry. (3) II. Mr. Ramsey
Prerequisite: course 110A and Mathematics 4A. Required of chemistry majors.

A continuation of course 110A.

110G. Physical Chemistry. (3) I. Mr. Ramsey
Prerequisite: same as for course 110A. Open only by permission of the chairman of the department to graduate students who have not taken course 110A in this institution.

* Not to be given, 1946-1947.

* Permission of the department adviser required.

- 110H. Physical Chemistry. (3) II.** Mr. Ramsey
Prerequisite: course 110A or 110G. Open only by permission of the chairman of the department to graduate students who have not taken course 110B in this institution.
- 111A. Physical Chemistry Laboratory. (2) I.** Mr. Ramsey
Laboratory, six hours. Prerequisite or concurrent: course 110A. Required of chemistry majors. Fee, \$14.
Physicochemical problems and measurements.
- 111B. Physical Chemistry Laboratory. (2) II.** Mr. McCullough
Laboratory, six hours. Prerequisite: course 110A; concurrent: course 110B. Required of chemistry majors. Fee, \$14.
A continuation of course 111A.
- 121. Advanced Inorganic Chemistry. (3) I.** Mr. Stone
Lecture, one hour; laboratory, six hours. Prerequisite: course 6B. Fee, \$17.50.
Equilibrium and reaction rate; periodic classification. Laboratory work principally synthetic and analytic, involving special techniques.
- 131. Absorption Spectra and Photochemical Reactions. (2) I.** Mr. Blacet
Prerequisite or concurrent: course 110A.
- 132. X Rays and Crystal Structure. (2) II.** Mr. McCullough
Prerequisite: course 110A.
Symmetry of crystals; use of X rays in the investigation of crystal structure.
- 140. Industrial Chemistry. (2) I.** Mr. Crowell
Prerequisite: course 110A. Problems and discussions.
Industrial stoichiometry; behavior of gases; vaporization and condensation; thermochemistry; weight and heat balance of industrial processes, etc.
- 199. Problems in Chemistry. (3) I, II.**
The Staff (Mr. Robertson in charge)
Prerequisite: junior standing, a good scholastic record, and such special preparation as the problem may demand. Fee, \$17.50.

GRADUATE COURSES

- 203. Chemical Thermodynamics. (3) II.** Mr. Ramsey
- 204. The Chemical Bond and Molecular Structure. (3) II.** Mr. McCullough
- 221. Physical Aspects of Organic Chemistry. (3) I.** Mr. Young, Mr. Winstein
A course stressing mechanism. Electronic interpretations, kinetics and stereochemistry of organic reactions are treated. The emphasis in this course is, some years, on ionic situations and, other years, on free radical reactions.
- 222. A, B*, C* Organic Chemistry. (3) II.** Mr. Geissman, Mr. Jacobs
This course is designed to present advanced topics in organic chemistry. The content varies from year to year so that in three years the graduate student in organic chemistry will have obtained a broad background in the

* Not to be given, 1946-1947.

subject. Among the topics considered are the following: stereochemistry, the Grignard reagent, natural products, aromatic compounds, condensation reaction, and unsaturated compounds.

231. Nuclear Chemistry. (3) I.

Mr. McCullough

Introduction to natural and artificial radioactivity, detection of radiations, methods for the preparation, concentration, isolation, and application of radio-isotopes to chemical problems.

260. Seminar in Chemistry. (1) I, II. The Staff (Mr. Jacobs in charge)

Oral reports by graduate students on important topics for the current literature in their field of chemistry. Each student taking this course must consult the instructor in charge before enrolling, and is expected to present a report.

261. Seminar in Biochemistry. (1) I, II.

Mr. Dunn

280. Research in Chemistry. (3 to 6) I, II. The Staff (Mr. Young in charge)

281. Advanced Research in Chemistry. (3 to 6) I, II.

The Staff (Mr. Young in charge)

CLASSICS

PAUL FRIEDLANDER, Ph.D., Professor of Latin and Greek.

ARTHUR PATCH MCKINLAY, Ph.D., Professor of Latin, Emeritus.

FREDERICK MASON CAREY, Ph.D., Associate Professor of Latin and Greek
(Chairman of the Department of Classics).

HERBERT BENNO HOFFLEIT, Ph.D., Assistant Professor of Latin and Greek.

HELEN FLORENCE CALDWELL, M.A., Associate in Classics.

Letters and Science List.—All undergraduate courses in Classics are included in the Letters and Science List of Courses. For regulations governing this list, see page 65.

The student may take the major in Classics either in Latin or in Greek.

Preparation for the Major.

A. *Latin.*—Required: four years of high school Latin, or two years of high school Latin and courses 2 and 3; courses 5A-5B, 9A, 9B. Recommended: English, French, German, Greek, Italian, Spanish.

B. *Greek.*—Required: either course 1-2 or two years of high school Greek; and 4A or 4B or any 2 units of 100A-B-C-D (which may be taken concurrently with courses 101 and 102). Recommended: English, French, German, Italian, Latin, Spanish.

The Major.

A. *Latin.*—Courses 102, 115, 146, 154, 157, 191, plus 6 units of upper division courses in Latin, English, French, German, Greek, Italian, Spanish, philosophy, ancient or medieval history, to be chosen with the approval of the department. (Latin 165A-B-C-D is required of students preparing for a teaching credential.)

B. *Greek.*—Courses 100A-B-C-D, 101, 102, 103, 104, 105, 114, plus 6 units of upper division courses in Latin, English, French, German, Italian, Spanish, philosophy, ancient or medieval history, to be chosen with the approval of the department.

Requirements for Admission to Graduate Courses.

A candidate for admission to graduate courses in Latin or in Greek must meet, in addition to the general University requirements, the minimum requirements for an undergraduate major in Latin or Greek. If the candidate is deficient in this prerequisite he must fulfill it by undergraduate work which is not counted toward his graduate residence.

Requirements for Admission to Candidacy for the Master's Degree in Latin.

1. A reading knowledge of French or German.
2. Completion of Greek 101.
3. Completion of Classics 200.
4. An elementary comprehensive examination in Latin literature, Roman history, and Latin composition. The composition requirements may be met by passing Latin 165A-B-C-D with an average grade of B or better.

Requirements for Admission to Candidacy for the Master's Degree in Greek.

1. A reading knowledge of French or German.
2. Completion of Latin 5A or Latin 5B.
3. Completion of Classics 200.
4. A comprehensive examination in Greek literature, Greek history, and

Greek composition. The composition requirements may be met by passing Greek 100A-B-C-D with an average grade of B or better.

Requirement for Master's Degree.

For the general requirements see page 111. The department favors the Comprehensive Examination Plan.

The following courses in the department do not require a knowledge of Greek or Latin:

Latin 40, 42A-42B, 180A-180B.

Greek 40, 42A-42B, 180A-180B.

CLASSICS

GRADUATE COURSE

200. History of Classical Scholarship, Bibliography, and Methodology.

(3) I.

Mr. Carey and the Staff

Required of all candidates for the M.A. degree in Latin.

LATIN

LOWEE DIVISION COURSES

1. Beginning Latin. (4) I, II.

Mr. Hoffleit

2. Latin Readings. (4) I, II.

Miss Caldwell

Prerequisite: course 1 or two years of high school Latin.

GA. Latin Prose Composition. (1) I, II.

Miss Caldwell

Intended primarily for students entering with two years of high school Latin taken at least two years before matriculation in the University.

GB. Latin Prose Composition. (1) II.

Prerequisite: course 2 or GA, or two or three years of high school Latin.

3. Vergil. (4) I, II.

Miss Caldwell

Prerequisite: course 2, or two or three years of high school Latin. Designed for students who have not studied Vergil in the high school.

5A. A Survey of Latin Literature. (3) I.

Miss Caldwell

Prerequisite: course 3 or four years of high school Latin.

5B. A Survey of Latin Literature. (3) II.

Miss Caldwell

Prerequisite: course 5A.

9A-9B. Latin Prose Composition. (2-2) Yr.

Miss Caldwell

Prerequisite: course 3 or three years of high school Latin.

40. The Latin Element in English. (2) II.

Mr. Friedlander

For students who are interested in the many groups of English words which are derived from the Latin. A knowledge of Latin is not required.

42A-42B. Roman Civilization. (2-2) Yr.

Mr. Friedlander

Knowledge of Latin not required.

This course will undertake to appraise the accomplishments of Rome and acquaint the student with her significant personalities.

UPPER DIVISION COURSES

102. **Silver Latin.** (3) I. Mr. Hoffleit
Prerequisite: courses 5A, 5B.
115. **Ovid: Carmina Amatoria and Metamorphoses.** (3) I. Mr. Carey
Prerequisite: course 102.
- †146. **Lucretius: Selections; Vergil: Eclogues and Georgics.** (3) II. Mr. Friedlander
Prerequisite: course 102.
154. **Tacitus: Annals.** (3) II. Mr. Carey
Prerequisite: course 102.
157. **Roman Satire.** (3) II. Mr. Carey
Prerequisite: course 102.
- ‡185A-185B. **Latin Composition.** (1-1) Yr. Mr. Carey
Prerequisite: course 9A-9B.
Ciceronian prose.
- 165C-165D. **Latin Composition.** (1-1) Yr. Mr. Carey
Prerequisite: courses GA, GB.
Ciceronian prose.
- *180A-180B. **A Survey of Latin Literature in English.** (2-2) Yr.
This course does not count on the major in Latin. Mr. Carey
A study of the literature of Rome from Ennius to Apuleius with reading
in English.
- †191. **Cicero: Selections.** (3) I. Mr. Friedlander
Prerequisite: courses 102, 154.
- 199A-199B. **Special Studies in Latin.** (1-4; 1-4) Yr. Mr. Carey and the Staff
Prerequisite: senior standing and at least 12 units of upper division Latin.

GRADUATE COURSES

- *202. **Cicero's Philosophical Works.** (3) I. Mr. Friedlander
- *203. **Roman Historians.** (3) II. Mr. Friedlander
204. **Roman Prose Writers.** (3) I. Mr. Friedlander
Cicero's moral and political essays.
206. **The Roman Epic.** (3) II. Mr. Hoffleit
The Roman epic from Ennius to Silius Italicus.
- *208. **Livy.** (3) I. Mr. Hoffleit
- *210. **Vergil's Aeneid.** (3) I. Mr. Hoffleit
- *211. **Cicero's Rhetorical Works.** (3) II. Mr. Friedlander

† Not to be given, 1946-1947; to be given, 1947-1948.

** Not to be given, 1946-1947. Latin 180A-180B is ordinarily given in alternation with Greek 180A-180B.

* Not to be given, 1946-1947.

- *253. Seminar in Latin Studies. (3) II. Mr. Carey
Textual criticism.
- *254A-254B. Seminar in Latin Studies. (3-3) Yr. Mr. Carey
Latin comedy.
255. Seminar in Latin Studies. (3) II. Mr. Carey
Roman elegy.
- *256. Seminar: Ovid. (3) II. Mr. Carey

PROFESSIONAL COURSE IN METHOD

- *370. The Teaching of Latin. (3) I. _____
Prerequisite: a foreign language minor.

GREEK

LOWER DIVISION COURSES

- 1-2. Greek for Beginners, Attic Prose. (4-4) Yr. Miss Caldwell
- 4A-4B. Readings in Greek. (2-2) Yr. Mr. Hoffleit
40. The Greek Element in English. (2) I. Mr. Friedlander
For science majors and others interested in an understanding of the terms they meet. A knowledge of Greek is not required.
- ‡42A-42B. Greek Civilization. (2-2) Yr. Mr. Friedlander
Does not count on the major in Greek.
A study of the development of Greek culture and its influence upon the modern world.

UPPER DIVISION COURSES

- ‡100A-100B. Prose Composition. (1-1) Yr. Mr. Hoffleit, Mr. Carey
Prerequisite: course 1-2.
- 100C-100D. Prose Composition. (1-1) Yr. Mr. Carey, Mr. Hoffleit
Prerequisite: course 1-2.
101. Homer: *Odyssey*; Herodotus: Selections. (3) I. Mr. Friedlander
Prerequisite: course 1-2.
102. Plato: *Apology* and *Crito*; Lyric Poets. (3) II. Mr. Carey
Prerequisite: course 101.
- *103. Greek Drama: Euripides and Aristophanes. (3) II. Mr. Carey
Prerequisite: courses 101, 102.
104. Historical Prose: Herodotus and Thucydides. (3) I. Mr. Hoffleit
Prerequisite: courses 101, 102.
105. Greek Drama: Aeschylus and Sophocles. (3) II. Mr. Friedlander
Prerequisite: courses 101, 102.
- *114. Plato: *Republic*. (3) I. Mr. Carey
Prerequisite: courses 101, 102.

* Not to be given, 1946-1947.

‡ Not to be given, 1946-1947; to be given, 1947-1948.

* Not to be given, 1946-1947. Courses 103 and 114 are ordinarily given in alternation with courses 104 and 105, respectively.

- *117A-117B. Greek New Testament. (2-2) Yr.** Mr. Hoffleit
- 180A-180B. A Survey of Greek Literature in English. (2-2) Yr.**
 This course does not count on the major in Greek. Mr. Carey
 A study of the literature of Greece from Homer to Lucian with reading
 in English.
- 199A-199B. Special Studies in Greek. (1-4; 1-4) Yr.** Mr. Carey and the Staff
 Prerequisite: senior standing and at least 12 units of upper division Greek.
 Problems in classical philology.

GRADUATE COURSES

- 201A. Homer: The Iliad. (3) II.** Mr. Friedlander
- *201B. Homer: The Odyssey. (3) II.** Mr. Friedlander
- 202. Sophocles. (3) I.** Mr. Hoffleit
- 203. Thucydides. (3) II.** Mr. Carey

RELATED COURSES IN OTHER DEPARTMENTS

- History 111A. Greek History to the Roman Conquest. (3) I.** Mr. Howard
- History 111B. Roman History to the Accession of Augustus. (3) II.** ———
- History 111C. The Roman Empire from Augustus to Constantine. (3) I.** ———
- Philosophy 152. Plato and His Predecessors. (3) I.** Mr. Friedlander
- Philosophy 153. Aristotle and Later Greek Philosophy. (3) II.** Mr. Friedlander

* Not to be given, 1946-1947.

ECONOMICS

BENJAMIN M. ANDERSON, Ph.D., Professor of Economics.

PAUL A. DODD, Ph.D., Professor of Economics.

¹ EARL JOYCE MILLER, Ph.D., Professor of Economics.

DUDLEY F. PEGRUM, Ph.D., Professor of Economics.

GORDON S. WATKINS, Ph.D., LL.D., Professor of Economics.

MAEVEL M. STOCKWELL, Ph.D., Associate Professor of Economics (Chairman of the Department).

STEPHEN ENKE, Ph.D., Assistant Professor of Economics.

WARREN C. SCOVILLE, Ph.D., Assistant Professor of Economics.

WILLIAM J. J. SMITH, A.B., Lecturer in Economics.

Letters and Science List.—All undergraduate courses in economics are included in the Letters and Science List of Courses. For regulations governing this list, see page 65.

Preparation for the Major.—Required: Economics 10, 11, 1A-1B, 40, and Business Administration 1A. Economics 40 may be taken in lower or upper division. Economics 142 or Statistics 131A may be substituted for Economics 40.

The Major.—Twenty-four upper division units including either Economics 100A, 103 or 138. A maximum of 6 units may be offered toward the major from Business Administration 131, 132, 145, 153, 160A-160B, and 180; or 6 upper division units in sociology; or Agricultural Economics 101A and 104. The 6 units must be in one department.

Students planning to take graduate work are advised to study mathematics. Mathematics 2 or 7 is recommended as a minimum preparation.

No more than 30 upper division units in Economics, Business Administration, and Agricultural Economics may be counted toward the bachelor's degree.

Upper Division Requirements.—Admission to all upper division courses requires upper division standing and completion of course prerequisites. Only in exceptional cases may this rule be waived. The department's courses are grouped into several fields in each of which the first course named below is the introductory course. In addition to completing either Economics 100A, 103, or 138, each major must take the introductory course in four other fields. Each major also must take two additional semester courses in either theory or in one of the four other fields he selects. The several fields and courses grouped therein are as follows:

Economic Theory: 100A, 100B, 103, 138.

Economic Institutions: 108, 107, 106.

Public Finance: 131A-131B, 133.

Money and Banking: 135, 136A-136B.

Statistics: 142, 102.

Labor Economics: 150, 152, 155, 156, 158.

Government and Industry: 170, 171, 173.

International Economics: 190, 195, 197.

Unclassified: 151, 176, 177, 101.

¹ In residence first semester only, 1946-1947.

Civil Service.—Students planning to take civil service examinations for positions as economists should study economic theory (Economics 100A and 138) and money and banking (Economics 135); they should emphasize two major fields as above indicated and should take courses in public administration and constitutional law. Departmental advisers should be consulted.

Majors Other than Economics.—Students with majors other than economics who wish training in economics for professional careers are advised to take course 101, and such other courses as may be in the field of their special interest and are recommended by a departmental adviser.

General Secondary and Special Secondary Credentials.—Students planning to undertake work leading to the General Secondary Credential in Business Education or with Social Science Field Major, or the Special Secondary Credential in Business Education, should consult the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION (Los Angeles).

Laboratory Fee.—Economics 40, \$2.50.

LOWER DIVISION COURSES

1A-1B. Principles of Economics. (3-3) Yr. Beginning either semester.

Mr. Miller, Mr. Stockwell, Mr. Scoville, _____

Lectures, two hours; quiz, one hour. Open only to sophomores. Prerequisite for economics majors: Economics 10 and 11.

10. Evolution of Economic Institutions in Europe. (3) II. Mr. Scoville

Comparative evaluation of the rise of large scale capitalistic industry in different countries, analysis of economic and institutional changes.

11. Evolution of Economic Institutions in America. (3) I. Mr. Scoville

Rise of large scale, capitalistic methods of production, influence of technology, prices, politics, ideologies and wars.

40. Economic and Social Statistics. (3) I, II.

Lectures, two hours; laboratory, one two-hour period. Statistics 131A or Economics 142 may be substituted for this course in meeting the requirements for the major in Economics. Prerequisite: high school algebra. Fee, \$2.50.

An introduction to the handling of economic data. Graphical presentation; averages, dispersion, and skewness; elementary sampling; secular trend, seasonal variation, and time series analysis; simple linear correlation.

UPPER DIVISION COURSES

Courses 1A-1B or 101 are prerequisite to all upper division courses in economics.

100A. General Economic Theory. (3) I, II. Mr. Enke, Mr. Smith

Modern theories of price determination and evolution of ideas concerning wages, rent, and interest.

100B. Value and Distribution. (2) II. _____

Study of the principles of value and distribution under competition, monopoly, and monopolistic competition.

- 101. Principles of Economics. (3) I, II.** Mr. Scoville, Mr. Smith
Not open to majors in economics nor to those who have taken course 1A-1B. This course serves as prerequisite for all upper division courses in economics.
Principles of economics with application to current problems.
- *102. Mathematical Economics. (2)** _____
Prerequisite: either differential calculus or Mathematics 7.
Demand, supply, cost, and prices under conditions of competition and monopoly; general equilibrium.
- 103. Development of Economic Theory. (3) II.** Mr. Watkins
A study of economic theory by emphasis on historical development of theory of value, production, distribution, population, etc.
- 106. The History of Utopian Thought. (2) II.** Mr. Watkins
A study of the Utopias that have influenced economic thought from Plato's *Republic* to H. G. Wells' *Modern Utopia*.
- 107. Comparative Economic Systems. (2) I.** Mr. Watkins
- 108. Development of Economic Institutions. (3) I.** Mr. Scoville
Development of institutions characteristic of a capitalistic economy; evolution of concepts of private property, individual enterprise, and competition. Critical survey of theories of economic progress.
- 131A-131B. Public Finance. (2-2) Yr.** Mr. Stockwell
Public expenditures. Property, income, corporation, inheritance, sales taxes, and other sources of revenue. Public borrowing. Budgetary procedure.
- 133. Federal Finance. (3) II.** _____
A study of the federal budget, federal expenditures, national defense, and financing of federal projects such as R.F.C., A.A.A., and public works.
- 135. Money and Banking. (3) I, II.** Mr. Anderson, Mr. Clendenin
The principles and history of money and banking, with principal reference to the experience and problems of the United States.
- 136A-136B. Monetary and Financial History. (3-3) Yr.** Mr. Anderson
Prerequisite: course 135.
Monetary and financial history of the United States and leading foreign countries.
- 138. Business Cycles. (3) I.** Mr. Smith
The measurement, causes, and possible control of economic fluctuations.
- 142. Quantitative Economics. (3) I.** _____
Prerequisite: course 40, or the equivalent.
A continuation of Economics 40. Further work in correlation and sampling. Price and quantity indices. Chi Square test. Measurement of inequality and national output. Statistical bibliography and methodology.
Designed primarily for the student who may later be employed as an economic statistician with government or industry.
- 150. Labor Economics. (3) I, II.** _____
The problems of labor; the rise of modern industrialism; the principal causes of industrial strife, and the basis of industrial peace.

* Not to be given, 1946-1947.

151. **Economics of Consumption.** (3) II. Mr. Dodd
Theory of consumption and consumer demand; standards of living; family budgets. Survey of efforts to improve the position of the consumer.
152. **Social Insurance.** (3) I. Mr. Dodd
Basis of the Social Security program; unemployment insurance, workmen's compensation, old age pensions, insurance against sickness.
155. **History and Problems of the Labor Movement.** (2) I. Mr. Watkins
The development of the American labor movement; the structure of unionism; demands and accomplishments of labor. The contemporary movement.
156. **Labor Law and Legislation.** (3) I. _____
The law regulating industrial relationships; the legal status of unions and concerted activities under federal and state laws; wage-hour, anti-strike, and other labor legislation.
158. **Industrial Relations.** (3) I. Mr. Dodd
Employer-employee relations; industrial arbitration; mediation; wage contracts; wage determination; state and federal administration; union management and control.
170. **Economics of Industrial Control.** (3) I. Mr. Pegrum
The economic functions of business organizations; the economics of industrial production and pricing; the control of competitive enterprise, combinations and monopolies and their control; governmental regulation and economic planning.
171. **Public Utilities.** (3) II. Mr. Pegrum
The economics of public service corporations; the economic problems of regulation; state and national problems arising from the development of public utilities; public ownership.
173. **Economics of Transportation.** (3) II. Mr. Pegrum
A general historical and contemporaneous survey of transportation agencies in the United States; the functions of the different transportation agencies; rate structures; problems of state and federal regulation; co-ordination of facilities. The current transportation problem.
176. **Postwar Financial Reconstruction.** (2) I. Mr. Anderson
177. **Postwar Reconstruction.** (3) II. Mr. Pegrum
The economic problems faced in rebuilding a peacetime economy; the role of private enterprise; regulation of industry; price controls; proposals for reconstruction.
190. **International Economics.** (3) I, II. Mr. Enke
An introduction to foreign trade, international finance, and immigration policies and problems.
195. **Principles of International Trade.** (3) I. Mr. Enke
Modern and classical theories of geographic specialization, theoretical evaluation of trade controls, and selected trade statistics.
197. **International Finance.** (3) II. Mr. Enke
Foreign exchange control, stabilization funds, gold and substitute standards, and international investment.

199. Special Problems in Economics. (2-3) I, II. The Staff
Admission by special arrangement through chairman of the department.

GRADUATE COURSES

- 201A-201B. History of Economic Doctrine. (3-3) Yr.** Mr. Watkins
- 210. Evolution of Economic Institutions. (3) II.** Mr. Scoville
- 214. Economic Theory. (3) I.** Mr. Anderson
The basic principles of economic theory; the nature of economic science; consumption, production, value and price, distribution.
- *215. Economics of Production. (3)** Mr. Pegrum
Production economics; competition; imperfect competition; monopoly; overhead costs; the planning of production.
- 232A-232B. The Relations of Government to Economic Life. (3-3) Yr.** Mr. Pegrum
A study of government in economic life with special reference to institutional factors, economic problems of regulation, price policies and economic planning, wartime controls.
- *233. Studies in Public Finance. (2)** Mr. Stockwell
- 235. Monetary Theory. (3) II.** Mr. Anderson
- *236. Studies in Contemporary Banking. (2)** Mr. Anderson
- *238. Economic Fluctuations. (2)** _____
- 242. Studies in Industrial Relations. (3) I.** Mr. Dodd
- 252 Social Insurance. (2) I.** Mr. Dodd
- *255. Value and Distribution. Seminar. (3)** Mr. Anderson
Prerequisite: the consent of the instructor.
- 256. Seminar in Labor Law. (3) I.** _____
- 290. Special Problems. (1-6) II.** The Staff (Mr. Pegrum in charge)

* Not to be given, 1946-1947.

EDUCATION

- DAVID F. JACKEY, Ph.D., Professor of Vocational Education and Director of the Division of Vocational Education.
- EDWIN A. LEE, Ph.D., Professor of Education (Chairman of the Department).
- KATHERINE L. MOLAUGHLIN, Ph.D., Professor of Education.
- MALCOLM S. MACLEAN, Ph.D., Professor of Education.
- LLOYD N. MORRISSETT, Ph.D., Professor of Education.
- WILLIAM A. SMITH, Ph.D., Professor of Education.
- J. HAROLD WILLIAMS, Ph.D., Professor of Education.
- FREDRIC P. WOELLNER, Ph.D., Professor of Education.
- JUNTUS L. MERIAM, Ph.D., Professor of Education, Emeritus.
- ERNEST CARROLL MOORE, Ph.D., LL.D., Professor of Education and Philosophy, Emeritus.
- CHARLES WILKIN WADDELL, Ph.D., Professor of Education, Emeritus.
- JESSE A. BOND, Ed.D., Associate Professor of Education and Director of Training.
- JOHN A. HOCKETT, Ph.D., Associate Professor of Education and Associate Director of Training.
- ETHEL I. SALISBURY, M.A., Associate Professor of Elementary Education and Supervisor of Training.
- MAY V. SEAGOE, Ph.D., Associate Professor of Education.
- PAUL H. SHEATS, Ph.D., Associate Professor of Education.
- SAMUEL J. WANOUS, Ph.D., Associate Professor of Business Education and Office Management.
- FLAUD C. WOOTON, Ph.D., Associate Professor of Education.
- , Associate Professor of Education.
- HARVEY L. EBY, Ph.D., Associate Professor of Education, Emeritus.
- CLARENCE HALL ROBISON, Ph.D., Associate Professor of Education, Emeritus.
- DAVID McDONALD, Ph.D., Assistant Professor of Education.
- CORINNE A. SEEDS, M.A., Assistant Professor of Elementary Education and Principal of the University Elementary School.
-
- HELEN CHRISTIANSON, Ph.D., Lecturer in Education and Supervisor of Nursery School Training.
- JOHN A. SEXSON, Ed.D., Lecturer in Education.

Training

- JESSE A. BOND, Ed.D., Director of Training.
- JOHN A. HOCKETT, Ph.D., Associate Director of Elementary Training.

Departmental Supervisors

- ROBERT S. HILPERT, M.A., Associate Professor of Art Education.

SAMUEL J. WANOUS, Ph.D., Associate Professor of Business Education and Office Management.

FOSS R. BROCKWAY, Ed.B., Associate in Mechanic Arts.

HELEN CHUTE DILL, M.A., Supervisor of Training, Music.

HAZEL J. CUBBERLEY, M.A., Associate Professor of Physical Education for Women.

PAUL FRAMPTON, M.A., Associate Supervisor of Physical Education for Men.

UNIVERSITY ELEMENTARY SCHOOL

CORINNE A. SEEDS, M.A., Assistant Professor of Elementary Education and Principal of the University Elementary School.

HELEN CHRISTIANSON, Ph.D., Supervisor of Nursery School Training and Lecturer in Education.

NATALIE WHITE, M.A., Supervisor of Training, Art.

LAVERNA L. LOSSING, M.A., Supervisor of Training, Music.

DIANA W. ANDERSON, M.A., Supervisor of Training, Physical Education.

INA K. DILLON, Ed.D., School Counselor.

GERTRUDE C. MALONEY, M.A., Training Teacher, Sixth Grade.

HENNY M. JOHNSEN, Ed.B., Training Teacher, Sixth Grade.

HELEN F. BOUTON, M.A., Training Teacher, Fifth Grade.

BESSIE HOYT PERSELS, M.A., Training Teacher, Fourth Grade.

LOLA C. JENSEN, B.S., Training Teacher, Third Grade.

EMILIE I. JONES, Ed.B., Training Teacher, Second Grade.

HELEN SUE READ, B.S., Training Teacher, Second Grade.

JANE BERNHARDT STEYKER, M.A., Training Teacher, Kindergarten.

KATHEYN LOBING, A.B., Assistant Training Teacher.

BLANCHE LUDLUM, M.A., Training Teacher, Nursery School.

PHOEBE JAMES, Assistant in the Elementary School.

City Training Schools

NORA STERRY ELEMENTARY TRAINING SCHOOL

ALICE H. ARMSTRONG, Ed.B., Principal.

HELEN B. KELLER, Ed.B., Supervisor of Training.

The staff consists of twenty to twenty-five training teachers selected from the Los Angeles city school system. The personnel varies from year to year.

FAIRBURN AVENUE ELEMENTARY DEMONSTRATION SCHOOL

IDA F. COLEMAN, A.B., Principal.

ETHEL I. SALISBURY, M.A., Supervisor of Training.

A staff of demonstration teachers, varying in personnel from year to year, is chosen from the Los Angeles school system to carry on work open for observation to University students, public school teachers, and administrators.

JUNIOR AND SENIOR HIGH SCHOOLS

- RALPH D. WADSWORTH, M.A., Principal, University High School.
 HELEN M. DARSIE, M.A., Vice-Principal, University High School.
 A. G. RAMEY, M.A., Vice-Principal, University High School.
 PAUL E. GUSTAFSON, M.A., Principal, Emerson Junior High School.
 CARRIE M. BROADED, M.A., Vice-Principal, Emerson Junior High School.
 ARTHUR G. ANDRESEN, A.B., Vice-Principal, Emerson Junior High School.
 FRANCIS C. BROOKS, A.B., Counselor, University High School.
 HILDUR C. OSTERBERG, M.A., Counselor, Emerson Junior High School.

Supervisors of Secondary Training

- ATTILIO BISSIRI, M.A., Mathematics and Science.
 LUZERNE W. CRANDALL, M.A., English.
 CECILIA R. IRVINE, M.A., Social Science.
 ETHEL S. MARTIN, Ed.B., Homemaking.
 DOROTHY C. MERIGOLD, Ph.D., Foreign Language.

The rest of the secondary school staff consists of about one hundred public school teachers carefully chosen for their ability as teachers and as supervisors by the University supervisory staff and approved for such service by the public school authorities. Each ordinarily assumes responsibility for the training of not more than three student teachers at any one time. The personnel varies from semester to semester as the needs of the University require.

An undergraduate major is not offered in the Department of Education at Los Angeles. Students desiring to qualify for certificates of completion leading to teaching and administration credentials should consult the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION, LOS ANGELES.

College of Letters and Science

Letters and Science List.—Courses 101, 102, 106, 110, 111, 112, 114, 119, 170, 180, 185 are included in the Letters and Science List of Courses. For regulations governing this list, see page 65.

UPPER DIVISION COURSES

History and Theory of Education

101. **History of Education. (3) I.** Mr. Wootton
 The development of educational thought and practice viewed as a phase of the history of Western civilization.
102. **History of Education in the United States. (3) II.** Mr. Wootton
 The development of significant educational movements in the United States as a basis for the analysis of present-day problems.
106. **The Principles of Education. (3) I, II.** Mr. MacLean
 A critical analysis of the assumptions underlying education in a democratic social order.

Educational Psychology

Psychology 21, and either 22 or 23; or the equivalent, are prerequisite to all courses in educational psychology.

110. The Conditions of Learning. (3) I, II. Mr. McDonald, Miss Seagoe
Speech, writing, number, literature, science considered as social institutions evolved through cooperative intellectual effort. Analysis of the conditions under which the child attains most effective mastery of these skills and knowledges.

111. Growth and Development of the Child. (3) I, II. Miss McLaughlin
A study of intellectual, emotional, and social development during childhood and adolescence. Particular attention is given to problems of mental hygiene during critical growth periods.

112. Adolescence. (3) I, II. Mr. McDonald
The physical, mental, moral, and social traits of adolescence with special reference to their bearing upon problems of instruction in junior and senior high schools.

114. Educational Statistics. (2) I, II. Mr. Williams
Statistical procedures applicable to educational problems and educational research.
Students who are taking or who have taken any other course in statistics will receive only one unit of credit for this course.

117. Principles of Guidance. (3) I, II. Mr. MacLean
The philosophy, techniques, and present practices of guidance as applied to the problems of pupil personnel and counseling in the public schools.

119. Educational Measurement. (3) I, II. Miss Seagoe
Use of standardized tests in problems of group and individual diagnosis and evaluation.

Early Childhood Education

123. Social Backgrounds of Child Development. (3) I. Miss Christianson
Prerequisite: Psychology 21 and either 22 or 23.
A study of the factors conditioning growth, development, and learning in early childhood.

124. Arts in Childhood Education. (3) II. Miss Christianson
Prerequisite: course 111.
The functional values of music, speech, rhythm, and dramatic play in early child development.

125A. Kindergarten-Primary Education. (3) I. Miss McLaughlin
Prerequisite: courses 110, 111. Required for the kindergarten-primary teaching credential.
Reading and literature in the lower school, including aims, standards of attainment, materials, and technique of teaching.

125B. Kindergarten-Primary Education. (3) II. Miss McLaughlin
Prerequisite: courses 110, 111 (125A is not prerequisite). Required for the kindergarten-primary teaching credential.
Organization, curricula, and procedures in the nursery school, kindergarten, and primary grades.

139. **The Elementary Curriculum.** (3) I, II. Mr. Hockett, Miss Salisbury
Prerequisite: senior standing.

Current conceptions of the content and organization of the elementary school curriculum with emphasis upon the place of the skills in the total school program.

Educational Administration and Supervision

- *140. **The Teacher and Administration.** (2) II. Mr. Morrisett

The teacher considered as a part of the educational system, and his responsibilities to the organization.

141. **Administration of City School Systems.** (3) I. _____

The principles of efficient school administration as exemplified in the practices of progressive cities.

- *142. **State and County School Administration.** (2) I, II. Mr. Morrisett

Prerequisite: the consent of the instructor.

The organization and administration of state school systems with special reference to the interrelation of federal, state, and county support and organization.

145. **Problems in Public School Finance and Business Administration.** (2) I. _____

Prerequisite: the consent of the instructor.

Methods and problems of financing public education, including a study of the principles of public school business administration, preferred practice, and procedure.

147. **Audio-Visual Education.** (3) I, II. _____

A course designed to acquaint teachers with the theories and methods of visual instruction and to furnish experience in the utilization of audio-visual aids. Required of all candidates for teaching credentials after July 1, 1947.

- *148. **Legal Bases of Public Education in California.** (2) II. Mr. Morrisett

Prerequisite: the consent of the instructor.

Organization and administration of the California school system, as given in the school law of the state and as interpreted by the rulings of the State Superintendent of Public Instruction and the Attorney General.

149. **Field Work in Administration and Supervision** (2) I, II.

Mr. Morrisett

To be taken concurrently with or subsequent to elementary or secondary school administration.

VOCATIONAL EDUCATION

160. **Vocational Education.** (2) I. Mr. Jackey

An attempt to develop an understanding and appreciation of the economic and social significance of vocational education in a democracy.

164. **Educational and Vocational Guidance.** (2) II. Mr. Jackey

The need of vocational guidance in a changing industrial order. The technique of guidance, as exemplified in case studies.

* Not to be given, 1946-1947.

165. **Business Education.** (3) I. Mr. Wanous
The organization, administration, and teaching of business education in secondary schools.

Secondary Education

170. **Secondary Education.** (3) I, II. Mr. Smith
Prerequisite: senior standing and Psychology 21 and either 22 or 23.
A study of secondary education in the United States, with special reference to the needs of junior and senior high school teachers.

Social and Adult Education

180. **Social Foundations of Education.** (3) I, II. Mr. Woellner
Education as a factor in social evolution. Analysis of current educational practices in the light of modern social needs.

181. **Adult Education.** (2) I, II. Mr. Woellner
An analysis of the adult education movement to ascertain principles for organizing and conducting special and evening classes for mature students. Problems of citizenship, Americanization, and vocational and liberal education will be considered.

197. **Comparative Education.** (2) I. Mr. Wooton
A study of educational ideas and practices in the major countries of the world with special emphasis on such trends as indicate postwar developments in national systems of education.

Special Studies in Education

Open to senior and graduate students with the consent of the instructor.

- 199A. **Studies in Business Education.** (2 to 4) I, II. Mr. Wanous
199B. **Studies in Curriculum.** (2 to 4) I, II. Mr. Hockett, Mr. Smith
199C. **Studies in Educational Psychology.** (2 to 4) I, II. Miss Seagoe
199E. **Studies in Administration** (2 to 4) I, II. Mr. Morrisett
199F. **Studies in Guidance.** (2 to 4) I, II. Mr. MacLean
199G. **Studies in Elementary School Supervision.** (2-4) I, II. Mr. Hockett

GRADUATE COURSES§

201. **History of Education.** (2) I. Mr. Wooton
A survey of educational ideas and practices in the history of western civilization. In general, not open to students with credit for Education 101.
202. **History of Education in the United States.** (2) II. Mr. Wooton
A survey of educational ideas and practices in the history of the United States. In general, not open to students with credit for Education 102.
- 208A-208B. **Social and Civic Foundations of Education.** (2-2) Yr.
Prerequisite: courses 106 and 180. Mr. Sheats
Analysis of educational policies and procedures as they are affected by political and economic trends in American life.

§ A thesis is required of all candidates for the degree of Master of Arts with major in education.

212A-212B. Advanced Educational Psychology. (2-2) Yr. Mr. McDonald
Prerequisite: course 110 or Psychology 110, or the equivalent.

Exploration and critical study of current literature and research in educational psychology.

219. Educational Diagnosis. (2) II.

Mr. Williams

Prerequisite: previous work in educational measurement, including statistical methods.

Study of the development and application of educational measurement and diagnostic procedures. Exploration of standard literature and current research in measurement. Methods of organizing, presenting, and evaluating measurement projects.

226A-226B. Business Education. (2-2) Yr.

Mr. Wanous

For teachers and students of graduate standing interested in problems related to the organization and supervision of business training on high school and junior college levels. Admission on consultation with the instructor.

***240. Organization and Administration of Education.** (2) II. Mr. Morrisett

241A-241B. School Surveys. (2-2) Yr.

Mr. Morrisett

A critical study of the techniques and findings of school surveys, combined with practice in making studies of school systems. Admission on consultation with the instructor.

***242A-242B. Education in the Postwar Period.** (2-2) Yr.

Mr. Morrisett and Staff

A consideration of the factors which may influence public education in the postwar years and the development of plans and programs based on the findings. Open to superintendents of schools, principals, other administrative officers, and qualified graduate students.

243A-243B. Administration of Secondary Education. (2-2) Yr.

Mr. Morrisett

For teachers of experience who desire to qualify for the secondary school supervision or secondary school administration credential. Admission on consultation with the instructor.

246. Administration of Elementary Education. (2) II.

Mr. Hockett

For teachers of experience who desire to qualify for the elementary school supervision or elementary school administration credential. Problems in organization and administration of the modern elementary school. Admission on consultation with the instructor.

250A-250B. History of Education. Seminar. (2-2) Yr.

Mr. Wooton

Prerequisite: courses 101 and 102, or 201 and 202, or their equivalent. Limited to candidates for advanced degrees.

Specialized studies in the history of education.

* Not to be given, 1946-1947.

- 251A-251B. *Supervision of Instruction and Curriculum.* (2-2) Yr. ———
- 253A-253B. *Early Childhood Education. Seminar.* (2-2) Yr.
Miss McLaughlin
254. *Experimental Education. Seminar.* (2) I. Mr. Williams
- 255A-255B. *School Administration. Seminar.* (2-2) Yr. Mr. Morrisett
Prerequisite: a teaching credential and course 141 or its equivalent.
Limited to candidates for the master's or doctor's degree whose major interest is school administration.
- 256A-256B. *Principles of Education. Seminar.* (2-2) Yr. Mr. Lee
Prerequisite: course 106 or its equivalent.
A critical study and appraisal of educational theory, historical and current, the objective of which is to formulate a philosophy of education suited to modern demands.
- 260A-260B. *Educational Psychology. Seminar.* (2-2) Yr. Miss Seagoe
Prerequisite: course 110 or Psychology 110, and course 114 or 119.
- 262A-262B. *The Elementary School Curriculum. Seminar.* (2-2) Yr.
Admission on consultation with the instructor. Mr. Hockett
- 266A-266B. *Vocational Education and Guidance. Seminar.* (2-2) Yr.
Mr. Jackey
For graduate students whose major interest is in vocational education, vocational guidance, or closely related problems. Admission on consultation with the instructor.
- 270A-270B. *Secondary Education. Seminar.* (2-2) Yr. Mr. Smith
- 275A-275B. *The Secondary School Curriculum. Seminar.* (2-2) Yr. ———.
- *276A-276B. *Research in Curriculum.* (1-4; 1-4) Yr. ———
- 279A-279B. *The Junior College. Seminar.* (2-2) Yr. Mr. MacLean
For graduate students whose major interest is in the junior college, the technical institute, or closely related areas of study. Admission on consultation with instructor.
- 281A-281B. *Adult Education. Seminar.* (2-2) Yr. Mr. Sheats
Prerequisite: course 181 or its equivalent. For teachers, supervisors, and administrators interested in adult education, university extension, evening schools, or related problems.
- *290. *Fundamentals of Educational Research.* (2) I, II. ———
Limited to candidates for advanced degrees in the field of education; admission by consent of the instructor.

* Not to be given, 1946-1947.

292A-292B. Research in Educational Administration. (1-4; 1-4) Yr.

Mr. Morrisett

Prerequisite: teaching experience in elementary or secondary schools.

298A-298B. Research in Education. (2-6; 2-6) Yr.

The Staff

COURSES PREPARATORY TO SUPERVISED TEACHING

330. Introduction to Elementary Teaching. (4) I, II.

Miss Seeds

Prerequisite: Education 110, 111 and a C average or better for all work taken in the University of California.

An intensive study of the principles of teaching made effective by assigned reading, observation, participation, analysis of teaching problems, and preparation of units of work.

This course precedes by one semester all teaching in kindergarten-primary and general elementary grades.

370. Introduction to Secondary Teaching. (3) I, II.

Mr. Bond

Prerequisite: regular graduate status; Education 170 and either 101A, 101B, 102, 106, 112, 140, 180, or Psychology 110.

An intensive study of teaching and learning in the secondary school. This course is prerequisite to G377, G378, and G379, and is so conducted as to prepare for and lead to definite placement in supervised teaching.

Other courses in teaching methods in special subjects will be found listed in the 300-series, Professional Courses in Method, in the offerings of the various departments, and in the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION (Los Angeles).

SUPERVISED TEACHING

Supervised teaching is provided in (1) the University Elementary School, comprising a nursery school, kindergarten, and the elementary grades; (2) Nora Sterry Elementary School of Los Angeles City; (3) University High School and Emerson Junior High School of Los Angeles City; (4) other high schools of Los Angeles and Santa Monica, as requirements demand. The Fairburn Avenue Elementary School serves as a demonstration school.

The work in supervised teaching is organized and administered by the directors of training and a corps of supervisors and training teachers, chosen in every case by the University authorities.

All candidates for supervised teaching must obtain the approval of a university physician prior to assignment. Formal application for assignment must be made at the office of the Director of Training about the middle of the semester preceding that in which such teaching is to be done. For the last dates of application without late fee, see the Calendar, page 6.

Undergraduate candidates for kindergarten-primary, elementary, or special secondary teaching must have maintained at least a C average in all courses in education, in all courses comprising the major, and in all work completed at the University of California.

For Permit to Serve in Child-care Centers

N334. Supervised Care of Preschool Children. (2 to 4) I, II.

Required of candidates for permit to serve in child-care centers; does not meet the requirement in supervised teaching for kindergarten-primary or general elementary credentials.

Observation of and participation in the supervision and care of children two to four years of age.

For Kindergarten-Primary, General Elementary, and General Junior High School Credentials

K335A-K335B. Supervised Teaching: Kindergarten-Primary. (4-4) I, II.
Prerequisite: senior standing and course 330.
Required of all candidates for the kindergarten-primary credential.

K336. Supervised Teaching: Kindergarten-Primary. (1 to 4) I, II.
Supplementary teaching which may be elected by the student or, in certain cases, required by the department.

E335A-E335B. Supervised Teaching: General Elementary. (4-4) I, II.
Prerequisite: senior standing and course 330.
Required of all candidates for the general elementary credential.

E336. Supervised Teaching: General Elementary. (1 to 4) I, II.
Supplementary teaching which may be elected by the student or, in certain cases, required by the department.

J374. Supervised Teaching: General Junior High School. (2 to 6) I, II.
Prerequisite: course E335A-E335B, or a minimum of 6 units of teaching in a special field.

For Special Secondary Credentials

A375 (3 or 4) and A376 (1 to 4). Supervised Teaching: Art. I, II.
Prerequisite: senior standing, course 170, Art 370A-370B. A total of 6 units required of all candidates for the special secondary credential in Art.

B375 (3 or 4) and B376 (1 to 4). Supervised Teaching: Business Education. I, II.
Prerequisite: senior standing, course 170, Business Administration 370A-370B. A total of 6 units required of all candidates for the special secondary credential in business education.

H375 (3 or 4) and H376 (1 to 4). Supervised Teaching: Home Economics. I, II.
Prerequisite: senior standing, course 170, Home Economics 370. A total of 6 units required of all candidates for the special secondary credential in homemaking.

MA375 (3 or 4) and MA376 (1 to 4). Supervised Teaching: Mechanic Arts. I, II.
Prerequisite: senior standing, course 170, Mechanic Arts 370. A total of 6 units required of all candidates for the special secondary credential in industrial arts education.

M375 (3 or 4) and M376 (1 to 4). Supervised Teaching: Music. I, II.
Prerequisite: senior standing, course 170, Music 370A-370B. A total of 6 units required of all candidates for the special secondary credential in music.

P375 (3 or 4) and P376 (1 to 4). Supervised Teaching: Physical Education. I, II.
Prerequisite: senior standing, course 170, Physical Education for Men 354 and 355A-355B, or Physical Education for Women 326A-326B and 327A-327B. A total of 6 units required of all candidates for the special secondary credential in physical education.

*For General Secondary and Junior College Credentials***G377. Supervised Teaching: General Secondary. (4) I, II.**

Prerequisite: regular graduate status, courses 170, 370. Required of all candidates for the general secondary credential.

This course consists of participation in the instructional activities of one high school class for one term, and is accompanied by a required conference each week; hours for teaching are by individual arrangement.

G378. Supervised Teaching: General Secondary. (1 to 6) I, II.

Prerequisite: regular graduate status, courses 370 and G377, or the equivalents, or public school experience and the consent of the Director of Training.

A supplementary course in secondary teaching designed for (1) those experienced in public school teaching who need to improve their teaching techniques; (2) those seeking general secondary or junior college credentials after having completed the supervised teaching required for some other type of credential; (3) those who wish to elect types of teaching experience not provided in their previous training.

G379. Supervised Teaching: Junior College. (4) I, II.

Prerequisite: regular graduate status, courses 279, 370, or the equivalents, and the consent of the Director of Training. Restricted to candidates for the junior college credential alone who are teaching classes in the University or in a junior college.

383. Supervised Teaching: Supplementary teaching in any secondary field. (1 to 6) I, II.

Prerequisite: course 170.

TEACHING REQUIREMENTS FOR MORE THAN ONE CREDENTIAL**‡1. Kindergarten-Primary and General Elementary Credentials:**

Education K335A-K335B, and E335A; or E335A-E335B, and K335A.

2. General Elementary and General Junior High School Credentials:

E335A-E335B, and J374 (in a minor field).

‡3. General Elementary and Special Secondary Credentials:

A minimum of 6 units of teaching in the special field, and E335A.

4. General Elementary and General Secondary Credentials:

E335A-E335B, and G377 or G378; or G377, and E335A.

‡5. Special Secondary and General Junior High School Credentials:

A minimum of 6 units of teaching in the special field, and J374 (in a minor field).

6. Special Secondary and General Secondary Credentials:

A minimum of 6 units of teaching in the special field, and G377 or G378; or G377, and a minimum of 6 units of teaching in the special field.

7. Junior College and General Secondary Credentials:

G379, and G377 or G378.

‡ The combinations so marked (‡) are in greatest demand.

ENGINEERING

L. M. K. BOELTER, M.S., Professor of Engineering (Chairman of the Department).

WENDELL E. MASON, M.S., M.E., Associate Professor of Engineering.

WESLEY L. ORR, B.S., Associate Professor of Engineering.

THOMAS A. ROGERS, Ph.D., Associate Professor of Engineering.

HENRY SCHEFFÉ, Ph.D., Associate Professor of Engineering.

CRAIG L. TAYLOR, Ph.D., Associate Professor of Engineering.

*RALPH E. BYRNE, JR., Ph.D., Assistant Professor of Engineering.

HARRY W. CASE, Ph.D., Assistant Professor of Engineering.

ALLEN E. FLANIGAN, M.S., Assistant Professor of Engineering.

HAROLD W. MANSFIELD, Assistant Professor of Engineering.

JOHN W. MILES, Ph.D., Assistant Professor of Engineering.

EDWARD H. TAYLOR, M.S., Assistant Professor of Engineering.

ALLEN A. AUSTIN, B.S., Lecturer in Engineering.

RENÉ GUILLOU, M.S., Lecturer in Engineering.

JOHN W. HAZEN, M.S., Lecturer in Engineering.

ADRIAN D. KELLER, M.A., Lecturer in Engineering.

WILLIS H. BLISS, B.E., Associate in Mechanic Arts.

FOSS R. BROCKWAY, Ed.B., Associate in Mechanic Arts.

ADIN E. MATHEWS, M.S., Associate in Mechanic Arts.

HARRY C. SHOWMAN, B.S., Associate in Mechanic Arts.

ROBERT S. HILPERT, M.A., Associate Professor of Art Education.

MARTIN R. HUBERTY, Engr., Professor of Irrigation.

ARTHUR F. PILLSBURY, Engr., Assistant Professor of Irrigation.

Service Charge.—Students registered in the College of Engineering pay a uniform service charge of \$20 a semester, which covers all required courses of the College of Engineering and all elective courses in the Department of Engineering. Students registered for 8 units or less pay a uniform service charge of \$15 a semester.

Laboratory Fees.—Students registered in other colleges pay fees per course as announced: Engineering 1FA, 1FB, \$6; Engineering 3, \$25; Engineering 10B, \$6; Engineering 104A, 104B, \$11.50; Engineering 108F, fee to be announced.

* Absent on leave, 1946–1947.

LOWER DIVISION COURSES

11A-11B. Plane Surveying Lectures. (2-2) Yr. Beginning either semester.
Mr. Mason in charge

Prerequisite: trigonometry and geometric drawing.

Principles of measurement of distances, directions, and elevations. Construction and use of common surveying instruments, such as tape, compass, level, transit, and alidade. Problems in elementary surveying.

1FA-1FB. Plane Surveying Field Practice. (1-1) Yr. Beginning either semester.
Mr. Mason in charge

Prerequisite or concurrent: course 11A-11B. Fee, \$6 a semester.

2. Descriptive Geometry. (3) I, II. Mr. Mansfield and Staff

Lecture, one hour; laboratory, six hours.

The fundamental principles of descriptive geometry and their application to the solution of engineering problems.

***3. Summer Class in Plane Surveying.** (4)

Prerequisite: course 1FA-1FB.

Four weeks of field work after the close of the college semester. Fee, \$25.

6. Machine Drawing. (3) I, II. Mr. Mansfield and Staff

Lecture, one hour; laboratory, six hours.

Design and delineation of simple machine parts in the drafting room, with special emphasis upon the production of drawings which conform to standard practice.

8. Materials of Engineering Construction. (2) I, II. Mr. Keller

Prerequisite: Chemistry 1A-1B, sophomore standing or the consent of the instructor.

Sources, properties, and production of the more common engineering materials such as iron, steel, brasses, bronzes, aluminum alloys, magnesium alloys, plastics, wood, concrete, brick, stone, tile, and protective coatings. Consideration of materials for cables and belting.

10B. Treatment of Engineering Materials. (2) I, II. Mr. Austin

Six hours per week. Prerequisite or concurrent: course 8. Fee, \$6.

Elementary pattern making, forging, and heat treatment. Machining and processing of engineering materials.

12. Survey and Problems in Agricultural Engineering. (2) I. Mr. Guillou

Prerequisite: Physics 2A-2B.

Historical and modern applications of engineering to farm life, with reference to general and local conditions. Study of erosion, drainage, irrigation, water supply, sewage disposal; domestic and production structures and their equipment; utilities and rates; equipment for tillage, pest control, harvesting, transportation, farm processing.

15A-15B. Elementary Mechanics. (3-3) Yr. Beginning either semester.

Mr. Orr and the Staff

Prerequisite: course 8 (may be taken concurrently), Physics 1A, Mathematics 4A-4B (may be taken concurrently).

This is a unified course covering material ordinarily given separately in courses in analytical mechanics and in strength of materials.

Statics. The conventional work on force diagrams, concurrent forces,

* To be given in summer of 1947.

parallel forces, etc. Loading, shear, and moment diagrams. Simple stresses, strength in tension, compression, and bending. Moment of inertia.

Kinetics of particles and rigid bodies, work, energy, deflection, distortion, elastic deformation, kinetics of rotating bodies, momentum, angular distortion.

Supplementary demonstrations in lecture room and materials laboratory.

30A-30B. Human Dynamics. (3-3) Yr. Mr. Case, Mr. C. L. Taylor

Prerequisite: Physics 1A-1B.

The physiological and psychological reactions of man induced by his interactions with machines, processes, structures, and circuits. Man's response to the electrical, thermal, and mechanical force fields, and man as a source of work will be stressed.

48. The Anatomy of Engineering. (1) I. Mr. Boelter in charge

Designed for students entering the College of Engineering.

The philosophical basis of engineering and the present scope of the profession. Biographies of eminent engineers and the organization of engineering in industry. Reading and problem assignments.

UPPER DIVISION COURSES

100A-100B. Electrical Circuits and Machinery. (3-3) Yr. Beginning either semester. Mr. Rogers in charge

Prerequisite: Mathematics 4A-4B, Physics 1C.

(A) Voltage generation; circuit constants; single-phase and polyphase circuit analysis; single-phase transformers; polyphase connections of transformers.

(B) Machine windings and induced voltages; synchronous, induction, direct current, and single-phase machines; rectification; electronic tubes and their associated circuits; practical engineering problems.

101. Irrigation Institutions and Economics. (2) II. Mr. Huberty

Prerequisite: junior standing.

Water rights, irrigation institutions and organizations.

102A-102B. Analytical Mechanics. (3-3) Yr. Beginning either semester.

Mr. Orr and the staff

Prerequisite: Mathematics 4A-4B, Physics 1A-1B. Mathematics 110A-110B recommended.

An introductory course in applied mechanics designed especially to meet the needs of students in engineering. The forces of inertia, friction, and restoration are treated separately and in combination. The force, momentum, and energy methods of solution are utilized. Dimensional analysis parallels the analytical treatment.

103. Fluid Mechanics. (3) I, II. Mr. E. H. Taylor

Prerequisite: course 102A-102B (may be taken concurrently), or 15A-15B, Physics 105, course 105A-105B (may be taken concurrently).

An introductory course dealing with the application of the principles of mechanics to the flow of compressible and incompressible fluids. Includes hydraulic problems of flow in closed and open conduits.

104A-104B. Electrical Laboratory. (2-2) Yr. Beginning either semester.

Mr. Rogers in charge

Prerequisite: course 100A-100B (may be taken concurrently).

Introductory experiments illustrating principles of design and operation of alternating and direct-current motors and generators, transformers, vacuum tubes, single and polyphase circuits, metering and control equipment. Fee, \$11.50 a semester.

105A-105B. Heat Transfer and Thermodynamics. (3-3) Yr. Beginning either semester.

Mr. Mason and the Staff

Prerequisite: Mathematics 4A-4B or equivalent, Chemistry 1A-1B, Physics 1A-1B, 1D-1C, and full junior standing in the College of Engineering.

The principles of thermodynamics and heat transfer applied to engines and nonisothermal process equipment. Thermal properties of gases and vapors. Heat power engines using gases and vapors, with a consideration of the theoretical cycles, the accompanying diagram factors, and the practical engine forms, mechanisms, and economic performances.

106. Production Design. (8) II.

Mr. Hilpert, Mr. Mason

Lecture, one hour; laboratory, six hours.

Prerequisite: senior standing in engineering, or permission of the instructors.

Engineering and economic calculations involved in the design and manufacture of industrial products; design for function, safety, and appearance.

107. Structural Analysis. (8) II.

Mr. Orr

Prerequisite: course 102B and 108B or equivalent.

Statically determinate and indeterminate theory with applications to frame works of machines and structures.

108A-108B. Strength of Materials. (3-2) Yr. Beginning either semester.

Mr. Orr and the Staff

Prerequisite: course 102A (may be taken concurrently).

Elastic and ultimate resistance of materials; stress analysis for bars, beams, columns, and shafts; theory of resilience; deflections and combined stresses; elements of design for wood, metal, plastics, soil, and reinforced concrete.

108F. Engineering Materials Laboratory. (1) I, II.

Mr. Mason

Prerequisite: course 108A, and course 8 and 10B. Fee to be announced.

Physical tests of wood, metals, concrete, paper, soil, plastics, and ceramic materials. The measurement of stresses in machines and structures.

109. Irrigation Engineering. (3) II.

Mr. E. H. Taylor, Mr. Pillsbury

Prerequisite: course 103 (may be taken concurrently).

Use of irrigation water, hydrology of irrigation water supplies; design, operation and maintenance of irrigation and drainage systems.

†113A-113B. The Engineer and His Professional Duties. (2-2) Yr.

Enrollment limited to twenty students per section.

Mr. Boelter

Prerequisite: senior standing in engineering.

Oral and written reports on various subdivisions of knowledge with

† 113A to be given, fall and spring semesters; 113B to be given when there is sufficient demand.

emphasis on the socio-humanistic periphery of engineering. Class meetings will be devoted to the subjects of the history of technology, business organization, personal efficiency, professional codes and ethics, industrial procedures, and engineering report writing.

The course serves as training in the professional duties of the engineer.

125. Building Services. (2) I.

Mr. Orr

Prerequisite: senior standing in engineering.

Basic principles underlying the lighting, ventilation and acoustics of buildings; the hydraulics of water supply and sewage disposal, the traffic within buildings, and safety.

170. Sales Engineering. (3) I, II.

Mr. Case

Prerequisite: senior standing in engineering.

Two class hours, and field trips.

The principles of engineering sales will be illustrated by the case method. The selection and assembly of prefabricated components in the solution of a production and construction problem. Presentation of the service function as it is related to sales engineering.

180. Advanced Kinematics of Mechanisms. (3) II.

Mr. Orr

Prerequisite: course 2 and 102B.

Analysis and synthesis of fundamental types of mechanisms, including electric, magnetic, pneumatic, and hydraulic links. Applications will be considered to such devices as instruments, servo-mechanisms, calculating machines, conveyors, and printing presses.

181. Mechanical and Electrical Dynamical Systems. (2) I.

Mr. Rogers

Prerequisites: courses 100A, 102A-102B or equivalent, 108A; Mathematics 110A, 110B (may be taken concurrently) or Mathematics 119.

The course will consider vibrating system elements, the formation of equations of motion for these systems, solution of these equations, including the initial conditions and the methods used for rapid computation. Analogies between electrical, mechanical, acoustical and thermal systems will be discussed, including electromechanical systems.

198. Directed Group Studies for Upper Division Students. (1-5) I, II.

The Staff

Prerequisite: senior standing in the College of Engineering.

Group study of selected topics. Study groups may be organized in advanced engineering subjects upon approval of instructor in charge.

199. Special Studies or Research for Advanced Undergraduates. (1-5) I, II.

The Staff

Prerequisite: senior standing in the College of Engineering.

Individual study and/or research on a problem normally chosen from a restricted departmental list. Enrollment is subject to the scholarship requirements imposed by the instructor concerned.

GRADUATE COURSES

298. Seminar in Engineering. (1-5) I, II.

The Staff

Seminars may be organized in advanced technical fields. Course may be repeated provided no duplication exists.

299. Research in Engineering. (1-5) I, II.

The Staff

Investigation of advanced technical problems.

MECHANIC ARTS

The following courses will not be offered after July 1, 1948. Enrollment will be limited by laboratory-space facilities.

Students in the College of Engineering may not enroll in Mechanic Arts courses.

Laboratory Fees.—Mechanic Arts 101, 102, 104A, 104B, 107A, 107B, 114, 121, 135, 145, 155, \$3.50; 111, 112 to be announced.

UPPER DIVISION COURSES

101. **Cabinet Making.** (3) II. Mr. Brockway
 Fee, \$3.50.
 Case and furniture making with emphasis on variety of typical elements. Preparation and application of paints, stains, varnishes and lacquers.
102. **General Shop.** (3) I, II. Mr. Brockway
 Fee, \$3.50.
 Fundamentals of handicraft: shop procedures and properties of materials used in craft projects. The tooling of copper and leather, glass etching, sand blasting, plaster casting; types of finishes; the uses, properties, and handling of plastics.
- 104A-†104B. **Electrical Circuits and Machinery.** (3-3) Yr. Mr. Mathews
 Prerequisite: course 14, Physics 1C, or Physics 2B. Fee, \$3.50 a semester.
 A general course in direct and alternating current circuits and equipment, principles and use of measuring instruments, switchboard work, circuit testing, and problems of commercial distribution.
- 106A-†106B. **Industrial Drawing.** (2-2) Yr. Mr. Mansfield
 Technical sketching, lettering, assembly and detail drawings, design, tracing and reproduction.
- 107A-107B. **Machine Shop.** (3-3) Yr. Mr. Bliss
 Prerequisite: course 17; no prerequisite for graduate students on consent of the instructor. Fee, \$3.50 a semester.
 Advanced machine shop practice. Layout work and use of precision instruments; machine construction and repair; principles of tool and die work; jigs and fixtures; individual projects and model making.
- †111. **Wood Pattern Making.** (3) _____
 Fee to be announced.
 Pattern making and foundry practice.
- †112. **General Metal Work.** (3) _____
 Fee to be announced.
 A study of ferrous and nonferrous metals. The use of hand tools and machines and their application to metal working. Bench work and heat treatments; forging and ornamental iron work; oxyacetylene and electric arc welding; foundry practice and metal casting.
114. **Industrial Arts Electricity.** (3) II. Mr. Mathews
 Fee, \$3.50.
 Prerequisite: course 14; Physics 1C or 2B.
 Basic theory of elementary electrical equipment, with laboratory work in the design and construction of electrical and radio projects, particularly those suitable for teaching purposes in secondary schools.

† To be given if a sufficient number of students enroll.

†121. **Industrial Arts Woodwork. (2)**

Fee, \$3.50.

Design and development of projects in wood suitable for classes in secondary schools.

135. **Automotive Power Plants. (3) I.**

Mr. Brockway

Fee, \$3.50.

Survey of internal combustion engines; principles of operation of Diesel, automotive, and aeronautical engine types; fuels and fuel systems; lubrication principles.

†145. **Automotive Laboratory. (3)**

Fee, \$3.50.

Principles of the automobile and its adjustment. The taking down, assembly, and operation of automotive units. Diagnostic tests and measurements for mechanical condition. Study of tolerances and clearances of the various parts. Survey of fuels, lubricants, and problems of automotive lubrication.

155. **Automotive Service. (3) II.**

Mr. Brockway

Fee, \$3.50.

Principles of automotive service; engine testing methods and trouble location; study and use of modern "tune-up" equipment; fuel and lubricant testing; carburetion service; automotive electrics, storage batteries, and circuits.

199A-199B. **Special Problems in Technical Related Subjects. (1-3;1-3) Yr.**

Mr. Mansfield and the Staff

Tools, materials, processes of industry, and special studies in the field of mechanic arts.

PROFESSIONAL COURSE IN METHOD370. **Industrial Arts Education. (2) I.**

Mr. Brockway

A study of the objectives, content, organization, methods, and techniques of teaching the industrial arts in the secondary schools.

† To be given if a sufficient number of students enroll.

ENGLISH

- FREDERIC THOMAS BLANCHARD, Ph.D., Professor of English.
 LILY BESS CAMPBELL, Ph.D., Professor of English.
 SIGURD BERNHARD HUSTVEDT, Ph.D., Professor of English.
 KENNETH MACGOWAN, S.B., Professor of Theater Arts.
 * ALFRED NOYES, LL.D., Litt.D., Visiting Professor of English.
 † DIXON WECOTER, Ph.D., Professor of English.
 LOUIS BOOKER WRIGHT, Ph.D., Visiting Professor of English.
 MARGARET SPRAGUE CARHART, Ph.D., Associate Professor of English.
 MAJL EWING, Ph.D., Associate Professor of English.
 EDWARD NILES HOOKER, Ph.D., Associate Professor of English.
 WESLEY LEWIS, Ph. D., Associate Professor of Public Speaking.
 ALFRED EDWIN LONGUEIL, Ph.D., Associate Professor of English.
 * WILLIAM MATTHEWS, Ph.D., Associate Professor of English.
 FRANKLIN PRESCOTT ROLFE, Ph.D., Associate Professor of English (Chairman of the Department).
 HERBERT FRANCIS ALLEN, Ph.D., Associate Professor of English, Emeritus.
 HARRIET MARGARET MACKENZIE, Ph.D., Associate Professor of English, Emeritus.
 * BRADFORD ALLEN BOOTH, Ph.D., Assistant Professor of English.
 LLEWELLYN MORGAN BUELL, Ph.D., Assistant Professor of English.
 HUGH GILCHRIST DICK, Ph.D., Assistant Professor of English.
 CARL SAWYER DOWNES, Ph.D., Assistant Professor of English.
 CLAUDE JONES, Ph.D., Assistant Professor of English.
 HARRISON MANLY KARE, Ph.D., Assistant Professor of Public Speaking.
 * RICHARD GORDON LILLARD, Ph.D., Assistant Professor of English.
 JAMES EMERSON PHILLIPS, JR., Ph.D., Assistant Professor of English.
 JOHN FREDERIC ROSS, Ph.D., Assistant Professor of English.
 HUGH THOMAS SWEDENBERG, JR., Ph.D., Assistant Professor of English.
 CARL JULIUS BODE, Ph.D., Instructor in English.
 WALDEN PHILIP BOYLE, Ph.D., Instructor in Public Speaking.
 ANDREW RUEBEN HILEN, JR., Ph.D., Instructor in English.
 ADA BLANCHE NISBET, Ph.D., Instructor in English.
 NORMAN MACKENZIE REID, Ph.D., Instructor in Public Speaking.
 WILLIAM WARTHIN TAYLOR, Ph.D., Instructor in English.
 JOHN ROSS WINNIE, M.F.A., Instructor in Public Speaking.
 JAMES LEMUEL WORTHAM, Ph.D., Instructor in English.
- RALPH FREUD, Lecturer in Public Speaking.
 JAMES MURRAY, Ed.D., Lecturer in Public Speaking.
 DANIEL VANDRAEGEN, M.A., Lecturer in Public Speaking.
 JACK SHERMAN MORRISON, A.B., Assistant in Public Speaking.

* Absent on leave, 1946-1947.

† In residence first semester only, 1946-1947.

* In residence second semester only, 1946-1947.

Students must have passed Subject A (either examination or course) before taking any course in English or Public Speaking. Regulations concerning Subject A will be found on page 36 of this catalogue.

Letters and Science List.—All undergraduate courses in English and all courses in Public Speaking except 23 are included in the Letters and Science List of Courses. For regulations governing this list, see page 65.

Preparation for the Major.—Courses 1A-1B and 36A-36B or the equivalent, with an average grade of C or higher; History 5A-5B or the equivalent.

Recommended: Ancient and modern foreign languages. A reading knowledge of French or German is required for the M.A. degree. For the Ph.D. degree a reading knowledge of both French and German is required; a reading knowledge of Latin is essential for work in some fields.

The Major.—Plan I. For the general undergraduate: the program must include (1) English 117J; (2) one of the Type courses; (3) four of the Age courses, including English 156 (not more than two courses in adjacent ages); (4) at least 3 units of American Literature; (5) English 197, to be taken in the second semester of the senior year. This major may not be elected by students who have already begun their upper division work in English.

Plan II. For the undergraduate expecting to proceed to the M.A. or Ph.D. in English: the student must present, in the first half of the junior year, a program to be examined and approved by the departmental adviser to upper division students. (1) The program must comprise, at a minimum, 24 units of upper division courses in English, including (a) English 117J, to be taken in the junior year; (b) one of the Type courses; (c) two of the Age courses (not in adjacent ages); (d) at least 3 units of American Literature; (e) English 151L, to be taken in the senior year. (2) At the end of the senior year the student must take the Comprehensive Final Examination. If he fails this examination he may still receive the bachelor's degree, but in order to be approved for graduate study in English, he must pass it with a grade of A or B.

Honors in English.—Students who are working under either Plan or who are taking the English and Speech major for the Secondary Credential must pass the Comprehensive Final Examination with a grade of A or B in order to be recommended for the bachelor's degree with honors in English.

A. Requirements for the General Secondary Credential.

1. For the field major in English and Speech.

(a) The completion of the following: (1) English 1A-1B, 36A-36B; (2) 6 units from Public Speaking 1A, 2A, 2B; (3) English 106 or 31; 117J; 130A-130B or 190A-190B; 115 or 153; (4) 6 units from English 114A-114B, 122A-122B, 125C-125D, 125G-125H; (5) 6 units from English 156, 157, 158, 167, 177, 187; (6) 6 units from Public Speaking 110A-110B, 122, 155A-155B, 156; (7) English 370, to be taken in the first semester of graduate residence; (8) 6 units of courses in the 200 series or their equivalent, to be selected after consultation with the adviser.

(b) The passing of the Senior Comprehensive Final Examination with a grade of C or better.

2. For the field minor in English and Speech, the completion of the following courses: (1) English 1A-1B, 36A-36B, (2) 3 units from Public Speaking 1A, 2A; (3) English 106 or 31; (4) 6 units from English 114A-114B, 115, 117J, 125C-125D, 130A-130B, 153, 190A-190B.

B. Requirements for Admission to Graduate Courses.

Ordinarily the undergraduate major in English or its equivalent. (No graduate student may take a graduate course in English who has to his credit fewer than 12 units in upper division major courses in English.) This requirement is prerequisite to the 24 units demanded for the master's degree. If the candidate is deficient in this prerequisite, he must fulfill it by work undertaken as a graduate student.

C. Requirements for the Master's Degree.

1. For the general requirements, see page 111. The department follows Plan II.

2. Departmental requirements: (a) Students are required to take the reading test in French or German at the beginning of the first semester of residence. (b) They must pass the Senior English Comprehensive Examination with a grade of A or B. (c) They must complete English 200, Bibliography, and 3 units from English 110, 111, 208, 209, 211A-211B, 212. (d) Students should choose the allowable 12 undergraduate units from English 110, 111, 151L, and the Age courses.

D. Requirements for the Doctor's Degree.

1. For the general requirements, see page 114.

2. Departmental requirements: (a) On entering the department, candidates will present to the chairman a written statement of their preparation in French, German, and Latin. They must take the reading test in one of the two required modern foreign languages (French and German) at the beginning of the first semester of residence, the test in the other not later than the beginning of the third semester of residence. For work in some fields a reading knowledge of Latin will be necessary. (b) Candidates must complete English 200, Bibliography, at the first opportunity. For other course requirements, consult the department.

3. The qualifying examination for advancement to candidacy will consist of a general examination, written and oral, covering English literature in all its phases from the beginning to the present. The written section will be set in five three-hour sections covering the main periods of English literature, with particular emphasis on the candidate's special field. The oral section will be at least two hours in length. The qualifying examination should be taken at least two semesters before the date at which the student expects to receive the degree.

LOWER DIVISION COURSES*Freshman Courses*

- 1A-1B. First-Year Reading and Composition.** (3-3). Beginning either semester. Mr. Wortham in charge
Open to all students who have received a passing grade in Subject A.
- *4A. World Literature: Dramatic Comedy.** (1) I. _____
- *4B. World Literature: Dramatic Tragedy.** (1) II. _____
- *4C. World Literature: the Novel.** (1) I. _____
- *4D. World Literature: Famous Utopias.** (1) II. _____
- 5A-5B. Great Books.** (1-1) Yr. Mr. Ewing in charge

* Not to be given, 1946-1947.

Sophomore Courses

Course 1A-1B is prerequisite to all sophomore courses in English.

31. Intermediate Composition. (2) I, II.

Mr. Ewing in charge

36A-36B. Survey of English Literature, 1500 to 1900. (3-3) Yr. Beginning either semester.

Mr. Hooker in charge

UPPER DIVISION COURSES

Courses 1A-1B and 36A-36B are prerequisite to all upper division courses in English, except 110, 111, 117J, 125C-125D, 130A-130B, 133, 135, 136, 190A, 190B, for which only 1A is prerequisite. Students who have not passed English 31 will be admitted to 106A, 106C, and 106F only upon a test given by the instructor. Upper division standing is required for all upper division courses in English.

A. *The Junior Course*: Course 117J. Required of juniors whose major or minor subject is English.

B. *The Type Courses*: Courses 114A-114B, 122A-122B, 125C-125D, and 125G-125H. It is understood that major students in English will take one of these courses.

C. *The Age Courses*: Courses 156, 157, 158, 167, 177, and 187. It is understood that major students in English will take two to four of these courses.

D. *Courses in American Literature*: Courses 130A-130B, 131, 133, 135, and 136. It is understood that major students in English will take at least 3 units of these courses.

E. *The Senior Course*: Course 151L. Required of seniors whose major subject is English under Plan II.

106A. The Short Story. (2) I.

Miss Carhart

106B. Verse Writing. (3) II.

Prerequisite: course 153 or the consent of the instructor.

106C. Critical Writing. (2) II.

Mr. Downes

106F. Exposition. (2) I, II.

Mr. Rolfe, Miss Carhart

106L. Advanced Composition for Teachers. (2) I, II.

Mr. Bode

Designed primarily for candidates for the General Secondary Teaching Credential.

*110. Introduction to the English Language. (3) II.

Mr. Matthews

*111. The English Language in America. (3) I.

Mr. Matthews

114A-114B. English Drama from the Beginning to the Present. (3-3) Yr.

Miss Campbell, Miss Carhart, Mr. Dick

115. Primitive Literature. (3) I.

Mr. Jones

The study of primitive types, such as the fable, folk tale, myth, legend, ballad, and hero tale, as to characteristics and theories of origin and diffusion. The comparative study of typical stories, and the work of collectors and adapters.

* Not to be given, 1946-1947.

- 117J. Shakespeare. (3) I, II. Miss Campbell, Mr. Longueil, Mr. Buell,
Mr. Ross, Mr. Dick, Mr. Phillips
A survey of from twelve to fifteen plays, with special emphasis on one
chronicle, one comedy, and one tragedy.
- 122A-122B. English Poetry from the Beginning to the Present. (3-3) Yr.
Mr. Longueil
- 125C-125D. The English Novel from the Beginning to the Present.
(3-3) Yr. Mr. Blanchard, Mr. Rolfe
- *125G-125H. English Prose from the Beginning to the Present. (3-3) Yr.
Mr. Ewing
- 130A-130B. American Literature. (2-2) Yr. Beginning either semester.
Mr. Downes, Mr. Booth, Mr. Ross
A survey of American literature from the beginning to 1860, and from
1860 to the present day; a study of the chief American writers, with special
reference to the development of literary movements and types.
- *131. American Literature: the Flourishing of New England. (3) I, II.
Mr. Ross, Mr. Booth
Prerequisite: course 130A or the consent of the instructor.
The study of such figures as Emerson, Hawthorne, Thoreau, Prescott,
Longfellow, Lowell, and Holmes, with particular emphasis on the interaction
between American and European literature and thought in the period.
133. American Life in American Letters. (3) II. Mr. Lillard
The main currents of thought in American life as reflected in literature.
- *135. American Fiction. (3) II. _____
The history of the American novel and short story from the beginning
to the present day.
136. American Humor and Satire. (3) I. Mr. Ross
- 151L. Chaucer. (3) I, II. Mr. Hustvedt, Mr. Longueil, Mr. Matthews
153. Introduction to the Study of Poetry. (3) I, II.
Mr. Hustvedt, Mr. Longueil, Miss Carhart
- *155. Literary Criticism. (3) I. Mr. Blanchard
156. The Age of Elizabeth. (3) I, II. Mr. Dick, Mr. Phillips
157. The Age of Milton. (3) II. Mr. Hustvedt
158. The Age of Dryden. (3) I. Mr. Hooker
167. The Age of Pope and Johnson. (3) I.
Mr. Blanchard, Mr. Hooker, Mr. Swedenberg
177. The Romantic Age: 1784-1832. (3) I. Mr. Longueil
187. The Victorian Age: 1832-1892. (3) II. Mr. Rolfe
- 190A. Literature in English from 1900. (2) I. Mr. Ewing
Criticism; the novel; biography.

* Not to be given, 1946-1947.

190B. Literature in English from 1900. (2) II. Mr. Ewing
Poetry; the drama; the essay.

*197. Senior Survey. (3) I, II. Mr. Hooker

An integrated survey of English literature designed for the general student who is majoring in English but who has no professional interest in the subject and is not therefore required to take the Comprehensive Examination. No student may receive unit credit for both this course and the Comprehensive Examination.

*199. Special Studies in English. (3) I, II.
Limited to seniors; may be taken only once for credit.

COMPREHENSIVE FINAL EXAMINATION

The Comprehensive Final Examination is taken at the end of the senior year by majors working under Plan II, by English and speech majors, and by candidates for honors in English. It will consist of one two-hour paper and one three-hour paper. The examination will cover English literature from the beginning to 1900. The papers will be set by the examining committee of the department. The student's preparation for this examination will presumably extend throughout the entire college course.

This examination is not counted as part of the 24-unit major but is counted on the 36-unit upper division requirement and on the 120 units required for graduation. It does not affect study-list limits, and should at no time be entered by the student upon his study list. However, the student is advised to limit his program to 13 units during his last semester. Upon his passing the examination the grade assigned by the department will be recorded. Given each semester; credit, 3 units.

Mr. Longueuil in charge

200. Bibliography. (3) I, II. Mr. Wright, Mr. Dick

*208. The Development of Modern English. (3) II. Mr. Matthews

*209. History of the English Language. (3) II. Mr. Matthews

211A. Old English. (3) I. Mr. Hustvedt

*211B. Beowulf. (3) II. Mr. Matthews

212. Middle English Literature. (3) II. Mr. Matthews

215. English Literature of the 17th Century. (3) I. Mr. Hooker

217A-217B. Shakespeare. (3-3) Yr. Miss Campbell

*218. English Tragedy: 1550-1642. (3) I. Miss Campbell

*219. English Comedy: 1550-1642. (3) II. Miss Campbell

*225A-225B. The Ballad. (3-3) Yr. Mr. Hustvedt

*226. Sir Walter Scott: The Ballads and Romances. (3) II. Mr. Hustvedt

227. Early English Metrical Romances. (3) I. Mr. Hustvedt

*231. Marlowe. (3) II. Miss Campbell

* Not to be given, 1946-1947.

- *232A. Backgrounds of American Literature through the Civil War. (3) I. Mr. Wecter
- *232B. Backgrounds of American Literature since the Civil War. (3) II. Mr. Wecter
- 235A. The English Novel: 1700-1750. (3) I. Mr. Blanchard
- 235B. The English Novel: 1750-1800. (3) II. Mr. Blanchard
239. Milton. (3) II. Mr. Hustvedt
- *242. Fielding. (3) II. Mr. Blanchard
- *243. Dryden and His Contemporaries. (3) I. Mr. Hooker
244. Pope and His Contemporaries. (3) II. Mr. Hooker
245. Spenser. (3) I. Miss Campbell
- *247. Phases of Neo-Classicism. (3) I. Mr. Hooker
- *248A-248B. English Literary Criticism. (3-3) Yr. Mr. Blanchard
- *250. The Theory of Fiction (1600-1700). (3) II. Mr. Blanchard
- 270A. Colonial America: Letters and Ideas. (3) II. Mr. Wright
- *270B. American Literature of the Atlantic Seaboard. (3) I. Mr. Wecter
- 270E. Modern American Literature (Since 1900). (3) I. Mr. Wecter
- *277. The Romantic Movement. (3) I. _____
290. Special Problems. (1 to 6) I, II. The Staff

PROFESSIONAL COURSE IN METHOD

370. The Teaching of English. (3) II. Mr. Bode
 May be counted as part of the 18 units in education required for the secondary credential. Required of candidates for the General Secondary Credential in English.

PUBLIC SPEAKING†

LOWER DIVISION COURSES

- 1A-1B. Elements of Public Speaking. (3-3) Yr. Beginning either semester. Mr. Karr, Mr. Lewis, Mr. Murray, Mr. Vandraegen, Mr. Reid
- 2A-2B. The Fundamentals of Expression and Interpretation. (3-3) Yr. Beginning either semester. Mr. Freud, Mr. Boyle, Mr. Winnie
- 5A-5B. Principles of Argumentation. (3-3) Yr. Mr. Lewis
 Prerequisite: course 1A-1B and the consent of the instructor.
23. Stage Management. (2) I, II. Mr. Freud, Mr. Morrison

* Not to be given, 1946-1947.

† The University of California at Los Angeles does not offer a major in public speaking. Students wishing to satisfy the requirement for a major in public speaking are referred to the GENERAL CATALOGUE, DEPARTMENTS AT BERKELEY.

UPPER DIVISION COURSES

- 110A. **Third-Year Public Speaking. (3) I.** Mr. Lewis
 Prerequisite: course 5A-5B.
 Oral argumentation and debate; preparation of briefs; presentation of arguments.
- 110B. **Third-Year Public Speaking. (3) II.** Mr. Lewis
 Prerequisite: course 110A and the consent of the instructor.
 Practice in extemporary speaking; preparation of the occasional address.
- *111C-111D. **Literary Interpretation. (3-3) Yr.** _____
 Prerequisite: course 2A-2B.
 The dramatization of one novel, the oral reading and classroom presentation of selected one-act plays, and the study and abridgment of one three-act play in relation to public reading technique.
122. **Diction and Voice. (3) I, II.** Mr. Karr
 Prerequisite: courses 1A and 2A or the equivalent.
- 155A-155B. **Play Production. (3-3) Yr.** Mr. Freud, Mr. Boyle
156. **Play Directing. (3) I, II.** Mr. Freud, Mr. Boyle
 Study and practice in the direction of play and group activities of a dramatic nature.
- 159A-159B. **Participation in Theatrical Production. (2-2) Yr.**
 Mr. Freud, Mr. Boyle
- *170. **Introduction to Oratory. (3) II.** Mr. Lewis
- 190A-190B. **Forensics. (1-1) Yr.** Mr. Lewis
 Prerequisite: the consent of the instructor.

* Not to be given, 1946-1947.

ENTOMOLOGY

A Division of the Department of Agriculture

WALTER EBELING, Ph.D., Lecturer in Entomology.

The Major.—The major is offered only on the Berkeley campus. See the PROSPECTUS OF THE COLLEGE OF AGRICULTURE and consult the appropriate adviser for students in Agriculture.

LOWER DIVISION COURSE

***1. General Entomology. (4) II.**

Lectures, three hours; laboratory, three hours.

The classification, life history, structure, and physiology of insects.

UPPER DIVISION COURSES

134. Insects Affecting Subtropical Fruit Plants. (4) II.

Mr. Ebeling

Lectures, two hours; laboratory, six hours. Recommended preparation: Zoölogy 1, Entomology 1.

Biology, economic importance, and control of insects affecting citrus and other subtropical fruit plants. Four weeks of the course are devoted to insecticides and to spraying, dusting, and fumigating methods and equipment.

199A-199B. Special Study for Advanced Undergraduates. (2-4; 2-4) Yr.

Mr. Ebeling

Prerequisite: senior standing and the consent of the instructor.

* Not to be given, 1946-1947.

FOREIGN LANGUAGE GROUP

MARION A. ZETTLIN, Ph.D., Professor of Spanish (Chairman of the Group).

This group is composed of the departments of Classics, French, Germanic Languages, and Spanish and Italian, and has been organized for the purpose of unifying and coördinating the activities in these fields. Although no attempt is made to curtail the free development of each department, the special committee in charge of the Foreign Language Group endeavors to articulate, for their mutual benefit, the courses and research work of the four departments concerned.

The announcements of the departments comprising this group appear in their alphabetical order.

Letters and Science List.—All courses.

FOLKLORE

UPPER DIVISION COURSE

145. Introduction to Folklore. (3) I. Mr. Hand
 Prerequisite: 6 units of upper division work in English, French, German, Italian, or Spanish, and a reading knowledge of one foreign language. Open to major students in English or in a modern foreign language.
 The various fields of folklore, their literature, and problems.

GRADUATE COURSE

245. The Folk Tale. (2) II. Mr. Hand
 Prerequisite: course 145, or its equivalent.

GENERAL PHILOLOGY AND LINGUISTICS

UPPER DIVISION COURSES

- *150. Introduction to General Language. (1) I. _____
 Prerequisite: two years of Latin, or two years each of two other foreign languages.
 The interrelation of ancient and modern languages, especially those of common Indo-European origin.
170. Introduction to Linguistics. (3) II. Mr. Hoijer
 An introduction to the fundamentals of general and historical linguistics, including phonetics; linguistic elements; grammatical categories; linguistic change; dialect geography; language, race, and culture.
171. Introduction to Phonetics. (3) I. Mr. Hoijer
 The speech sound and the phoneme; phonetic transcription; types of phonemes; phonetic forms; practice in recording English and other languages phonetically.
- *195. Introduction to Indo-European Linguistics. (3) I. _____

* Not to be given, 1946-1947.

ROMANCE LANGUAGES AND LITERATURES

GRADUATE COURSES

201A-201B. French Historical Grammar and Methodology of Romance Linguistics. (2-2) Yr.

A knowledge of Latin is indispensable.

***203A-203B. Old Provençal: Reading of Texts. (2-2) Yr.** Mr. Templin

***235. Romance Versification. (2) I.** Mr. Bailiff

***252. Methodology of Romance Philology. (2) II.** Mr. Zeitlin

* Not to be given, 1946-1947.

FRENCH

- PAUL PÉRIGORD, Ph.D., Professor of French Civilization.
 MYRON IRVING BARKER, Ph.D., Associate Professor of French.
 FRANCIS J. CROWLEY, Ph.D., Associate Professor of French.
 ALEXANDER GREEN FITTE, Ph.D., Associate Professor of French.
 CLINTON C. HUMISTON, Ph.D., Associate Professor of French (Chairman of the Department).
 MARIUS IGNAÇE BIENCOURT, Docteur de l'Université de Paris, Assistant Professor of French.
 L. GARDNER MILLER, Docteur de l'Université de Strasbourg, Assistant Professor of French.
 HARRY F. WILLIAMS, Ph.D., Instructor in French.
 PAUL BONNET, Lic. ès Lettres, Associate in French.
 ALICE HUBARD, M.A., Associate in French.
 MADELEINE LETESSIER, A.B., Associate in French.
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- MARIE D. MOLLES-STEIN, Ph.D., Lecturer in French.
 CHARLOTTE FRIEDLANDER, M.A., Assistant in French.
 GALIA MILLARD, M.A., Assistant in French.
 OLGA SABERSKY, M.A., Assistant in French.

Letters and Science List.—All undergraduate courses in French are included in the Letters and Science List of Courses. For regulations governing this list, see page 65.

Preparation for the Major.—French 1, 2, 3, 4, 42A-42B, or their equivalents. Two years of high school Latin, or Latin A and B, or the equivalent, must be completed before the beginning of the senior year. History 4A-4B, Philosophy 2A-2B, and a modern language are strongly recommended.

The Major.—Required: 24 units of upper division French, including courses 101A-101B, 109A-109B, 112A-112B.

Any of the remaining upper division courses except 109M-109N may be applied on the major. With the permission of the department 4 units of the 24 may be satisfied by appropriate upper division courses in English, German, Greek, Latin, Spanish, Italian, or philosophy.

Students with majors in French will also be required to take a comprehensive examination covering history, geography, literature, and other general information concerning France. Two units credit toward the major will be given for satisfactory record in this examination which will be given on the third Friday in January and on the third Friday in May.

LOWER DIVISION COURSES

The ordinary prerequisites for each of the lower division courses are listed under the description of these courses. Students who have had special advantages in preparation may, upon examination, be permitted a more advanced program; or, such students may be transferred to a more advanced course by recommendation of the instructor.

* In residence second semester only, 1946-1947.

1. Elementary French. (4) I, II. Miss Letessier in charge
 1G. Reading Course for Graduate Students. (No credit) I. Mr. Miller
 Three hours a week.

2. Elementary French. (4) I, II. Miss Letessier in charge
 Prerequisite: course 1 or two years of high school French.

3. Intermediate French. (4) I, II. Mr. Bonnet in charge
 Prerequisite: course 2 or three years of high school French.

4. Intermediate French. (4) I, II. Mr. Bonnet in charge
 Prerequisite: course 3 or four years of high school French.

8A-8B-8C-8D. French Conversation. (1-1) Beginning each term.
 Miss Letessier in charge

The class meets two hours weekly. Open to students who have completed course 2 or its equivalent with grade A or B.

*25. Advanced French. (5) II. Miss Letessier
 Prerequisite: course 4.

25A-25B. Advanced French. (3-3) Yr. Mr. Miller
 Prerequisite: course 4.

42A-42B. French Civilization. (2-2) Yr. Mr. Périgord
 Presentation of the larger cultural elements in European history as caused, influenced, diffused, or interpreted by the French people. Lectures in English, reading in French or English.

UPPER DIVISION COURSES

The prerequisite to all upper division courses except 109M and 109N is 16 units in the lower division, including course 4 with a grade A or B, or 25A-25B (or 25).

Courses 42A-42B, 101A-101B, 109A and 109B are ordinarily prerequisite to other upper division courses.

All upper division courses, with the exception of 109M and 109N, are conducted mainly in French.

101A-101B. Composition, Oral and Written. (3-3) Yr. Beginning either semester. Mr. Fite, Mr. Biencourt, Mr. Miller

109A. Survey of French Literature and Culture. (3) I. Mr. Périgord
 Limited to major students in French. Not open to students who have taken or are taking courses 109M, 109N.

The Middle Ages, the Renaissance, and the seventeenth century.

109B. Survey of French Literature and Culture. (3) II. Mr. Périgord
 Prerequisite: course 109A.

The eighteenth, nineteenth, and twentieth centuries.

109M. A Survey of French Literature and Culture. (3) I. Mr. Humiston
 Given in English; does not count on the major in French. Not open to students who have taken or are taking courses 109A-109B.

The Middle Ages, the Renaissance, and the seventeenth century.

* Not to be given, 1946-1947.

- 109N. **A Survey of French Literature and Culture.** (3) II. Mr. Humiston
Prerequisite: course 109M.
The eighteenth, nineteenth, and twentieth centuries.
- 112A. **The Nineteenth Century.** (2) I. Mr. Périgord
Prerequisite: courses 101A-101B, 109A, and 109B.
From 1789 to 1830.
- 112B. **The Nineteenth Century.** (2) II. Mr. Périgord
Prerequisite: course 112A.
From 1830 to 1885.
- *114A-114B. **Contemporary French Literature from 1885 to the Present.**
(2-2) Yr. Mr. Fite
- 115A-115B. **Modern French Drama.** (2-2) Yr. Mr. Fite
- 118A-118B. **The Sixteenth Century.** (2-2) Yr. Mr. Humiston
- 120A-120B. **The Seventeenth Century.** (2-2) Yr. Mr. Biencourt
- 121A-121B. **The Eighteenth Century.** (2-2) Mr. Crowley
- 130A-130B. **Grammar, Composition, and Style.** (3-3) Yr. Mr. Fite
Prerequisite: an average grade higher than C in French courses. This course is required of all candidates for the certificate of completion of the teacher-training curriculum, or for the degree of Master of Arts.
Practice in oral and written composition based on selected models.
- 199A-199B. **Special Studies in French.** (2-2) Yr. The Staff
Prerequisite: senior standing and at least 12 units of upper division French.

GRADUATE COURSES

- 204A-204B. **Voltaire and His Age.** (2-2) Yr. Mr. Crowley
- 206A-206B. **Reading and Interpretation of Old French Texts.** (2-2) Yr.
- 214A-214B. **French Versification.** (2-2) Yr. Mr. Biencourt
- 219A. **The Origins of Romanticism; Its Development to 1824.** (2) I. Mr. Barker
- *219B. **Romantic Prose After 1824.** (2) II. Mr. Barker
- *219C. **Romantic Drama After 1824.** (2) I. Mr. Barker
- 219D. **Romantic Poetry After 1824.** (2) II. Mr. Barker
- *257A-257B. **Seminar in the French Renaissance.** (2-2) Yr. Mr. Humiston
290. **Research in French.** (1 to 6) I, II. The Staff
- *298A-298B. **Special Studies in Literary Criticism.** (2-2) Yr. Mr. Fite

* Not to be given, 1946-1947.

PROFESSIONAL COURSE IN METHOD

370. The Teaching of French. (3) I.

Mr. Crowley

Prerequisite: courses 101A-101B and 109A-109B, the latter being permitted concurrently. Required of all candidates for the Certificate of Completion in French; should be completed before practice teaching.

RELATED COURSES (See page 194)

Romance Languages and Literatures 201A-201B. French Historical Grammar and Methodology of Romance Linguistics. (2-2) Yr.

***Romance Languages and Literatures 203A-203B. Old Provençal: Reading of Texts. (2-2) Yr.**

Mr. Templin

***Romance Languages and Literatures 235. Romance Versification. (2) I.**

Mr. Bailiff

Romance Languages and Literatures 252. Methodology of Romance Philology. (2) II.

Mr. Zeitlin

* Not to be given, 1946-1947.

GEOGRAPHY

- *GEORGE McCUTCHEEN McBRIDE, Ph.D., Professor of Geography.
 CLIFFORD M. ZIERER, Ph.D., Professor of Geography (Chairman of the Department).
 RUTH EMILY BAUGH, Ph.D., Associate Professor of Geography.
 ROBERT M. GLENDINNING, Ph.D., Associate Professor of Geography.
 HENRY J. BRUMAN, Ph.D., Assistant Professor of Geography.
 ARTHUR W. CARTHEW, M.A., Assistant Professor of Geography.
 JOSEPH E. SPENCER, Ph.D., Assistant Professor of Geography.
 H. LOUIS KOSTANICK, A.M., Instructor in Geography.

W. GLENN CUNNINGHAM, A.M., Lecturer in Geography.

Letters and Science List.—All undergraduate courses in geography are included in the Letters and Science List of Courses. For regulations governing this list, see page 65.

Preparation for the Major.—Required: Geography 1A-1B, 3, 4, and 5B; Geology 2, or 5 or its equivalent; English 1A. Recommended: Economics 1A-1B, History 7A-7B or 8A-8B or 4A-4B, and Political Science 1 or 3A, 3B. Reading knowledge of one modern foreign language is desirable, preferably German, French, or Spanish.

The Major.—The minimum requirement is 30 units of upper division work in geography, including courses 101, 105, 113, 115, and three of the following: 121, 122A, 122B, 123A, 123B, 124A, 124B, 125, 131, plus three courses selected from the following list: 118, 155, 161, 171A or 171B or 173, 175, 181. A list of courses from other departments recommended for geography majors may be secured from the departmental advisers.

LOWER DIVISION COURSES

1A. Elements of Geography. (3) I, II.

Mr. Glendinning, Mr. Carthew, Mr. Cunningham

Students who have had courses 5A or 100 will receive only half credit for course 1A.

A study of the basic physical elements of geography (especially climate, land forms, soils, and natural vegetation), and their integrated patterns of world distribution.

1B. Elements of Geography. (3) I, II. Mr. Glendinning, Mr. Bruman

Prerequisite: course 1A or 5A. Students who have had course 100 will receive only half credit for course 1B.

A study of the basic cultural elements of geography (population distribution, general land use patterns and trade), and their correlation with the physical elements. The major geographic regions of the world are delimited.

* Absent on leave, 1946-1947.

3. Introduction to Climate and Weather. (3) I. _____

A survey of the earth's atmospheric phenomena, with special reference to the causes and regional distribution of climate and weather.

4. Map Reading and Interpretation. (3) I. _____

Lecture, one hour; laboratory, four hours.

A study of maps in the light of present-day needs, with special emphasis on the geographic interpretation of relationships between the natural and cultural phenomena in representative areas. Includes history of maps, map projections, aerial photographs, and practice in the reading of selected domestic and foreign maps.

5A. Economic Geography. (3) I, II. _____, Mr. Spencer, Mr. Kostanick

Limited to prospective majors in economics and business administration. Not open to students who have credit for course 1A-1B. Students who have credit for courses 1A or 100 will receive only 1½ units of credit for course 5A.

A study of those physical and cultural elements of the environment essential to the geographic interpretation of economic activities.

5B. Economic Geography. (3) I, II. _____, Mr. Spencer

Prerequisite: course 1A-1B, or 5A-5B, or 100.

The principles of economic geography as developed through studies of representative occupations, commodities, and trade.

UPPER DIVISION COURSES

100. Principles of Geography. (3) I, II. Mr. Cunningham

Prerequisite: senior standing, or candidacy for a teaching credential. Not open to those who have credit for course 1A-1B or 5A-5B; may not be counted on the major in geography.

A brief survey of the fundamental physical and cultural elements of geography and their integration on a world-wide regional basis.

101. Fundamentals of Geographic Field Work. (3) II. Mr. Bruman

Saturdays. Prerequisite: course 1A-1B or 5A-5B, and the consent of the instructor. To be taken by major students normally in the junior year.

Selected field studies in the Los Angeles area. The course affords training in field mapping of rural and urban types and in techniques of area analysis.

105. Cartography. (3) II. _____

Prerequisite: course 4 and one of the following: 1A-1B, or 5A-5B, or 100, or the consent of the instructor.

Practical map drawing and graphic representation of geographic data.

113. General Climatology. (3) II. _____

Prerequisite: course 3 and one of the following: 1A-1B or 5A-5B, or 100, or the consent of the instructor. To be taken by major students normally in the junior year.

A study of the causes of climatic phenomena and of the larger features which characterize the climates of the earth.

- 115. Physical Bases of Geography. (3) II.** Mr. Glendinning
Prerequisite: course 1A-1B or 5A-5B. One or two field trips may be required. To be taken by major students in the junior year; by others in either the junior or senior year.
A study of the basic physical factors existing in each of the major geographic realms, with special emphasis on the interrelationships of climates, land forms, soils, drainage, and natural vegetation.
- *118. Plant Geography. (3)** _____
Prerequisite: course 1A-1B, or 5A-5B, or 100.
Character, distribution, and environmental relationships of the principal vegetation regions of the world.
- 121. The Geography of Anglo-America. (3) I.** Mr. Zierer
Prerequisite: course 1A-1B, or 5A-5B, or 100.
Delimitation and analysis of the principal economic geographic divisions of the United States, Canada, and Alaska.
- 122A. The Geography of Middle America. (3) I.** Mr. Bruman
Prerequisite: course 1A-1B, or 5A-5B, or 100.
A study of the geographic factors, physical and cultural, that are basic to an understanding of the historical development of middle America and of the contemporary economic and social geography of Mexico and the countries of Central America and the West Indies.
- 122B. The Geography of South America. (3) II.** Mr. Bruman
Prerequisite: course 1A-1B, or 5A-5B, or 100.
A study of the geographic factors, physical and cultural, that are basic to an understanding of the historical development of South America and of the contemporary economic and social geography of the individual South American countries.
- 123A. The Geography of Western Europe. (3) I.** Miss Baugh
Prerequisite: course 1A-1B, or 5A-5B, or 100.
A study of geographic conditions and their relation to economic, social, and political problems in the Atlantic states of Europe.
- 123B. The Geography of Eastern and Southern Europe. (3) II.** Miss Baugh
Prerequisite: course 1A-1B, or 5A-5B, or 100.
A study of geographic conditions and their relation to economic, social, and political problems in eastern and southern Europe.
- 124A. The Geography of Southern Asia. (3) I.** Mr. Spencer
Prerequisite: course 1A-1B, or 5A-5B, or 100.
A regional survey of the physical and cultural features which characterize the economic, social, and political geography of southern Asia (India through the East Indies) during historic and modern times.
- 124B. The Geography of Eastern Asia. (3) II.** Mr. Spencer
Prerequisite: course 1A-1B, or 5A-5B, or 100.
A regional survey of the physical and cultural features which characterize the economic, social, and political geography of eastern Asia (China, Korea, and Japan).

* Not to be given, 1946-1947.

- *125. The Geography of Australia and Oceania. (3) II.** Mr. Zierer
 Prerequisite: course 1A-1B, or 5A-5B, or 100.
 A regional synthesis of the physical and human features which characterize Australia and New Zealand, Hawaii and the islands of the South Pacific.
- 131. The Geography of California. (3) II.** Miss Baugh
 Prerequisite: course 1A-1B or 5A-5B, or 100.
 An analysis of geographic conditions in the seven major provinces of California. Utilization of resources, routes of communication, location of settlements and distribution of population in their geographical and historical aspects.
- *155. Urban Geography. (3) II.** Mr. Zierer
 Prerequisite: course 1A-1B or 5A-5B, or 100.
 A study of the location, form, and functional evolution of cities.
- *161. The Conservation of Natural Resources. (3) I.** Mr. Zierer
 Prerequisite: course 1A-1B, or 5A-5B, or 100, or the consent of the instructor.
 The general principles of conservation and their application, especially in the United States.
- *165. Geographical Aspects of Land Planning. (3) II.** Mr. Glendinning
 Prerequisite: course 1A-1B or 5A-5B, and the consent of the instructor. Normally limited to ten students.
 A study of the role of geographic discipline in land planning activities.
- *171A. The Geographic Setting of American History. (3) I.** Mr. McBride
 Prerequisite: course 1A-1B or 5A-5B, or 100 and a university course in American history.
 A study of the relation of the physical environment to the historical development of the peoples inhabiting Anglo-America.
- *171B. The Geographic Setting of American History. (3) II.** Mr. McBride
 Prerequisite: course 1A-1B or 5A-5B, or 100 and a university course in American history.
 A study of the relation of the physical environment to the historical development of the peoples inhabiting Latin America.
- 173. The Historical Geography of the Mediterranean Region. (3) II.**
 Prerequisite: course 1A-1B or 5A-5B, or 100. Miss Baugh
 A study of the geographic factors operative in the Mediterranean lands from ancient to modern times.
- 175. The Cultural Bases of Geography. (3) I.** Miss Baugh
 Prerequisite: course 1A-1B, or 5A-5B, or 100.
 The geographic factor in the evolution of primitive cultures and of advanced civilizations.
- 181. Current Problems in Political Geography. (3) I, II.** Mr. Kostanick
 Prerequisite: course 1A-1B, or 5A-5B, or 100, or the consent of the instructor.
 The principles of political geography are developed through regional studies of political phenomena throughout the world. Current problems in domestic and international affairs will be considered.

* Not to be given, 1946-1947.

199. Problems in Geography. (3) I, II.

The Staff

Open to seniors and graduate students who have the necessary preparation for undertaking semi-independent study of a problem. Registration only after conference with the instructor in whose field the problem lies.

GRADUATE COURSES‡**250. The Growth of Geographic Thought: Seminar. (3) I.**

Mr. Zierer

Normally the first seminar to be taken by graduate students in Geography.

255. Seminar in the Geography of Asia. (3) II.

Mr. Spencer

Prerequisite: course 124A, or 124B, or the equivalent.

***256. Seminar in the Geography of Anglo-America. (3) I.**

Mr. Zierer

Prerequisite: course 121 or the equivalent.

257. Seminar in the Geography of Latin America. (3) II.

Mr. Bruman

Prerequisite: course 122A or 122B or the equivalent.

258. Seminar in California Geography. (3) I.

Miss Baugh

Prerequisite: course 131 or the equivalent.

***259. Seminar in the Geography of Australia and Oceania. (3) I.**

Mr. Zierer

Prerequisite: course 125 or the equivalent.

***261. Seminar in Climatology. (3) I.**

Prerequisite: course 113 or the equivalent.

262. Land Forms and Their Geographic Significance: Seminar. (3) II.

Mr. Glendinning

Prerequisite: course 115 or the equivalent.

***275. Advanced Field Problems in Local Geography. (3) I, II.**

Prerequisite: course 101 or the equivalent.

290. Research in Geography. (3 or 6) I, II.

The Staff

Investigation subsequent to, and growing out of, any of the above seminars.

PROFESSIONAL COURSE IN METHOD***370. The Teaching of Geography. (3) II.**

Prerequisite: course 1A-1B, or 5A-5B, or 100, or the consent of the instructor. This course may be counted on the unit requirement in education for the general secondary teaching credential.

The nature of geography and its place in the school curriculum; organization of its materials and methods of presentation; geography in social studies courses.

* Not to be given, 1946-1947.

‡ Requirements for the master's degree in geography may be met by either Plan I or Plan II.

Plan I, required of those preparing for advanced professional positions, must include three of the following seminars: 250; 255 or 256 or 257 or 258 or 259; 261 or 262; 275 or 290; and a thesis.

Plan II, required (unless the student elects Plan I) of those preparing for positions below the junior college level, must include three of the following seminars: 250; 255 or 256 or 257 or 258 or 259; 261 or 262; 275 or 290; and a comprehensive examination.

GEOLOGY

M. N. BRAMLETTE, Ph.D., Professor of Geology.
JAMES GILLULY, Ph.D., Professor of Geology (Chairman of the Department).
U. S. GRANT, Ph.D., Professor of Geology.
WILLIAM JOHN MILLER, Ph.D., Sc.,D., Professor of Geology.
CORDELL DURRELL, Ph.D., Associate Professor of Geology.
JOSEPH MURDOCH, Ph.D., Associate Professor of Geology.
WILLIAM C. PUTNAM, Ph.D., Associate Professor of Geology.
EDGAR K. SOPER, Ph.D., Associate Professor of Geology.
ROBERT W. WEBB, Ph.D., Associate Professor of Geology.

WILLIS P. POPENOE, Ph.D., Curator in Geology and Lecturer in Paleontology.

Letters and Science List.—All undergraduate courses in geology, mineralogy, and paleontology are included in the Letters and Science List of Courses. For regulations governing this list, see page 65.

Preparation for the Major.—Geology 5, 3; Mineralogy 3A-3B; Chemistry 1A-1B; Physics 2A-2B; Mathematics D or 1, and C or 3A; Engineering 11A-11B, 1FA-1FB (geology section). Recommended: English 1A-1B; a reading knowledge of German and French is essential for advanced work. Certain lower division requirements may be postponed to the upper division by permission of the department.

The Major.—A minimum of 25 units of upper division courses, including Geology 102A-102B, 103, 107, 116, and 118 or 199 (4 units); Paleontology 111A-111B. Mathematics 3A-3B is also required. The department will certify to the completion of a major program for graduation only on the basis of at least C grades in Geology 102B and 103.

Students whose major interests lie in the fields of mineralogy, petrology, petrography, economic geology, petroleum geology, stratigraphic geology, or geomorphology and who expect to continue work for the master's degree should complete also Mathematics 4A in their undergraduate program, since this is required for the higher degree. Mathematics 4B, 119A, Physics 105, and Chemistry 109A-109B, 120 are also recommended for students in the fields named above.

Students whose major interests lie in the fields of paleontology or historical geology and who expect to continue work for the master's degree should complete Zoölogy 1A-1B and 112 in their undergraduate program, since these are required for the higher degree. Zoölogy 104 is also recommended for such students.

Oral and written proof of ability to use the English language adequately and correctly must be furnished to the department. Each program for a major is to be made out in accordance with some definite plan approved by the department.

Laboratory Fees.—Geology 118, \$35; Mineralogy 3A, 3B, \$2.50.

GEOLOGY

LOWER DIVISION COURSES

2. General Geology: Physiographic. (3) I, II.

Mr. Grant, Mr. Miller, Mr. Putnam, Mr. Soper, Mr. Webb

Not open to students who have taken or are taking course 5; Geology 2L may not be taken concurrently. Students desiring laboratory should enroll in Geology 5.

An elementary course dealing with the earth's surface features and the geological laws governing their origin and development.

2L. General Geology: Laboratory. (1) I, II.

Mr. Popenoe, Mr. Webb

Prerequisite: course 2 (may not be taken concurrently). Open only to students who have completed course 2 or 1A offered in previous years and who must have credit for course 5 or its equivalent; the consent of the instructor is required.

Laboratory practice in physical geology.

3. General Geology: Historical. (3) I, II.

Mr. Miller, Mr. Webb

Prerequisite: course 2 or 5.

A study of the geological history of the earth and its inhabitants, with special reference to North America.

5. General Geology: Dynamical and Structural. (4) I, II.

Mr. Murdoch, Mr. Webb

Lectures, three hours; laboratory, three hours. Field trips will be taken in laboratory time. Prerequisite: elementary chemistry. Not open to students who have taken or are taking course 2 or who have credit for course 1A.

A study of the materials and structures of the earth and the processes and agencies by which the earth has been and is being changed.

UPPER DIVISION COURSES

102A. Field Geology. (3) I.

Mr. Putnam

Saturdays. Prerequisite: courses 3, 103 (may be taken concurrently), Civil Engineering 11A, 1FA, 11B, 1FB (geology sections). Credit toward the major is given only to students who take both 102A and 102B.

Introduction to field geology. Theory and practice of geologic mapping; and practice in the observation and interpretation of geologic phenomena, entailing weekly field trips into the nearby hills, and occasional longer excursions to points of special interest in a region remarkably rich in geologic features.

102B. Field Geology. (3) II.

Mr. Putnam

Saturdays. Prerequisite: course 102A, 103 (with a grade C or higher). A continuation of course 102A.

103. Introduction to Petrology. (4) I.

Mr. Durrell

Lectures, two hours; laboratory, six hours. Prerequisite: Mineralogy 3B and Chemistry 1B (may be taken concurrently).

The general characteristics, origins, mode of occurrence and nomenclature of rocks, and description of the more common types, accompanied by determinative laboratory practice.

- 106. Economic Geology: Metalliferous Deposits. (3) I.** Mr. Soper
Prerequisite: courses 3 and 103.
A systematic study of ore occurrences, and of the genetic processes and structural factors involved.
- 107. Physical Geology of North America. (2) II.** Mr. Miller
Prerequisite: course 3.
A course in advanced general geology with special reference to a regional study of North America.
- 108. General Economic Geology. (3) II.** Mr. Soper
Prerequisite: course 3.
Geologic occurrence and geographic distribution of the important minerals; special attention is given to strategic war minerals.
- 111. Petroleum Geology. (3) II.** Mr. Soper
Lectures, map work, problems, and field trips to nearby oil fields. Prerequisite: courses 102A, 116.
Geology applied to exploration for petroleum; the geology of the principal oil fields of the world with emphasis upon United States fields; and field methods in oil explorations.
- 116. Structural Geology. (3) II.** Mr. Gilluly
Lectures, two hours; laboratory, three hours. Prerequisite: courses 102A and 103. A working knowledge of descriptive geometry is desirable.
The phenomena of fracture, folding, flow, and the graphic solution of problems.
- 117. Geomorphology. (3) I.** Mr. Putnam
Lectures, two hours; conference, one hour; one or two field trips may be required. Prerequisite: course 3.
The principles of geomorphology; application to the study of selected regions; map work, reports, and outside readings.
- 118. Summer Field Course. (4)** The Staff (Mr. Putnam in charge)
Six weeks, beginning about June 10 of each year. Fee, \$35; camp and commissary deposit, \$65. Prerequisite: course 102B with a grade of at least C. With the approval of the instructor, this work may be taken for credit during two or more summers, under the designation Geology 118; however, not more than 4 units of credit so gained will be accepted as a part of the undergraduate major.
The chief aim of the course is to develop in the student (1) facility and accuracy in detailed geological mapping and cartography; (2) ability to observe independently and to interpret various types of rocks, structures, physiographic features, and other geological phenomena; and (3) the capacity to execute independently a general geologic survey of a region, determine its history, and prepare a suitable report concerning it. Satisfactory completion of this course satisfies the undergraduate thesis requirements for students whose major is geology.
- 199. Problems in Geology. (1 to 4) I, II.** The Staff
Open only to seniors. Reports and discussions.

GRADUATE COURSES

- ‡214A-241B. **Advanced Petrographic Laboratory.** (2-5; 2-5) Yr.
Prerequisite: Mineralogy 109B. Mr. Gilluly
Igneous rocks.
- 215A-215B. **Advanced Petrographic Laboratory.** (2-5; 2-5) Yr.
Prerequisite: Mineralogy 109B. Mr. Gilluly
Metamorphic rocks.
236. **Physical Geology of California.** (3) I. Mr. Miller
237. **Paleontology and Stratigraphy of California.** (3) II. Mr. Grant
251. **Seminar in Petrology.** (3) II. Mr. Miller
Advanced study of igneous and metamorphic rocks with emphasis on petrogenesis.
252. **Seminar in Geomorphology.** (3) II. Mr. Putnam
Emphasis on general principles and regional studies.
258. **Seminar in Stratigraphy.** (3) I. Mr. Bramlette
- 260A-260B. **Seminar in Structural Geology.** (3-3) Yr. Mr. Gilluly
The second semester of this course may be taken without the first.
263. **Seminar in Economic Geology.** (3) II. Mr. Soper
299. **Research in Geology.** (1 to 6) I, II. The Staff (Mr. Gilluly in charge)

MINERALOGY

LOWER DIVISION COURSE

- 3A-3B. **Introduction to Mineralogy.** (3-3) Yr. Mr. Murdoch, Mr. Webb
Lecture, one hour; laboratory, six hours; discussion, one hour (3A only).
Prerequisite: elementary chemistry and physics; Geology 5 (may be taken concurrently with 3A); or the consent of the instructor. Fee, \$2.50 a semester.
Crystal morphology and projection, determination of minerals by their physical and chemical properties, and descriptive mineralogy.

UPPER DIVISION COURSES

101. **Paragenesis of Minerals.** (2) I. Mr. Murdoch
Prerequisite: course 3A-3B, Chemistry 1A-1B.
- 109A. **Optical Mineralogy and Petrography.** (2) I. Mr. Durrell
Laboratory, six hours. Prerequisite: course 3B; Geology 103 (may be taken concurrently).
Study of the optical properties of minerals; mineral recognition under the microscope. The study and description of rocks, and their microscopic characters.
- 109B. **Optical Mineralogy and Petrography.** (4) II. Mr. Durrell
Lecture, one hour; laboratory, nine hours. Prerequisite: course 109A.
A continuation of course 109A.

‡ Not to be given, 1946-1947; to be given, 1947-1948.

- 110. Mineral Grain Analysis. (3) II.** Mr. Bramlette
Lecture, one hour; laboratory, six hours. Prerequisite: courses 109A, 109B (may be taken concurrently).
Methods in identification of minerals in grains; special emphasis on the elastic rocks, including mechanical analysis and immersion methods.

GRADUATE COURSES

- 281. Problems in Mineralography. (2 to 4) I.** Mr. Murdoch
282. Problems in Goniometry. (2 to 4) II. Mr. Murdoch
299. Research in Mineralogy. (1 to 6) I, II.
Mr. Bramlette, Mr. Murdoch, Mr. Durrell

PALEONTOLOGY:

UPPER DIVISION COURSES

- 111A-111B. Systematic Paleontology. (3-3) Yr.** Mr. Grant, Mr. Popenoe
Lectures, two hours; laboratory, three hours. Prerequisite: Geology 3 or Paleontology I.
A general introduction to the study of invertebrate fossils.
- 114. Micropaleontology. (3) I.** Mr. Bramlette
Lecture, one hour; laboratory, six hours. Prerequisite: Paleontology 111A-111B and Geology 102A, 102B.
A study of the microscopic fossils with special reference to age determination and correlation of strata in application to oil-field problems.
- 150. Advanced Micropaleontology. (3) II.** Mr. Bramlette
Lecture, one hour; laboratory, six hours. Prerequisite: course 114.

GRADUATE COURSES

- 215. Systematic Conchology and Echinology. (3) I.** Mr. Grant
Lecture, one hour; laboratory, six hours. Prerequisite: course 111A-111B, Geology 3.
An introduction to the classification and identification of the western American marine Cenozoic mollusca and echinoidea.
- 266. Seminar in Micropaleontology. (3) II.** Mr. Bramlette
Prerequisite: course 114.
- 299. Research in Paleontology. (1 to 6) I, II.** Mr. Bramlette, Mr. Grant

‡ Courses in vertebrate paleontology may be found under the announcement of the Department of Zoology (p. 296).

GERMANIC LANGUAGES

GUSTAVE OTTO ARLT, Ph.D., Professor of German.

FRANK H. REINSCH, Ph.D., Professor of German.

ALFRED KARL DOLCH, Ph.D., Associate Professor of German.

WILLIAM J. MULLOY, Ph.D., Associate Professor of German.

CARL WILLIAM HAGGE, Ph.D., Assistant Professor of German.

WAYLAND D. HAND, Ph.D., Associate Professor of German (Chairman of the Department).

VERN W. ROBINSON, Ph.D., Assistant Professor of German.

CHRISTEL B. SCHOMAKER, M.A., Assistant Professor of German.

* ERIK WAHLGREN, Ph.D., Assistant Professor of Scandinavian and German.

WILLIAM MELNITZ, M.A., Lecturer in German.

WILLIAM B. SCHAFFRATH, Ph.D., Lecturer in German.

EDITH A. SCHULZ, M.A., Lecturer in German.

ELI SOBEL, M.A., Lecturer in German.

Letters and Science List.—All undergraduate courses in German and Scandinavian Languages are included in the Letters and Science List of Courses. For regulations governing this list, see page 65.

Preparation for the Major.—Required: courses 1, 2, 3 (3L, 3P), 4, 6, and 7 or their equivalents. Recommended: History 4A-4B; English 1A-1B, 36A-36B; Philosophy 20 and 21.

The Major in German.—At least 30 units in upper division courses, including 106A, 106B, 109B, 117, 118A, 118B, and one course from each of the following groups: (1) 105, 108, 109A, 119; (2) 104A, 110, 111; (3) 104B, 114. Students looking forward to the secondary credential should take also 106C-106D. Students desiring a purely literary or philological major, not looking toward secondary teaching, should consult the departmental adviser regarding permissible substitutions of courses.

Requirements for Admission to Graduate Courses.

A candidate for admission to graduate courses in Germanic languages and literatures must meet, in addition to the general University requirements, the minimum requirements for an undergraduate major in this department. If the candidate is deficient in this prerequisite he must fulfill it by undergraduate work which is not counted toward his graduate residence.

Requirements for Advancement to Candidacy.

1. A reading knowledge of French.
2. A satisfactory reading and speaking knowledge of German.
3. A preliminary comprehensive examination in German literature, language, and history.

Requirements for the Master's Degree.

For the general requirements, see page 111. The Department of Germanic Languages favors the Comprehensive Examination Plan.

* Absent on leave, 1946-1947.

Requirements for the Ph.D. Degree.

For the general requirements, see page 114. For specific departmental requirements see the ANNOUNCEMENT OF THE GRADUATE DIVISION, SOUTHERN SECTION.

GERMAN

LOWER DIVISION COURSES

The ordinary prerequisites for each of the lower division courses are listed under the description of these courses. Students who have had special advantages in preparation may, upon examination, be permitted a more advanced program; or such students may be transferred to a more advanced course by recommendation of the instructor.

1. **Elementary German. (4) I, II.** Mr. Robinson in charge
This course corresponds to the first two years of high school German.
- 1G. **Elementary German for Graduate Students. (No credit.) I, II.** Mr. Reinsch in charge
Four hours a week.
2. **Elementary German. (4) I, II.** Mr. Robinson in charge
Prerequisite: course 1, or two years of high school German.
- ‡3. **Intermediate German. (4) I, II.** Mr. Mulloy in charge
Prerequisite: course 2 or three years of high school German.
Readings in literary German.
- ‡3L. **Intermediate German. (4) I, II.** Mr. Arlt in charge
Prerequisite: course 2 or three years of high school German.
Readings in the biological sciences.
- ‡3P. **Intermediate German. (4) I, II.** Mr. Hagge in charge
Prerequisite: course 2 or three years of high school German.
Readings in the physical sciences.
- ‡3S. **Intermediate German. (4) II.** Mr. Hagge in charge
Prerequisite: course 2 or three years of high school German.
Readings in the social sciences.
4. **Intermediate German. (4) I, II.** Mr. Mulloy in charge
Prerequisite: any one of courses 3, 3L, 3P, or 3S, or four years of high school German.
Advanced readings in literary German.
6. **Review of Grammar, Composition, and Conversation. (2) I, II.** Mr. Dolch in charge
Prerequisite: course 2 or three years of high school German.
7. **Rapid Readings in Nineteenth Century Literature. (2) I, II.** Mr. Reinsch in charge
Prerequisite: course 4 or the equivalent.
- 8A-8B. **German Conversation. (1-1.) Beginning each semester.** Mr. Schomaker in charge
The class meets two hours weekly. Open to students who have completed course 2 or its equivalent.

‡ Any two of the courses numbered 3, 3L, 3P, 3S, may be taken for credit.

- 42A-42B. German Civilization.** (2-2) Yr. Mr. Arlt
Lectures and reports. Conducted in English.
A general survey of the development of German civilization in its more important cultural manifestations.

UPPER DIVISION COURSES

The prerequisite for all upper division courses is course 4 or the equivalent. Junior standing is not required. Major students are also required to take courses 6 and 7.

- 104A-104B. Readings in the Drama of the Nineteenth and Twentieth Centuries.** (3-3) Yr. Mr. Robinson
Selected readings from nineteenth- and twentieth-century authors.
- 105. Lessing's Life and Works.** (3) I. Mr. Hagge
Lectures and reading of selected texts.
- 106A-106B. Grammar, Composition, and Conversation.** (2-2) Yr. Mr. Dolch
- 106C-106D. Grammar, Composition, and Conversation.** (2-2) Yr. Mr. Schomaker
Prerequisite: course 106A-106B.
- 108. Schiller's Life and Works.** (3) II. Mr. Hagge
Lectures and reading of selected texts.
- 109A. Introduction to Goethe.** (3) I. Mr. Reinsch
Goethe's prose.
- 109B. Goethe's Dramas.** (3) II. Mr. Reinsch
- 110. The German Lyric.** (3) II. Mr. Mulloy
Prerequisite: 6 units of upper division German, or the consent of the instructor.
A survey from 1750 to 1880.
- 111. German Narrative Prose.** (3) I. Mr. Mulloy
Prerequisite: 6 units of upper division German, or the consent of the instructor.
A survey from 1795 to 1880, with special reference to the *Novelle*.
- 114. German Literature from 1875 to the Present.** (3) II. Mr. Hand
Prerequisite: 6 units of upper division German, or the consent of the instructor.
A survey of representative prose and poetry.
- 117. History of the German Language.** (3) I. Mr. Dolch
Prerequisite: course 106A-106B or the consent of the instructor.
- 118A. History of German Literature.** (3) I. Mr. Arlt
Prerequisite: 6 units of upper division German, or the consent of the instructor.
The Middle Ages.
- 118B. History of German Literature.** (3) II. Mr. Arlt
Prerequisite: 6 units of upper division German, or the consent of the instructor.
From the Reformation to 1850.

119. **Middle High German.** (3) II. Mr. Dolch
Prerequisite: courses 117 and 118A.
Outline of grammar, selections from the Nibelungenlied, Kudrun, and the Court Epics.
- 121A. **German Literature in Translation.** (2) I. The Staff
Prerequisite: junior standing or familiarity with literary criticism. Not accepted as part of the major in German.
The classical period.
- 121B. **German Literature in Translation.** (2) II. The Staff
Prerequisite: junior standing or familiarity with literary criticism. Not accepted as part of the major in German.
The modern period.
- 199A-199B. **Special Study for Advanced Undergraduates.** (1 to 3) I, II. The Staff (Mr. Reinsch in charge)
Topics selected with the approval of the department and studied under the direction of one of the staff.

GRADUATE COURSES

201. **Bibliography and Methods of Literary History.** (2) I. Mr. Arlt
208. **The Sixteenth and Seventeenth Centuries.** (3) II. Mr. Arlt
210. **The Age of Goethe.** (3) II. Mr. Reinsch
212. **German Romanticism.** (3) I. Mr. Mulloy
213. **The Enlightenment and Pre-Romanticism.** (3) I. Mr. Hagge
222. **Goethe's *Faust*.** (2) II. Mr. Reinsch
225. **The Nineteenth-Century Drama.** (3) I. Mr. Robinson
226. **Naturalism.** (3) II. Mr. Hand
230. **Survey of Germanic Philology.** (3) I. Mr. Dolch
231. **Gothic.** (3) I. Mr. Dolch
232. **Old High German.** (3) II. Mr. Dolch
- *233. **Old Saxon.** (3) II. Mr. Dolch
239. **Readings in Middle High German Literature.** (3) II. Mr. Dolch
Prerequisite: course 119 or the equivalent.
- *251. **Seminar on the Age of Goethe.** (3) I. Mr. Reinsch
- *253. **Seminar in Nineteenth Century Literature.** (3) II. Mr. Mulloy
254. **Seminar in the Enlightenment and Pre-Romanticism.** (3) II. Mr. Hagge
257. **Seminar in Sixteenth and Seventeenth Century Literature.** (3) I. Mr. Arlt

* Not to be given, 1946-1947.

259. Seminar in Germanic Linguistics. (1 to 3) I, II. Mr. Dolch
Prerequisite: course 230 and one dialect or the equivalent.
- 298A-298B. Special Studies. (1-6; 1-6) Yr. The Staff

PROFESSIONAL COURSE IN METHOD

370. The Teaching of German. (3) II. Mr. Reinsch
Prerequisite: graduate standing in the Department of Germanic Languages. Required of all candidates for the general secondary credential in German. To be taken concurrently with Education 370.

SCANDINAVIAN LANGUAGES

LOWER DIVISION COURSES

- *1. Elementary Swedish. (4) I. Mr. Wahlgren
- *2. Intermediate Swedish. (4) II. Mr. Wahlgren
Prerequisite: course 1 or the equivalent.
- *11. Elementary Danish and Norwegian. (4) I. Mr. Wahlgren
- *12. Intermediate Danish and Norwegian. (4) II. Mr. Wahlgren

UPPER DIVISION COURSES

- *141. Modern Scandinavian Literature in English Translation. (3) II.
No prerequisite; open to all upper division students. Mr. Wahlgren

GRADUATE COURSES

- *243. Old Icelandic. (3) I. Mr. Wahlgren
- *244. Old Norse-Icelandic Prose and Poetry. (2) II. Mr. Wahlgren

RELATED COURSES (See page 194)

Folklore

145. Introduction to Folklore. (3) I. Mr. Hand
245. The Folk Tale. (2) II. Mr. Hand

* Not to be given, 1946-1947.

HISTORY

DAVID K. BJORK, Ph.D., Professor of History.

JOHN W. CAUGHEY, Ph.D., Professor of History (Chairman of the Department).

*ROLAND D. HUSSEY, Ph.D., Professor of History.

FRANK J. KLINGBERG, Ph.D., Professor of History.

LOUIS KNOTT KOONTZ, Ph.D., Professor of History.

WALDEMAR WESTERGAARD, Ph.D., Professor of History.

JOSEPH B. LOCKEY, Ph.D., Professor of History, Emeritus.

BRAINED DYER, Ph.D., Associate Professor of History.

CLINTON N. HOWARD, Ph.D., Associate Professor of History.

*JOHN W. OLMSTED, Ph.D., Associate Professor of History.

RICHARD O. CUMMINGS, Ph.D., Assistant Professor of History.

CHARLES L. MOWAT, Ph.D., Assistant Professor of History.

THEODORE A. SALOUTOS, Ph.D., Assistant Professor of History.

LUCY M. GAINES, M.A., Assistant Professor of History, Emeritus.

JERE C. KING, Ph.D., Instructor in History.

_____, Lecturer in History.

YU-SHAN HAN, Ph.D., Lecturer in History.

Letters and Science List.—All undergraduate courses in history are included in the Letters and Science List of Courses. For regulations governing this list, see page 65.

Preparation for the Major.—Required: (1) course 4A-4B or 5A-5B, to be taken in the freshman year, and (2) course 7A-7B or 8A-8B, to be taken in the sophomore year, or equivalent preparation for students transferring from other departments or other institutions. History majors who do not take course 4A-4B must take 6 units of European history in the upper division. History majors who do not take course 7A-7B must take 6 units of United States history in the upper division. Recommended: Political Science 3A-3B, Political Science 31, 32, Economics 1A-1B, Geography 1A-1B, and Philosophy 20, 21. One of these recommended courses may be substituted for one of the required history courses, with approval of the department.

Recommended: French, German, Latin, Spanish, Italian, or a Scandinavian language. For upper division work in history, a reading knowledge of one of these is usually essential. For language requirements for graduate work, see ANNOUNCEMENT OF THE GRADUATE DIVISION, SOUTHERN SECTION.

The Major.—Thirty units of upper division work in history and 9 units of approved upper division courses in an allied field or 6 units of approved upper division courses in each of two allied fields. The major must include a year sequence in European history and a year sequence in American history. A year sequence in European history may be composed as follows: course 111A-111B, or 121A-121B, or 131A-131B, or 142 and 143, or 143 and 144, or 144 and 145, or 152A-152B, or 153A-153B, or 154 and 155. A year sequence in American

* Absent on leave, 1946-1947.

history may be composed as follows: course 162A-162B, or 171 and 172, or 172 and 173, or 173 and 174, or 178 and 181, or 181 and 188. The major must also include course 197 or 198 and course 199 in a field for which preparation has been made in the junior year.

NOTE.—Students who started upper division work in history before September, 1946, may graduate with a major such as that described in the General Catalogue for 1945-1946. Such students may substitute course 197 or course 198 for the second semester of course 199.

Honors in History.—Inquiries regarding honors may be directed to the Chairman.

Graduate Work in History.—See the ANNOUNCEMENT OF THE GRADUATE DIVISION, SOUTHERN SECTION, and the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION, LOS ANGELES.

LOWER DIVISION COURSES

4A-4B. History of Europe. (3-3) Yr. Beginning either semester.

Mr. Bjork, Mr. Westergaard

Lectures, two hours; quiz section, one hour.

The growth of European civilization from the decline of the Roman Empire to the present time.

5A-5B. History of England and Greater Britain. (3-3) Yr. Beginning either semester.

Mr. Klingberg, Mr. Howard, Mr. Mowat

Lectures, two hours; quiz section, one hour.

The political, economic, and cultural development of the British Isles and the Empire from the earliest times to the present.

7A-7B. Political and Social History of the United States. (3-3) Yr. Beginning either semester.

Mr. Dyer, Mr. Cummings

Lectures, two hours; quiz section, one hour.

This course is designed for students in the social sciences who want a thorough survey of the political and social development of the United States as a background for their major work and for students in other departments who desire to increase their understanding of the rise of American civilization.

8A-8B. History of the Americas. (3-3) Yr. Beginning either semester.

Lectures, two hours; quiz section, one hour. Mr. Caughey

A study of the development of the Western Hemisphere from the discovery to the present. Attention in the first semester to exploration and settlement, colonial growth, imperial rivalries, and the achievement of independence. In the second semester, emphasis upon the evolution of the American nations and people in the nineteenth and twentieth centuries.

***9A. Great Personalities: United States. (2) I.**

Mr. Dyer

***9B. Great Personalities: Latin America. (2) II.**

Mr. Hussey

***9C. Great Personalities: Modern Europe and England. (2) II.**

Mr. Howard

***9D. Great Personalities: Ancient and Medieval Continental Europe. (2) I.**

***9E. Pacific Coast History. (2) I, II.**

Mr. Caughey

* Not to be given, 1946-1947.

46. Economic History of the United States. (3) I.

Mr. Cummings, Mr. Saloutos

Primarily for sophomores but open to other students.

UPPER DIVISION COURSES

The prerequisite for course 101 is upper division standing. The prerequisite for all other upper division courses is upper division standing and course 4A-4B, or 5A-5B, or 7A-7B, or 8A-8B, or other preparation satisfactory to the instructor.

101. Main Currents in American History. (3) I, II. Mr. Dyer, Mr. Saloutos

A one-semester survey of United States history, with emphasis upon the growth and development of American principles and ideals. Not open to students who have credit for course 7A or 7B. Not to be counted toward the major.

111A. Greek History to the Roman Conquest. (3) I.** _____111B. Roman History to the Accession of Augustus. (3) II.** _____***111C. The Roman Empire from Augustus to Constantine. (3) I.** _____***113. Roman Law. (3) II.*****114. History of the Founding of Christianity. (2).** _____**121A. The Early Middle Ages. (3) I.**

Mr. Bjork

Prerequisite: course 4A-4B or 5A-5B, or the consent of the instructor.

A survey of the main events of European history from the fall of the Roman Empire to about 1150 A.D.

121B. The Civilization of the Later Middle Ages. (3) II.

Mr. Bjork

Prerequisite: course 4A-4B or 5A-5B, or the consent of the instructor.

A survey of European history, 1150-1450, with emphasis upon social, cultural, religious, and economic foundations of western Europe.

***131A. Economic History of the Western World. (3) I.** _____

Prerequisite: course 4A-4B or 5A-5B, or Economics 1A-1B.

From early times to 1750.

***131B. Economic History of the Western World. (3) II.** _____

Prerequisite: course 4A-4B or 5A-5B, or Economics 1A-1B.

From 1750 to the present, with special emphasis on England, France, and Germany.

***141A-141B. Europe in Transition, 1450-1610. (2-2) Yr.**

141A. The Renaissance.

Mr. Olmsted, _____

141B. The Sixteenth Century.

142. Europe in the Seventeenth Century, 1610-1715. (3) I.

Mr. Olmsted, Mr. Westergaard

European culture, institutions, and politics from the Thirty Years' War to the death of Louis XIV.

* Not to be given, 1946-1947.

143. Europe in the Eighteenth Century, 1715-1815. (3) II.

Mr. Olmsted, Mr. Westergaard

European culture, institutions, and politics from the death of Louis XIV to the collapse of the Napoleonic Empire.

144. Europe from Napoleon to the Congress of Paris. (3) I. Mr. King

The history of Europe from the rise of Napoleon to the end of the Crimean War; a survey course including the study of international relations and internal conditions of the major European countries with special stress on the rise of nationalism and liberalism.

145. Europe from the Congress of Paris to the Peace Conference of Versailles. (3) II.

Mr. King

The history of Europe with special stress on the unification of Germany and Italy, the causes of the first World War, and the first World War itself.

146A. History of Slavic Europe and the Balkans. (3) I.

The history of Russia, Bohemia, Poland, Lithuania, and the Balkan nations from the origins to the end of the eighteenth century.

146B. History of Slavic Europe and the Balkans. (3) II.

The history of Russia, Poland, Serbia, Bulgaria, Roumania, and Greece from the Napoleonic period to the present in the light of internal conditions and European diplomacy.

147. Europe Since 1914. (3) I.

Mr. King

Political, economic, and cultural developments since the First World War.

148A-148B. Diplomatic History of Europe in the Nineteenth Century. (3-3) Yr.**152A-152B. Constitutional History of England. (3-3) Yr.** Mr. Howard
A study of the growth of the institutions of British government.**153A-153B. History of the British People in Modern Times. (3-3) Yr.**

Mr. Klingberg, Mr. Howard, Mr. Mowat

Not open to students who have had courses 154 or 155.

A study of the main currents in the thought, culture, and social progress of the British people from Henry VIII to the death of Victoria.

***154. Great Britain in the Seventeenth Century (1588-1688). (3) I.**

Not open to students who have had 153A.

Mr. Howard

A study of the various factors in English life, political, social, economic, religious, and intellectual, at the time of the Civil Wars, the Restoration, and the Revolution.

***155. Great Britain in the Eighteenth Century (1688-1783). (3) II.**

Not open to students who have had 153A.

Mr. Howard

The structure of the British government, society, and economic life under Hanoverians.

157. Great Britain in the Twentieth Century. (3) II.

Mr. Mowat

The changing British scene in war and peace from the accession of Edward VII to the present.

* Not to be given, 1946-1947.

- *158A-158B. The British Empire since 1783. (3-3) Yr.** Mr. Mowat
The political and economic development of the British Empire, including the imperial policies of Great Britain, the evolution of the commonwealth idea, the growth of the colonial empire, and the trends in British colonial policy.
- 159. History of Canada. (3) I.** Mr. Mowat
A survey of the growth of Canada from its beginnings under the French and British colonial empires into a modern nation-state.
- *160. History of the Caribbean. (3) I.** Mr. Hussey
- *161. History of Spain and Portugal. (3) I.** Mr. Hussey
The history of Spain from early times to the present.
- 162A-162B. Hispanic America from the Discovery to the Present. (3-3) Yr.**
- 166A-166B. History of Mexico. (2-2) Yr.**
The development of the viceroyalty of New Spain and the Mexican nation, with emphasis upon the problems of the period since Díaz.
- *169. History of Inter-American Relations. (3) II.** Mr. Caughey
- 171. The United States: Colonial Period. (3) I.** Mr. Koontz
Political and social history of the Thirteen Colonies and their neighbors; European background, settlement and westward expansion, intercolonial conflicts, beginnings of culture, colonial opposition to imperial authority.
- 172. The United States: The New Nation. (3) II.** Mr. Koontz
Political and social history of the American nation from 1750 to 1815, with emphasis upon the rise of the New West; revolution, confederation, and union; the fathers of the Constitution; the New Nationalism.
- 173. The United States: Civil War and Reconstruction. (3) I.** Mr. Dyer
The topics studied will include: the rise of sectionalism, the anti-slavery crusade; the formation of the Confederate States; the war years; political and social reconstruction.
- 174. The United States: The Twentieth Century. (3) II.** Mr. Dyer, Mr. Cummings
A general survey of political, economic, and cultural aspects of American democracy in recent years.
- 176. American Reform Movements and Reformers. (3) II.** Mr. Saloutos
A study of educational, monetary, labor, and agrarian reforms advocated in the nineteenth and twentieth centuries.
- 178. History of the Foreign Relations of the United States. (3) I.** Mr. Cummings
A general survey of American diplomacy from the Revolution to the Paris Peace Conference of 1919.
- 179. Constitutional History of the United States. (3) II.** Mr. Dyer
A study of the Federal Constitution from the historical point of view with emphasis upon the constitutional convention and the constitutional controversies of the nineteenth century.

* Not to be given, 1946-1947.

- *181. The Westward Movement and the West. (3) I.** Mr. Caughey
 Recommended preparation: course 8A-8B.
 A study of the advance of the American frontier, particularly in the trans-Mississippi West, and an analysis of the distinguishing characteristics of the West in the past half-century.
- 188. History of California. (3) II.** Mr. Caughey
 Recommended preparation: course 8A-8B or 39.
 The economic, social, intellectual, and political development of California from the earliest times to the present.
- 190. History of the Pacific Area. (3) I.** Mr. Caughey
 Exploration, trade, international rivalries, and social evolution in the Pacific Ocean and in the lands immediately tributary thereto, from the first European contacts to the present. Emphasis on the role of the United States.
- 191A. History of the Far East. (3) I.** Mr. Han
 China and Japan from the earliest times to the beginning of westernization.
- 191B. History of the Far East. (3) II.** Mr. Han
 Transformation of the Far East in modern times under the impact of western civilization.
- 192A-192B. The Twentieth-Century Far East. (2-2) Yr.** Mr. Han
 A study of the social, economic, and political development of the Far Eastern countries since 1898, with special attention to the changes in ideas and institutions after a century of Western impact.
- 196A. Early India and the Indies. (3) I.** Mr. Han
 India from the Vedic period to the decline of the Mogul Empire; colonial rivalries of the European powers in the Indian Ocean area; establishment of the Dutch empire in the East Indies.
- 196B. History of British India. (3) II.** Mr. Han
 History of the British Empire in India, Burma, and Malaya.
- 197. Aids to Historical Research. (3) II.** Mr. Bjork
 Study of the auxiliary sciences. A senior course.
- 198. History and Historians. (3) I, II.** The Staff
 A study of historiography, including the intellectual processes by which history is written, the results of these processes, and the sources and development of history. Attention also to representative historians. A senior course.
- 199. Special Studies in History. (3) I, II.** The Staff
 An introduction to historical method, followed by individual investigation of selected topics.
 Required of all history majors. To be taken in the senior year in a field for which specific preparation has been made in the junior year.
- °Section 1. Ancient History. _____
 °°Section 2. Medieval History. _____
 °Section 3. European History. _____
 °°Section 4. European History. _____
- Mr. Bjork, _____
 Mr. Westergaard, _____
 Mr. King, _____

* Not to be given, 1946-1947.

° To be given only in the spring semester, 1946-1947.

°° To be given only in the fall semester, 1946-1947.

Section 5. English History.	Mr. Howard, Mr. Mowat
°°Section 6. American Colonial History.	Mr. Koontz
*Section 7. The American Revolution.	_____
Section 8. Recent United States History.	Mr. Cummings, _____
°°Section 9. Hispanic-American History.	_____
*Section 10. Pacific Coast History.	Mr. Caughey

GRADUATE COURSES

*201. Historiography and Bibliography. (3) I.	Mr. Hussey
254A-254B. Seminar in Medieval History. (3-3) Yr.	Mr. Bjork
257A-257B. Seminar in European History. (3-3) Yr.	Mr. Westergaard
Studies in continental European history prior to 1914.	
*259A-259B. Seminar in European History. (3-3) Yr.	_____
260A-260B. Seminar in English History. (3-3) Yr.	Mr. Howard
Studies in the Stuart period.	
261A-261B. Seminar in English History. (3-3) Yr.	Mr. Klingberg
Studies of England in the nineteenth century.	
*262A-262B. Seminar in English History. (3-3) Yr.	_____
Studies in the reform movements of the nineteenth century.	
265A-265B. Seminar in Hispanic-American History. (3-3) Yr.	_____
Studies in the colonial and early national periods.	
269A-269B. Seminar in United States History. (3-3) Yr.	Mr. Koontz
Studies in the colonial frontier.	
*271A-271B. Seminar in United States History. (3-3) Yr.	_____
Studies in recent United States history.	Mr. Cummings
272A-272B. Seminar in United States History. (3-3) Yr.	Mr. Dyer
Studies in political and social problems of the middle nineteenth century.	
274A-274B. Seminar in Pacific Coast History. (3-3) Yr.	Mr. Caughey
290. Research in History. (1 to 6) I, II.	The Staff

PROFESSIONAL COURSE IN METHOD

*370. The Teaching of History and Social Studies. (3) I, II.	_____
This course may be counted in partial fulfillment of the 18-unit requirement in education for the General Secondary Credential. Recommended to be taken in senior year.	

RELATED COURSES IN OTHER DEPARTMENTS

*Greek 42A-42B. Greek Civilization. (2-2) Yr.	Mr. Friedlander
Latin 42A-42B. Roman Civilization. (2-2) Yr.	Mr. Friedlander
*Latin 196A-196B. Readings in Medieval Latin. (2-2) Yr.	_____

* Not to be given, 1946-1947.

** To be given only in the fall semester, 1946-1947.

HOME ECONOMICS

- HELEN B. THOMPSON, Ph.D., Professor of Home Economics, Emeritus.
 VEZ B. GODDARD, Ph.D., Associate Professor of Home Economics (Acting
 Chairman of the Department).
 GRETA GRAY, Ph.D., Associate Professor of Home Economics.
 MARGUERITE G. MALLON, Ph.D., Assistant Professor of Home Economics.
 ELIZABETH LATHROP, M.A., Associate in Home Economics.
 CLARICE H. LINDSEY, Associate in Home Economics.
 NORMA N. SHENK, Ed.B., Associate in Home Economics.
 FLORENCE A. WILSON, M.A., Associate in Home Economics.
-
- ETHEL M. MARTIN, Ed.B., Lecturer in Home Economics.
 WENDY STEWART, LL.B., M.D., Lecturer in Home Economics.

College of Applied Arts

The Department of Home Economics offers six majors:

A. *The General Major in Home Economics, for students working toward the general elementary teaching credential, or for those who wish home economics as a background for homemaking.*

Preparation for the Major.—Courses 1A-1B, 11A-11B, Art 21A, 42, Chemistry 2A, 10, Zoölogy 13.

The Major.—Courses 100, 109, 118, 120, 143, 162A-162B, 168, 10 or 11 units selected from 150, 164A-164B, 170, 175, 176, and additional courses to total 36 units selected from one of the following groups: Group I, Art 101A-101B, 132A-132B, 147A-147B, 156A-156B, 168A, 173, 180, 183A-183B; Group II, Psychology 107A-107B, 110, 112, 135, 137A-137B, 145A-145B; Group III, Physical Education 130, 141, 142, 145A-145B (or 146), 150, 155A-155B; Group IV, Zoölogy 101, 104, 105, 106, 112, 113, 113C; Group V, Economics 100A-100B, 106, 107, 150, Geography 100, 108, 113.

B. *The Major for Prospective Home Economics Teachers.*

Preparation for the Major.—Courses 1A-1B, 11A-11B, Art 2A or 42, 21A, Chemistry 1A-1B, 8 or 10, Psychology 21, 22, Zoölogy 13.

The Major.—Courses 100, 108, 118, 119, 120, 143, 150, 162A-162B, 168, 175, 3 or 4 units chosen from other home economics courses, and additional units chosen from Art 101A-101B, 156A-156B, Physical Education 141, 142, Psychology 110, 112, to make a total of 36.

C. *The Dietetics Major, for students preparing for dietetic internships.*

Preparation for the Major.—Courses 11A-11B, Bacteriology 1, Business Administration 1A, Chemistry 1A-1B, 8, Economics 1A-1B, English 1A-1B or Public Speaking 1A-1B, Psychology 21, 22, Zoölogy 13.

The Major.—Courses 100, 110, 118, 119, 120, 136A-136B, 159, 370 (or Psychology 110), Business Administration 153, 180 (or Agricultural Economics 101A), and additional units chosen from other home economics courses, Agricultural Economics 104, Economics 150, Psychology 112, Public Health 101A-101B, to make a total of 36.

D. The Major in Food and Nutrition, for students preparing for promotional work with food or utility companies.

Preparation for the Major.—Courses 11A–11B, Art 2A or 42, Business Administration 1A, Bacteriology 1, Chemistry 1A–1B, or 2A, 8 or 10, Economics 1A–1B, English 1A, Public Speaking 1A, Physics 10A–10B, Zoölogy 13.

The Major.—Courses 100, 110, 118, 120, 136A–136B, 162A–162B, Business Administration 140, 180 (or Agricultural Economics 101A), and additional units selected from other home economics courses, Business Administration 185, Psychology 101, to make a total of 36.

The minor should be chosen after consultation with the departmental adviser.

E. The Major in Foods and Nutrition, for students preparing for graduate work or research positions.

Preparation for the Major.—Courses 11A–11B, Bacteriology 1, Chemistry 1A–1B, 8, Mathematics C and 1 (or the equivalent), 3A–3B, Physics 2A–2B, Zoölogy 13.

The Major.—Courses 100, 110, 118, 119, 120, 159, the remainder of the 36-unit major to be selected from 143, 150, 162A–162B, 168, 199, Bacteriology 103, Physics 107A, 113, Chemistry 109A–109B, Sociology 120, 181, Statistics 131A–131B, Zoölogy 118.

The minor should be in chemistry and should include Chemistry 6A and 9.

F. The Major in Clothing.

Preparation for the Major.—Courses 1A–1B, Art 2A–2B, 21A, 32A, Chemistry 1A–1B, 8, Economics 1A–1B.

The Major.—Courses 107, 108, 109, 162A, 170, 175, 176, Art 101B, 183A–183B, Psychology 101, and additional units chosen from 143, 162B, 168, 199, and upper division courses in art to make a total of 36.

College of Letters and Science

Letters and Science List.—All undergraduate courses except 107, 108, 109, 150, 175, and 176 are included in the Letters and Science List of Courses. For regulations governing this list, see page 65.

Laboratory Fees.—Courses 1A, 1B, 175, 176, \$1.50; 108, 136A, 136B, 150, \$2; 100, 119, 199A–199B (Sec. 2), \$2.50; 110, \$3.50; 11A, 11B, \$4; 120, \$5; 107, \$6; 159, \$7.

LOWER DIVISION COURSES

1A. Elementary Clothing. (3) I, II.

Miss Wilson, Miss Lathrop
Prerequisite: matriculation credit in "clothing" or Art 2A or 42. Fee, \$1.50.

Fundamental problems of clothing construction, including the use of commercial patterns and the selection, care, and use of equipment.

1B. Elementary Clothing. (3) I, II.

Miss Wilson
Prerequisite: course 1A. Fee, \$1.50.

Problems involved in clothing and textile buying; an elementary study of textiles, with attention to prices, quality differences, consumer aids, labels, advertising, and the selection of suitable textiles and designs.

11A-11B. Elementary Experimental Food Study. (3-3) Yr. Beginning either semester.

Prerequisite: high school chemistry or Chemistry 1A or 2A. Fee, \$4 a semester.

The classification, occurrence, and general properties of foodstuffs; the principles involved in food preparation and preservation; development of recipes under controlled conditions; practice in judging food preparations and in meal service.

92. Elements of Nutrition. (2) I, II. Miss Mallon, Miss Goddard

Prerequisite: 6 units of natural science.

The principles of nutrition and their application in normal conditions of growth and physical development. Family food budgets and food habits in relation to nutritive requirements.

100. Food Economics. (3) I, II.

Prerequisite: course 11B. Fee, \$2.50.

The production and distribution of food; grades and standards; legal controls; the cost to consumers and the relations to nutritive values.

UPPER DIVISION COURSES

107. Pattern Analysis. (3) II.

A study of drafting and grading of patterns in relation to the problems of design. Fee, \$6.

108. Textiles. (2) II.

Miss Wilson

Prerequisite: course 1B, Chemistry 10. Fee, \$2.

A study of chemical and physical properties of textile materials with opportunity to apply textile analysis to problems in retail buying.

109. Textile Fabrics. (2) I.

A study of textiles, the weaves, finishes, dyes and designs as they affect quality, manipulation, use, and care.

110. Food Analysis. (3) I.

Miss Goddard

Prerequisite or concurrent: course 118. Fee, \$3.50.

The application of qualitative and quantitative methods to the study of foods.

118. Nutrition. (3) II.

Miss Mallon

Prerequisite: Chemistry 8 or 10, Zoölogy 13.

The chemistry of digestion and the metabolism of carbohydrates, fats, and proteins; study of minerals and vitamins in relation to human nutrition.

119. Nutrition Laboratory. (2) I, II.

Miss Goddard

Prerequisite or concurrent: course 118. Fee, \$2.50.

A chemical study of the components of food, the products of digestion, and the constituents of tissues.

120. Diet in Health and Disease. (3) I, II.

Miss Mallon

Prerequisite: courses 11A, 11B, 118. Fee, \$5.

Human requirements for dietary essentials for infancy, childhood, adult life; dietary calculations; modification of normal diet for specific diseases.

136A-136B. Institution Economics. (3-3) Yr.

Prerequisite: course 11B and Economics 1A-1B. Fee, \$2 a semester.

The economic principles and problems involved in the organization and administration of institution households such as residence halls, hotels, hospitals, and school lunchrooms.

143. Child Care. (2) II.

Miss Stewart

Prerequisite: Psychology 21, 22; Zoölogy 13.

Physical development of children from prenatal through adolescent life. Discussion of problems concerned with the care of children in the home.

150. Family Food Service. (3) II.

Prerequisite: course 11A-11B, 118, Art 2A or 42. Fee, \$2.

Organization and management of family food service at different economic levels. Emphasis is placed on standard products, meal service, use and care of kitchen and dining equipment.

159. Metabolism Methods. (3) II.

Miss Goddard

Prerequisite: course 110 or the equivalent. Fee, \$7.

Observations of the influence of special diets upon various phases of metabolism; practice in the methods of determining blood constituents, basal metabolic rate, and nitrogen and mineral excretions.

162A. The Economic Problems of Families. (2) I.

Miss Gray

Distribution of families as to size, composition, domicile, income, and expenditures. Economic and social developments which have influenced the activities of the members of the household and brought about changes in the family's economic problems and standards of living.

162B. Management of Individual and Family Finances. (2) II.

Miss Gray

Methods of payment for goods, budgeting, property laws, investments, and insurance; the business cycle as a factor in financial planning.

164A-164B. Housing. (2-2) Yr.

Miss Gray

The contemporary housing situation, essentials of healthful housing, improvement in housing, and municipal, state, and federal activities.

168. Family Relationships. (2) I.

Miss Stewart

Discussions of the contributions of the family to personal and group well-being, of problems of the modern family, and of bases for satisfying family relationships and for successful family life.

170. Clothing Economics. (3) II.

Miss Lathrop

Methods of clothing production and distribution and their effects on clothing costs and values; the consumption of clothing.

175. Dress Design. (3) I, II.

Miss Wilson, Miss Lathrop

Prerequisite: course 1A, Art 21. Fee, \$1.50.

The design, fashion, construction, and economic factors involved in selecting and in making tailored garments.

176. Advanced Dress Design. (3) II.

Miss Lathrop

Prerequisite: course 175. Fee, \$1.50.

French draping; selection and manipulation of fabrics; creation of original designs.

199A-199B. Problems in Home Economics. (2-4; 2-4) Yr. The Staff
 Prerequisite: senior standing with such special preparation as the problem may demand. Section 1, field investigations and statistical studies; the expense of the problem to be met by the student. Section 2, laboratory; fee, \$2.50 a semester.

Assigned problems for individual investigation, the work of each student to be directed by the instructor in whose division of the field the problem lies.

GRADUATE COURSES

251. Seminar in Nutrition. (2) I. Miss Mallon
 Recent advances in the science of nutrition and in the dietetic treatment of disease.

255. Food Technology. Seminar. (2) II. _____

262. Personal and Family Economics. Seminar. (2) II. Miss Gray
 Review of budget studies representative of various levels of living and of those based on quantity budgets.

282A-282B. Selected Problems. (2-4; 2-4) Yr.
 Miss Gray, Miss Goddard, Miss Mallon, _____
 Laboratory or field investigation in nutrition, foods, or household economics.

PROFESSIONAL COURSE IN METHOD

370. Principles of Home Economics Teaching. (3) II. Mrs. Martin
 Prerequisite: courses 1A, 1B, 11A, 11B, 143, 168.
 The development of home economics as an educational movement; homemaking courses and their presentation in high schools; homemaking activities in the elementary school; critical review of texts and references in relation to curriculum requirements in different types of schools.

HORTICULTURE

A Division of the Department of Agriculture

SIDNEY H. CAMERON, Ph.D., Professor of Subtropical Horticulture (Head of the Division).

WILLIAM H. CHANDLER, Ph.D., Professor of Horticulture.

FREDERICK F. HALMA, Ph.D., Professor of Subtropical Horticulture.

ROBERT W. HODGSON, M.S., Professor of Subtropical Horticulture.

VERNON T. STOUTEMYER, Ph.D., Professor of Ornamental Horticulture.

JACOB B. BIALE, Ph.D., Assistant Professor of Subtropical Horticulture.

CHARLES A. SCHROEDER, Ph.D., Assistant Professor of Subtropical Horticulture.

PAUL F. SMITH, Ph.D., Instructor in Subtropical Horticulture.

Preparation for the Major.—Horticulture 2 and 10 or the equivalent, and the requirements in the Plant Science Curriculum (see pages 88, 89 of this catalogue, or the PROSPECTUS OF THE COLLEGE OF AGRICULTURE).

The Major.—Twelve units of upper division courses. Inclusion of Horticulture 100, 101, and 102 is recommended for those who plan to specialize in fruit culture.

Laboratory Fee.—Course 100, \$3.50.

LOWER DIVISION COURSES

2. Elements of Fruit Production. (3) I.

Mr. Chandler

Prerequisite: Botany 1A-1B or equivalent. This course is equivalent to Horticulture 2A, given at Berkeley and at Davis.

The principles and practices of fruit growing, with special reference to subtropical regions. The climatic, soil, and moisture requirements and adaptations of fruit trees; selection of site, propagation, planting, orchard management practices, harvesting, and preparation for market.

10. Plant Propagation. (2) II.

Mr. Cameron

Laboratory, six hours. Prerequisite: Botany 1A-1B.

The principles of plant propagation, with special reference to horticultural plants.

UPPER DIVISION COURSES

100. Systematic Pomology. (4) I.

Mr. Schroeder

Lectures, two hours; laboratory, six hours. Prerequisite: course 2 or the equivalent. Fee, \$3.50.

The botanical classification and relationships of the principal fruits; horticultural races and groups; growth and bearing habits; bud and fruit morphology; varietal characters.

101. Citriculture. (4) II.

Mr. Hodgson, Mr. Schroeder

Lectures, three hours; laboratory, three hours; four Saturday field trips. Prerequisite: Chemistry 1A-1B, course 2 or the equivalent.

The characteristics of the citrus fruits and their responses to environmental influences and cultural practices; the economics of the citrus fruit industry.

102. Subtropical Fruits Other Than Citrus. (3) I. Mr. Halma
Lectures, three hours; three Saturday field trips. Prerequisite: course 2 or the equivalent.

A survey of the knowledge concerning the requirements and responses of the subtropical fruit plants other than *Citrus*; the economics of their industries. The fruits considered will include the walnut, pecan, almond, fig, olive, avocado, date, oriental persimmon, and certain others of minor importance.

104. Advanced Horticulture. (3) I. Mr. Cameron
Lectures and discussions, three hours. Prerequisite: course 2 or the equivalent, Botany 7 or the equivalent, course 100, and course 102.

An analysis of the knowledge concerning the responses of fruit trees to environmental and cultural influences, with special reference to subtropical regions.

113. Fruit Physiology and Storage Problems. (2) II. Mr. Biale
Lectures and discussions, two hours. Prerequisite: the consent of the instructor.

Ripening processes of fruit on the tree; maturity standards and tests; ripening and respiration as affected by the ethylene gas treatment; chemical and physiological changes at low temperatures; cold storage and refrigerated gas storage; role of volatile substances; differences in species and varietal responses.

***131A-131B. Taxonomic Classification and Ecology of Ornamental Plants. (3-3) Yr.**

Lectures, two hours; laboratory, three hours. Prerequisite: courses 2 and 10, or the equivalent (course 10 may be taken concurrently). Offered in alternate years.

The botanical classification, relationships, and identification of the more important ornamental plants in southern California, with special emphasis on their environmental requirements and adaptations.

136. General Floriculture. (4) I. Mr. Stoutemyer
Lectures, two hours; laboratory, six hours. Prerequisite: courses 2 and 10, or the equivalent (course 10 may be taken concurrently).

Principles and practices of general floriculture, with special reference to the more important flower crops grown in California.

199A-199B. Special Study for Advanced Undergraduates. (2-4; 2-4) Yr.
The Staff

Prerequisite: senior standing and the consent of the instructor.

GRADUATE COURSES

255A-255B. Seminar in Horticultural Science. (2-2)
The Staff (Mr. Biale in charge)

281A-281B. Research in Plant Science. (2-6; 2-6) Yr. The Staff

* Not to be given, 1946-1947.

ITALIAN

For courses in Italian, see under Department of Spanish and Italian.

IRRIGATION AND SOILS

A Division of the Department of Agriculture.

MARTIN R. HUBERTY, Engr., Professor of Irrigation (Head of the Division)
ARTHUR F. PILLSBURY, Engr., Assistant Professor of Irrigation.

DAVID APPLEMAN, Ph.D., Associate Professor of Plant Nutrition.

The Major.—The major is offered only on the Davis campus. See the PROSPECTUS OF THE COLLEGE OF AGRICULTURE and consult the appropriate adviser for students in Agriculture.

UPPER DIVISION COURSES

110. Principles of Irrigation. (4) I. Mr. Pillsbury
Lectures, three hours; laboratory, three hours. Prerequisite: Physics 2A-2B or the equivalent.

Irrigation as a factor in agriculture; soil-plant water relations; hydraulics of farm irrigation systems.

199A-199B. Special Study for Advanced Undergraduates. (2-4; 2-4) Yr.
Mr. Huberty, Mr. Pillsbury

Prerequisite: senior standing and the consent of the instructor.

LIFE SCIENCES GROUP

BENNET M. ALLEN, Ph.D., Professor of Zoölogy (Chairman of the Group).

This group is composed of the departments of Bacteriology, Zoölogy and the Division of Botany of the Department of Agriculture, and has been organized for the purpose of unifying and coördinating the activities in these fields. Although no attempt is made to curtail the free development of each department, the special committee in charge of the Life Sciences Group endeavors to articulate, for their mutual benefit, the courses and research work of the three departments concerned.

Letters and Science List.—All courses.

BIOLOGY

LOWER DIVISION COURSES

1. Fundamentals of Biology. (8) I, II. Mr. Cowles, Mr. Haupt, Miss Scott
Students who have taken or are taking Botany 1A or Zoölogy 1A or 15 will not receive credit for Biology 1.

12. General Biology. (8) II. Mr. Cowles
Lectures, three hours; demonstration, one hour; one required field trip in the semester. Prerequisite: course 1, Botany 1A, or Zoölogy 15.

MATHEMATICS

EDWIN F. BECKENBACH, Ph.D., Professor of Mathematics.

PAUL H. DAUS, Ph.D., Professor of Mathematics (Chairman of the Department).

GEORGE E. F. SHEERWOOD, Ph.D., Professor of Mathematics.

I. S. SOKOLNIKOFF, Ph.D., Professor of Mathematics.

CLIFFORD BELL, Ph.D., Associate Professor of Mathematics.

PAUL G. HOEL, Ph.D., Associate Professor of Mathematics.

GLENN JAMES, Ph.D., Associate Professor of Mathematics.

ANGUS E. TAYLOR, Ph.D., Associate Professor of Mathematics.

———, Associate Professor of Mathematics.

JOHN W. GREEN, Ph.D., Assistant Professor of Mathematics.

WILLIAM T. PUCKETT, JR., Ph.D., Assistant Professor of Mathematics.

ROBERT H. SORGENFREY, Ph.D., Assistant Professor of Mathematics.

FREDERICK A. VALENTINE, Ph.D., Assistant Professor of Mathematics.

EUPHEMIA R. WORTHINGTON, Ph.D., Assistant Professor of Mathematics.

———, Assistant Professor of Mathematics.

HARRIET E. GLAZIER, M.A., Assistant Professor of Mathematics, Emeritus.

GUY H. HUNT, C.E., Assistant Professor of Applied Mathematics, Emeritus.

———, Instructor in Mathematics.

———, Instructor in Mathematics.

Letters and Science List.—All undergraduate courses in mathematics and statistics are included in the Letters and Science List of Courses. For regulations governing this list, see page 65.

Preparation for the Major.—Required: courses C (or the equivalent), 1, 3A, 3B, 4A, 4B, with an average grade of C or higher, except that students who have completed two years of high school algebra and also trigonometry may be excused, upon examination, from course 1. Recommended: physics, astronomy, and a reading knowledge of French and German.

The Major.—Courses 108, 112A, and 119A, together with enough additional upper division units to total 24, must be included in every mathematics major. At most 3 of these units may be taken in related courses in other departments, provided approval has been obtained in advance from a departmental adviser. The student must maintain an average grade of at least C in upper division courses in mathematics.

Students who are preparing to teach mathematics in high school are advised to elect courses 100, 108, 370.

Students who expect to continue with graduate study are advised to elect courses 111A and 122A-122B.

Business Administration.—Freshmen in this College are required to take courses E and 2.

Engineering.—Lower division students in this College are required to take courses 1, 3A, 3B, 4A, 4B, except that students who have completed two years of high school algebra and also trigonometry may be excused, upon examination, from course 1.

LOWER DIVISION COURSES

C. Trigonometry. (3) I, II.

Mr. Bell in charge

Prerequisite: plane geometry and one and one-half years of high school algebra or course D. Students with one and one-half years of high school algebra may enroll in course C concurrently with course D.

Course C includes plane trigonometry and spherical right triangles.

Two units of credit will be allowed to students who have had trigonometry in high school.

D. Intermediate Algebra. (3) I, II.

Mr. Valentine in charge

Prerequisite: one year or one and one-half years of high school algebra. Students who need extra review and drill will be required to attend the class five times a week. Not open for credit to students who have received credit for two years of high school algebra, course E, 1, or 3A.

E. Commercial Algebra. (3) I, II.

Mr. Valentine in charge

Prerequisite: at least one year of high school algebra. Prescribed in the College of Business Administration. Not open for credit to students who have credit for courses D, 1, or 2.

1. College Algebra. (3) I, II.

Mr. Valentine in charge

Prerequisite: two years of high school algebra and also trigonometry or course C concurrently. Not open for credit to students who have received credit in courses D, E, or 3A.

1-3A. College Algebra and Plane Analytic Geometry. (6) I.

Mr. Valentine in charge

Prerequisite: two years of high school algebra and also trigonometry. A combination of courses 1 and 3A. Students who have received credit in course D or E cannot receive credit for course 1.

2. Mathematics of Finance and Business. (3) I, II.

Mr. James in charge

Prerequisite: course D, E, or 1.

Students who have had two years of high school algebra and trigonometry may be excused from course E by examination. This examination will be given the Thursday afternoon before the start of classes. Applicants for this examination must be registered in course E and make previous arrangements with the instructor in charge of course E. Credit for course E by special examination may be obtained under rule 460 for those who qualify.

3A. Plane Analytic Geometry. (3) I, II.

Miss Worthington in charge

Prerequisite: course C or high school trigonometry, and course D or 1.

Students who have had two years of high school algebra and trigonometry may be excused from course 1 by examination. This examination will be given the Thursday afternoon before the start of classes. Applicants for this examination must be registered in course 1 and make previous arrangements with the instructor in charge of course 1. Credit for course 1 by special examination may be obtained under rule 460 for those who qualify.

3B. First Course in Calculus. (3) I, II.

Mr. Sherwood in charge

Prerequisite: course 3A.

Differentiation of algebraic and transcendental functions with applications.

- 3A-3B. Analytic Geometry and First Course in Calculus.** (6) I, II.
Miss Worthington in charge
Prerequisite: course C or high school trigonometry, and course D or 1.
- 4A. Second Course in Calculus.** (3) I, II. Mr. Sherwood in charge
Prerequisite: course 3B.
Integration with applications; infinite series.
- 4B. Third Course in Calculus.** (3) I, II. Mr. Sherwood in charge
Prerequisite: course 4A.
Solid analytic geometry, partial differentiation, multiple integration with applications.
Required in the lower division for majors in mathematics and engineering. Upper division credit will be allowed to others who take the course while in the upper division.
- *4A-4B. Second and Third Courses in Calculus.** (6).
Prerequisite: course 3B. Mr. Sherwood in charge
- 7. Mathematics for Social and Life Sciences.** (3) II. Mr. Hoel
Prerequisite: course D or 1.
This course gives in brief form an introduction to analytic geometry and the calculus, and other mathematical material particularly designed for students of the social and life sciences.
- 18. Fundamentals of Arithmetic.** (2) I, II. Miss Worthington, Mr. Bell
Prerequisite: sophomore standing.

UPPER DIVISION COURSES

- 100. College Geometry.** (3) I. Mr. Bell
Prerequisite: course 4A.
Selected topics in geometry with particular emphasis on recent developments.
- 108. Theory of Algebraic Equations.** (3) I, II. _____
Prerequisite: course 4A.
- 110A-110B. Advanced Engineering Mathematics.** (2-2) Yr. Mr. Sokolnikoff
Prerequisite: course 4B. Prescribed for students in the mechanical and electrical engineering curricula. Not open for full credit to students who have credit for course 119A.
Fourier series, partial differentiation, line integrals, differential equations, vector analysis.
- 110AB. Advanced Engineering Mathematics.** (4) I, II. Mr. Sokolnikoff
- 111A. Introduction to Higher Algebra.** (3) II. _____
Prerequisite: course 108.
Selected topics in algebra, with particular reference to modern points of view.

* Not to be given, 1946-1947.

- 112A. Introduction to Higher Geometry. (3) II. Mr. Daus
 Prerequisite: course 108, completed or taken concurrently.
 Homogeneous point and line coördinate, cross ratio, one and two dimensional projective geometry, point and line conics.
- *112B. Introduction to Metric Differential Geometry. (3) I. Mr. James
 Prerequisite: course 119A, or the consent of the instructor.
113. Synthetic Projective Geometry. (3) I. Mr. Daus
 Prerequisite: course 112A, or consent of the instructor.
- *115A. Theory of Numbers. (3) II. _____
 Prerequisite: course 108, or consent of instructor.
 Divisibility, congruences, diophantine analysis.
- 119A. Differential Equations. (3) I, II. Miss Worthington
 Prerequisite: course 4B. Not open for full credit to students who have credit for course 110A-110B.
- 122A-122B. Advanced Calculus. (3-3) Yr. Mr. Valentine
 Prerequisite: course 4B.
125. Analytic Mechanics. (3) I. Mr. Taylor
 Prerequisite: course 119A or 110A-110B, and Physics 105.
126. Potential Theory. (3) II. Mr. Green
 Prerequisite: course 4B and one year of college physics.
135. Numerical Mathematical Analysis. (3) II. Mr. Hoel
 Prerequisite: course 4A.
199. Special Problems in Mathematics. (3) I, II. The Staff
 Prerequisite: the consent of the department.

GRADUATE COURSES

- *208. Foundations of Geometry. (3) I. Mr. Daus
211. Higher Plane Curves. (3) II. Mr. Bell
215. Non-Euclidean Geometry. (3) I. Mr. Daus
- *216. Differential Geometry. (3) II. Mr. James
- 221A-221B. Higher Algebra. (3-3) Yr. Mr. Sherwood
 Prerequisite: course 111A.
- *222. Theory of Groups. (3) II. _____
 Prerequisite: course 111A.
 Classical theorems of general group theory; permutation groups; group representation; basic facts on Topological and Lie groups.
- 224A-224B. Functions of a Complex Variable. (3-3) Yr. Mr. Beckenbach
 Prerequisite: course 122A-122B.

* Not to be given, 1946-1947.

- *225A-225B. Theory of Elasticity. (3-3) Yr.** Mr. Sokolnikoff
Prerequisite: the consent of the instructor.
The theory of mechanics of deformable media, analysis of stress, analysis of strain, stress-strain relations, extension, torsion and flexure, theory of plates and shells, variational methods of solution of problems of elasticity.
- 226A-226B. Topology. (3-3) Yr.** Mr. Puckett
Course 226A deals with the theory of point sets, including topological, Hausdorff, and perfectly separable metric spaces; continuous functions and homeomorphisms.
Course 226B deals with continua, locally connected spaces, cyclic element theory, transformations, and dimension theory.
- *227. Theory of Summability. (3) I.** Mr. James
A study of convergent, nonconvergent, and asymptotic series, with applications to infinite integrals and Fourier series.
- 242A-242B. Functions of a Real Variable. (3-3) Yr. Beginning second semester.** Mr. Green
Prerequisite: course 122A-122B.
The real number system, point set theory, Lebesgue measure and Lebesgue integral. Iterated integration, absolute continuity, and fundamental theorem of the calculus.
- *245. Integral Equations. (3) II.** Mr. Taylor
- 246. Partial Differential Equations of Mathematical Physics. (3) II.**
Prerequisite: course 224A or 242A. Mr. Taylor
Boundary value problems, Laplace's differential operator, the heat equation, potential of electrostatic and magnetostatic fields.
- 247A-247B. Tensor Analysis. (3-3) Yr.** Mr. Sokolnikoff
Prerequisite: course 122A-122B or the consent of the instructor.
The algebra and calculus of tensors and their application to various branches of applied mathematics, including the theory of relativity.
- 248. Normed Linear Spaces. (3) I.** Mr. Taylor
Prerequisite: course 242A.
Abstract Banach spaces, vector spaces, and spaces of functions.
- 260. Seminars in Mathematics. (3) I, II.** The Staff
Topics in analysis, geometry, algebra, and statistics, and in their applications, by means of lectures and informal conferences with members of the staff.
- 290. Research in Mathematics. (1 to 6) I, II.** The Staff

PROFESSIONAL COURSE IN METHOD

- 370. The Teaching of Mathematics. (3) II.** Mr. Valentine
Prerequisite: course 4A.
A critical inquiry into present-day tendencies in the teaching of mathematics.

* Not to be given, 1946-1947.

STATISTICS**LOWER DIVISION COURSES**

- 1. Elementary Statistics. (2) I.** Mr. Hoel
Emphasis is placed on the understanding of statistical methods. Topics covered are frequency distributions, measures of central tendency, measures of variation, moments, theoretical frequency distributions, sampling, standard errors, linear regression, and linear correlation.
- *3. Industrial Statistics. (2) II.** Mr. Hoel
Prerequisite: course 1 or the equivalent.

UPPER DIVISION COURSES

- 131A-131B. Statistics. (3-3) Yr.** Mr. Hoel

GRADUATE COURSE

- 231. Mathematical Statistics. (3) II.** Mr. Hoel
Prerequisite: Statistics 131A-131B.
The mathematical theory of general distribution functions, sampling methods, sampling from a normal population, normal regression, analysis of variance.

MECHANIC ARTS

For courses in mechanic arts, see under Department of Engineering.

* Not to be given, 1946-1947.

METEOROLOGY

*JAKOB BJERKNES, Ph.D., Professor of Meteorology (Chairman of the Department).

JÜRGEN HOLMBOE, M.Sc., Professor of Meteorology (Acting Chairman of the Department).

MORRIS NEIBURGER, Ph.D., Assistant Professor of Meteorology.

J. Y. GILBERT, B.A., Instructor in Meteorology.

YALE MINTZ, M.A., Lecturer in Meteorology.

JOSEPH KAPLAN, Ph.D., Professor of Physics.

HARALD U. SVEDRUP, Ph.D., Professor of Oceanography, Scripps Institution of Oceanography.

Letters and Science List.—All undergraduate courses in this department are included in the Letters and Science List of Courses. For regulations governing this list, see page 65.

Preparation for the Major.—Physics 2A–2B, or 1A, 1B, 1C, 1D; Mathematics C, D or 1, 3A, 3B, 4A, or their equivalents. A reading knowledge of French or German is recommended. Meteorology 3 is prerequisite to upper division work in meteorology, but may be taken in the first semester of the third year.

The Major.—Meteorology 100A–100B, 107, 110, 115, 120. The remaining upper division courses may be chosen from other courses in meteorology, physics, or mathematics.

Laboratory Fees.—Courses 110, 210B, \$35; 115, 210A, \$50.

LOWER DIVISION COURSE

3. Descriptive Meteorology. (3) I, II.

Mr. Mintz

Prerequisite: Physics 2A or 1B.

Elementary survey of the causes and regional distribution of weather and climate.

UPPER DIVISION COURSES

100A. Synoptic Meteorology. (3) I.

Mr. Neiburger

Prerequisite: course 3.

Three dimensional structure of atmosphere; world-wide survey of weather; fundamentals of weather map analysis and weather forecasting.

100B. Synoptic Meteorology. (3) II.

Mr. Neiburger

Prerequisite: course 100A.

Forecasting special weather phenomena, including condensation forms, thunderstorms, icing, ceiling and visibility; application of theory of pressure variations to weather forecasting.

102. Physics of the Higher Atmosphere. (3) I.

Mr. Kaplan

Prerequisite: course 104, or Physics 113, or consent of instructor.

Constitution of the atmosphere at various levels; the ozone layer; the ionosphere; cosmic rays; optical phenomena.

* Absent on leave, 1946–1947.

- *103. Oceanography. (3) I.** _____
 Prerequisite: courses 107, 120.
 Principles and methods of physical oceanography. Energy exchange between ocean and atmosphere. Distribution of temperature. Current systems. Wind waves and swell.
- *104. Meteorological Physics. (2) II.** _____
 Prerequisite: Physics 2A-2B, or 1A, 1B, 1C, 1D.
 Theory of radiation with emphasis on its meteorological applications. Atmospheric electricity. Theory of visibility.
- 107. Meteorological Thermodynamics. (3) I.** _____
 Prerequisite: Physics 2A-2B or 1A, 1B, 1C, 1D; Mathematics 4A.
 Thermal properties of dry air, water vapor and moist air. Atmospheric hydrostatics. Evaluation of aerological soundings.
- 108A. Physical Climatology. (2) I.** Mr. Mintz
 Prerequisite: course 3.
- 108B. Regional Climatology. (2) II.** Mr. Mintz
 Prerequisite: course 3 or 108A.
- 110. Meteorological Laboratory. (3) I.** Mr. Neiburger
 Prerequisite or concurrent: course 100A. Fee, \$35.
 Weather codes and weather map plotting. Exercises in analysis of the surface weather map; introduction to weather forecasting.
- 111. Meteorological Instruments and Observations. (3) I, II.** Mr. Gilbert
 Prerequisite or concurrent: course 3.
 Lectures, laboratory exercises and field observation in the measurement of meteorological elements.
- 115. Meteorological Laboratory. (5) II.** The Staff
 Prerequisite: course 110; prerequisite or concurrent, course 100B. Fee, \$50.
 Practice in weather map analysis and forecasting; use of upper air data.
- 120. Dynamic Meteorology. (3) II.** _____
 Prerequisite: course 107.
 Equations of atmospheric motion. Gradient wind. Thermal wind. Fronts. Frictional effects. Stability of hydrostatic equilibrium.
- 121. Dynamic Meteorology. (3) I.** Mr. Holmboe
 Prerequisite: course 120.
 Theory of pressure changes. Circulation and vorticity. Theory of atmospheric waves.
- 199A-199B. Special Problems in Meteorology. (1-3; 1-3) Yr.**
 Mr. Holmboe, Mr. Kaplan

GRADUATE COURSES

Prerequisite to all graduate courses: courses 100AB, 107, 110, 115, 120.

- 201A-201B. Advanced Synoptic Meteorology. (2-2) Yr.** Mr. Neiburger
- *203. Advanced Oceanography. (2)** Mr. Sverdrup
 Prerequisite: course 103.

* Not to be given, 1946-1947.

210A-210B. Meteorological Laboratory. (5-4) Yr. Fees: 210A, \$50; 210B, \$35.	The Staff
217. Meteorological Hydrodynamics. (3) II.	Mr. Holmboe
220. Advanced Dynamic Meteorology. (3) I.	Mr. Holmboe
260. Seminar in Meteorology. (2) I, II.	Mr. Holmboe in charge
290A-290B. Research in Meteorology. (1-6; 1-6) Yr.	Mr. Holmboe

MILITARY SCIENCE AND TACTICS

JOHN L. MCKEE, Colonel, U. S. Army, Professor of Military Science and Tactics (Chairman of the Department).

TRACY L. ENGLISH, Major, U.S. Army, Assistant Professor of Military Science and Tactics.

ALLEN T. SMITH, Major, U.S. Army, Assistant Professor of Military Science and Tactics.

RICHARD L. FRARY, First Lieutenant, U. S. Army, Instructor in Military Science and Tactics.

Letters and Science List.—All undergraduate courses in this department are included in the Letters and Science List of Courses. For regulations governing this list, see page 65. The courses in Military Science and Tactics are those prescribed by the War Department for units of the senior division of the Reserve Officers' Training Corps. The United States furnishes arms, equipment, uniforms, and textbooks for the use of regularly enrolled students in this department. An amount necessary to replace articles not returned by the students will be collected by the Cashier.

ELEMENTARY COURSE

The purpose of this course is to qualify the student as a leader whether in peace or in war, to help prepare him to discharge his duties as a citizen and to awaken in him an appreciation of the obligations of citizenship.

The elementary course is prescribed for all first-year and second-year undergraduate male students who are citizens of the United States, able-bodied, between the ages of fourteen and twenty-four years at the time of admission to the University. A first-year or second-year student claiming exemption because of noncitizenship, physical disability, age, or service in the armed forces of the United States, will present a petition on the prescribed form for such exemption. Pending action on his petition the student will enroll in and enter the course prescribed for his year. The Professor of Military Science and Tactics may at his discretion allow up to one year of credit in the elementary course for prior service in the armed forces.

A student who has received training in a junior division R.O.T.C. unit, equivalent training at a government recognized military school, or senior division R.O.T.C. training at another University, may be granted advanced elementary course standing by the Professor of Military Science and Tactics, based on the previous R.O.T.C. training completed. Satisfactory completion of the junior R.O.T.C. program will entitle the student to credit for the first year of senior R.O.T.C. It is essential that each entering student, with previous R.O.T.C. training as indicated above, and who desires to receive advanced R.O.T.C. credit, should, prior to his enrollment, secure from the high school, or other institution concerned, a transcript of his previous R.O.T.C. training. This transcript should be presented by the student for proper evaluation at the time he enrolls in Military Science and Tactics.

3A-3B. Basic Military Training, Branch Immaterial. (2-2) Yr.

One hour of field instruction and two hours of theoretical instruction each week.

Instruction and training in the basic theoretical and practical subjects necessary to enable the student to operate as a soldier in the field.

4A-4B. Basic Military Training, Branch Immaterial. (2-2) Yr.

One hour of field instruction and two hours of theoretical instruction each week.

Instruction to the student to continue and preserve the training given in 3A-3B, and to instill a theoretical and practical knowledge of military tactics as applied to the individual and small groups.

ADVANCED COURSE

The purpose of this course is to produce college-trained junior Reserve Officers to meet the needs of the Army during the postwar period, and to preserve and expand the Reserve Officers' Training Corps organization in anticipation of postwar Reserve Officer requirements.

The advanced course is offered for regularly enrolled students who are graduates of the elementary course, physically fit, and not less than nineteen nor more than twenty-two years of age at the time of admission to the Advanced Course, except that veterans of World War II enrolling prior to January 1, 1950, shall not have passed their twenty-seventh birthday. In addition, advanced-course students must have at least two academic years to graduate or like period to complete all academic work for advanced degree, and must have a minimum Army General Classification Test Score of 110. Advanced-course students receive from the government commutation of subsistence equivalent to the value of the Army ration (about \$20.00 per month), in addition to uniforms, arms, equipment, and textbooks.

Advanced-course students are required to attend a course of summer camp training for six weeks during the summer vacation period normally following the student's completion of the first year of the advanced course. The United States furnishes uniforms, equipment, transportation, and subsistence and pays the student while at camp the rate of pay of an Army private (now \$50 per month). Students who attend camp receive one-half unit of credit for each week of the duration of the camp.

Formally enrolled members of the advanced course are exempt from registration, induction, training, and service under the Selective Training and Service Act of 1940, as amended.

103A-103B. Advanced Military Training, Infantry or Coast Artillery. (4-4) Yr.

Instruction to the student to continue and preserve the training given in the elementary course and/or service in the armed forces; instruction in leadership and the duties of company grade officers of Infantry or Coast Artillery, as elected by the student.

104A-104B. Advanced Military Training, Infantry or Coast Artillery. (4-4) Yr.

Continuation of the instruction given in 103A-103B with a view to qualifying the student for a commission in the Officers' Reserve Corps, United States Army, in Infantry or Coast Artillery Corps.

Legislation now pending would provide that students in the elementary course will be paid a monetary allowance at a daily rate equivalent to the value of the commuted ration (now 66 cents per day) and that students of the advanced course be paid an allowance at the rate of the commuted ration plus an allowance for quarters and uniforms at the rate of \$1.25 per day. Also subject to approved legislation, the summer camp will be increased from six to eight weeks in duration and the rate of pay at the summer camp will be increased to pay of the sixth enlisted grade (private first class).

MUSIC

GEORGE STEWART MCMANUS, Mus.Doc., Professor of Music.

ARNOLD SCHOENBERG, Professor of Music, Emeritus

_____, Professor of Music.

LEROY W. ALLEN, M.A., Associate Professor of Music.

LAURENCE A. PETRAN, Mus.M., Ph.D., F.A.G.O., Associate Professor of Music and University Organist (Chairman of the Department).

JOHN VINCENT, Ph.D., Associate Professor of Music.

FRANCES WRIGHT, Associate Professor of Music, Emeritus.

RAYMOND MOREMEN, M.S.M., Assistant Professor of Music.

ROBERT U. NELSON, Ph.D., Assistant Professor of Music.

WALTER H. RUBSAMEN, Ph.D., Assistant Professor of Music.

_____, Instructor in Music.

HELEN CHUTE DILL, M.A., Supervisor of Training, Music.

LAVERNA L. LOSSING, M.A., Supervisor of Training, Music.

The student may select a major in music in either the College of Letters and Science or in the College of Applied Arts; these majors lead to the degree of Bachelor of Arts in both instances. For information regarding teaching credentials consult the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION, LOS ANGELES.

College of Letters and Science

Letters and Science List.—All undergraduate courses except 7A-7B, 26A-26B, 27A-27B, 46A-46B-46C-46D, 108A-108B, and 115A-115B, are included in the Letters and Science List of Courses. For regulations governing this list, see page 65.

Preparation for the Major.—Courses 1A-1B, 2A-2B, 14A-14B, 35A-35B, and some ability in piano playing. Recommended: a reading knowledge of French, German, Italian, or Spanish, and Physics 2A-2B or 10A-10B.

The Major.—Twenty-four units of upper division courses, including (a) course 104A-104B; (b) 6 units chosen from courses 111A-111B, 124, 125, 126, 127, 128, 129, 130, 131, 134, 136, 138, 142, 151, 199; and (c) 14 units chosen from courses 105A-105B, 106A-106B, 109A, 109B, 114A-114B, 122A-122B, 199, sec. 1, and courses under (b) not duplicated. By arrangement with the department, 4 units chosen from courses 110A-110B, 116A-116B, 117A-117B, and 118 may be substituted for 4 units under (c).

College of Applied Arts

Two curricula are available:

A. For the bachelor's degree alone.

Preparation for the Major.—Courses 1A-1B, 2A-2B, 14A-14B, 35A-35B, and some ability in piano playing. Recommended: a reading knowledge of French, German, Italian, or Spanish, and Physics 2A-2B or 10A-10B.

The Major.—Thirty-six units of upper division courses, including (a) course 104A-104B; (b) 6 units chosen from courses 111A-111B, 124, 125, 126, 127,

128, 129, 130, 131, 134, 136, 138, 142, 151, 199, sec. 2; and (c) 26 units chosen from upper division courses in music, with the exception of courses 108A-108B and 115A-115B. Six to 8 units of upper division courses in related fields will be accepted upon departmental approval.

B. For the bachelor's degree leading to the special secondary teaching credential. This curriculum meets the departmental requirements for admission to the graduate courses leading to the general secondary credential.

Preparation for the Major.—Courses 1A-1B, 2A-2B, 7A-7B, 14A-14B, 35A-35B and some ability in piano playing. Recommended: a reading knowledge of French, German, Italian, or Spanish, and Physics 2A-2B or 10A-10B.

The Major.—Courses 104A-104B, 105A, 108A-108B, 109A-109B, 114A, 115A-115B; 6 units chosen from courses 111A-111B, 124, 125, 126, 127, 128, 129, 130, 131, 134, 136, 138, 142, 151, 199, sec. 2; together with 10 additional units in upper division courses in music. Six to 8 units in related fields will be accepted upon departmental approval.

The Minor in Music.—Twenty units of coördinated courses, 6 of which must be in the upper division.

An acceptable minor with emphasis upon administration and direction of bands and orchestras consists of courses 1A-1B, 35A-35B, together with not more than 2 other lower division units chosen from courses 26A-26B, 27A-27B, and 46A-B-C-D. The upper division courses consist of 109A-109B and 114A-114B.

Graduate Division

A. *Requirements for the General Secondary Credential.*—Consult the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION, LOS ANGELES.

B. *Requirements for Admission to Graduate Courses.*—

1. *As a candidate for the general secondary credential:* Ordinarily the undergraduate major in music, or its equivalent, including courses 104A-104B, 105A, 108A-108B, 109A-109B, 114A, 115A-115B, and 6 upper division units chosen from courses 111A-111B, 124, 125, 126, 127, 128, 129, 130, 131, 134, 136, 138, 142, 199, sec. 2. It is recommended that course 370B be taken in the senior year, as it is prerequisite to Education G377.

2. *As a candidate for the Master's degree:* Ordinarily the undergraduate major of 24 upper division units of music, with the exception of courses 108A-108B and 115A-115B.

C. *Requirements for the Master's degree.*—For the general requirements, see page 111. The Department of Music favors the Thesis Plan.

LOWER DIVISION COURSES

The piano requirement for music majors, *prerequisite to junior standing*, is the ability to play such music as the accompaniments in the Teacher's Manuals of the Music Hour Series and the Progressive Series, four-part hymns and folk songs, and contrapuntal compositions equivalent to the Two-Part Inventions of Bach or the First Lessons in Bach, edited by Walter Carroll. In special cases this requirement may be reduced for students with corresponding proficiency on other approved instruments.

1A-1B. Solfège. (3-3) Yr. Beginning either semester.

The Staff

Elementary theory, dictation, and music reading. Basic course for the major in music.

- 2A-2B. History and Appreciation of Music.** (2-2) Yr. Mr. McManus
The consideration of music from formal, aesthetic, and historical stand-
points.
- 7A-7B. Elementary Voice.** (2-2) Yr. Mr. Moremen
Restricted to music majors working toward the special secondary and
the general secondary teaching credentials.
- 9A-B-C-D. Glee Club.** (1 unit each semester.) Mr. Moremen
- 10A-B-C-D. University Symphony Orchestra.** (2 units each semester.)
Prerequisite: the consent of the instructor. Mr. Vincent
The study and performance of standard symphonic literature.
- 11A-B-C-D. Cappella Choir.** (2 units each semester.) Mr. Moremen
Prerequisite: the consent of the instructor.
The study and performance of standard choral works.
- 14A-14B. Counterpoint.** (2-2) Yr. Mr. Nelson
Prerequisite: course 35A-35B, or the consent of the instructor.
- 35A-35B. Harmony.** (3-3) Yr. Mr. Nelson, Mr. Petran
Prerequisite: course 1A-1B or its equivalent; may be taken concurrently
with 1A-1B with the consent of the instructor.
- 37A-37B. Piano, Intermediate.** (2-2) Yr. _____
- 46A-B-C-D. University Band.** (1 unit each semester.) Mr. Allen
Prerequisite: the consent of the instructor.

UPPER DIVISION COURSES

- 104A-104B. Form and Analysis.** (2-2) Yr. Mr. Nelson
Prerequisite: course 35A-35B.
Analysis of homophonic and contrapuntal music.
- 105A-105B. Composition.** (2-2) Yr. Mr. Nelson, _____
Prerequisite: courses 14A-14B, 35A-35B, 104A-104B, and the consent
of the instructor; 104A-104B may be taken concurrently.
Vocal and instrumental compositions in the smaller forms.
- *106A-106B. Structural Functions of Harmony.** (2-2) Yr. _____
Prerequisite: courses 35A-35B, 104A-104B (may be taken concurrently).
The application of harmonic progressions to form and composition.
- 108A-108B. Advanced Voice.** (2-2) Yr. Mr. Moremen
Prerequisite: course 7A-7B. Restricted to music majors working toward
the special secondary and the general secondary credentials.
- 109A. Conducting.** (2) II. Mr. Moremen
Prerequisite: courses 1A-1B, 35A-35B.
The theory and practice of conducting choral organizations.
- 109B. Conducting.** (2) I. Mr. Allen
Prerequisite: courses 1A-1B, 35A-35B.
The theory and practice of conducting instrumental organizations.

* Not to be given, 1946-1947.

- *110A-110B. Chamber Music Ensemble. (2-2) Yr. Mr. McManus
Prerequisite: the consent of the instructor.
The study and interpretation of chamber music literature.
- 111A-111B. History of Music in Western Civilization. (3-3) Yr. Mr. Rubsamen
Prerequisite: courses 2A-2B, 35A-35B, or their equivalent.
The stylistic development of music with a background of its relationship to other arts and to culture in general.
- 114A-114B. Instrumentation. (2) Yr. Mr. Allen
Prerequisite: course 35A-35B.
The theory and practice of writing for instrumental ensembles. The study of orchestral scores and an introduction to symphonic orchestration.
- 115A-115B. Instrumental Technique and Repertoire. (2-2) Yr. Mr. Allen
Prerequisite: course 35A-35B. Restricted to music majors working toward the special secondary and the general secondary credentials.
A theoretical and practical study of the instruments of the orchestra and band, including the principles of arranging music for representative combinations. Appropriate literature for instrumental ensembles.
- 116A-*116B. Piano, Advanced. (2-2) Yr. Mr. McManus
Prerequisite: the consent of the instructor.
- 117A-117B. Madrigal Choir. (2-2) Yr. Mr. Moremen
Prerequisite: the consent of the instructor.
The study and performance of significant music of the madrigal school.
- *118. Studies in the Art of Accompanying. (1-2) I. Mr. McManus
Prerequisite: consent of the instructor. Pianists enroll for two units; other instrumentalists and singers desiring work in repertoire and interpretation may enroll for one unit.
- 122A-122B. Advanced Counterpoint. (2-2) Yr. _____
Prerequisite: course 14A-14B, and the consent of the instructor.
Invertible counterpoint, choral prelude and fugue.
124. Bach. (2) II. Mr. McManus
Prerequisite: courses 2A-2B, 35A-35B.
125. Beethoven. (2) II. Mr. McManus
Prerequisite: courses 2A-2B, 35A-35B.
- *126. History of the Sonata. (2) I. Mr. Nelson
Prerequisite: courses 2A-2B, 35A-35B.
The development of the sonata from its beginnings to the close of the romantic period.
- *127. History of the Opera. (2) I. Mr. Rubsamen
Prerequisite: the consent of the instructor.
A survey of operatic music from its inception to the present day.

* 110B to be given, fall semester; 110A not to be given, 1946-1947.

* Not to be given, 1946-1947.

128. **Modern Tendencies in Music.** (2) II. Mr. Nelson
 Prerequisite: courses 14A-14B, 35A-35B.
 A study of form, style, and idiom in contemporary music.
- *129. **The Romantic Symphony.** (2) I. Mr. Rubsamen
 Prerequisite: courses 2A-2B, 35A-35B.
 A study of symphonic works of the romantic period.
- *130. **History and Literature of Church Music.** (2) I. Mr. Moremen
 Prerequisite: courses 2A-2B.
 A study of the history and development of church music, including worship forms and liturgies.
- *131. **Oratorio Literature.** (2) I. Mr. Petran
 Prerequisite: courses 2A-2B, 35A-35B.
 A survey of oratorio music from its inception until the present day.
- *134. **Brahms.** (2) I. Mr. McManus
 Prerequisite: course 2A-2B or its equivalent.
136. **Folk Music.** (2) II. Mr. Petran
 Prerequisite: the consent of the instructor.
 Origins, types, and illustrations of the folk music of various countries.
138. **Music and Political Ideology.** (2) I. Mr. Rubsamen
 Prerequisite: the consent of the instructor.
 The interrelationship between political ideologies and the arts, particularly music, in Soviet Russia, Nazi Germany, and Fascist Italy; the cultural policies of totalitarianism; the state as a patron of music.
- *142. **History of Music in America.** (2) I. Mr. McManus
 Prerequisite: course 2A-2B or the consent of the instructor.
 A survey of music in the United States from the colonial period to the present day.
151. **Music for the Theater, Cinema and Radio Drama.** (2) I.
 Prerequisite: the consent of the instructor. Mr. Rubsamen
 Music as a factor of design in the legitimate drama, the cinema, and the radio theater. The history of incidental music to theatrical performances, including a study of musical styles in relation to the periods of dramatic presentation.
- *168. **Aesthetics for Musicians.** (2) II. _____
199. **Special Studies in Music.** (2) I, II. The Staff
 Prerequisite: the consent of the instructor.

GRADUATE COURSES

- 201A-201B. **Advanced Composition.** (3-3) Yr. _____
205. **History of Pianoforte Style.** (2) I. Mr. McManus
207. **The Variation Forms.** (2) I. Mr. Nelson
 Prerequisite: courses 105A-105B and 111A-111B or their equivalents.
208. **Music Criticism.** (2) I. Mr. McManus
 A survey of factors involved in critical evaluation.

* Not to be given, 1946-1947.

- *230. **Pianoforte Sonatas of Beethoven. (2) I.** Mr. McManus
Detailed chronological study of the development of Beethoven's sonata style.
- *231. **Wagner's Operas. (2) II.** Mr. McManus
A study of the operatic works with the exception of "The Ring."
- 253A-253B. **Seminar in Historical Musicology. (3-3) Yr.** Mr. Rubsamen
Prerequisite: course 111A-111B or the equivalent.
- *261. **Special Studies for Composers. Seminar. (2) I.** _____
- 270A-270B. **Seminar in Music Education. (2-2) Yr.** Mr. Vincent
299. **Special Problems in Music. (1-4) I, II.** The Staff

PROFESSIONAL COURSES IN METHOD

330. **Elementary Music Education. (3) I, II.** Mrs. Dill, Miss Lossing
Prerequisite: sophomore standing and course 1A or its equivalent. Required of candidates for the general elementary credential.
A course in music education for the general elementary teacher. A professionalized subject-matter course to equip the student to teach in the modern school.
- 370A-370B. **Music Education. (3-3) Yr.** Mr. Vincent
Prerequisite: junior standing.
Organization and administration of music in elementary and secondary schools.
Course 370B is required of candidates for the general secondary credential with music as a major.

RELATED COURSE IN ANOTHER DEPARTMENT

- Psychology 172A-172B. Psychology of Music. (3-3) Yr. Mr. Petran

* Not to be given, 1946-1947.

NAVAL SCIENCE AND TACTICS

GEORGE G. CRISSMAN, Captain, U. S. Navy; Graduate, U. S. Naval Academy; Professor of Naval Science and Tactics (Chairman of the Department).

THOMAS BORGHETTI, Chief Fire Controlman, U. S. Navy; Assistant in Naval Science and Tactics.

EDMOND T. PRITCHETT, Gunner's Mate first class, U. S. Navy; Assistant in Naval Science and Tactics.

Letters and Science List.—All undergraduate courses in this department are included in the Letters and Science List of Courses. For regulations governing this list, see page 65.

Naval Reserve Officers' Training Corps

By action of the Secretary of the Navy and of the Regents of the University of California in June, 1938, provision was made for the establishment of a unit of the Naval Reserve Officers' Training Corps on the Los Angeles campus of the University of California.

The primary object of the Naval Reserve Officers' Training Corps is to provide at civil institutions systematic instruction and training which will qualify selected students of such institutions for appointment as officers in the Regular Navy, Naval Reserve, Marine Corps, and Marine Corps Reserve. The Naval Reserve Officers' Training Corps is expected to train junior officers for the Regular Navy and Naval Reserve and thus assist in meeting a demand for increased commissioned personnel in time of war or national emergency.

Courses in naval science are given for those who intend to complete the four years of training for a commission in the Regular Navy, Naval Reserve, Marine Corps, and Marine Corps Reserve. While only students signifying such a purpose will be admitted, students who for sufficient reasons are forced to discontinue their training before their commission is granted, will be permitted, at the end of two years, to count such training in lieu of the military training prescribed by the University. All courses in naval science described hereinafter include infantry drill or other practical drill for two hours weekly for all Naval R.O.T.C. students.

Enrollment is restricted to able-bodied male students who are citizens of the United States and are between the ages of fourteen and twenty-four years. Students must pass the same physical examination as is required of all candidates for admission to the Naval Academy.

All courses listed are those prescribed by the Navy Department for the Naval Reserve Officers' Training Corps. The United States furnishes on loan to the individual arms, equipment, uniforms, and Naval Science textbooks for the use of these students. The names of students who fail to return equipment issued to them will be reported to the Business Manager in order that appropriate action may be taken by the University authorities. Upon satisfactory completion of the course, a uniform becomes the property of the student.

Types of NROTC Students.—Officer candidates in the NROTC will be of three types:

(a) *Regular NROTC Students* are appointed Midshipmen, USNR, and receive retainer pay at a rate of \$600 per year for a maximum period of four years while under instruction at the NROTC institution or during summer training periods. Their tuition, fees, books, and laboratory expenses are paid

by the U. S. Government during the above period. These students assume an obligation to make all required summer practice cruises (three) and to serve at least fifteen months on active duty after commissioning as Ensigns, U. S. Navy, or Second Lieutenants, U. S. Marine Corps. (Enrollment of this type of student is dependent upon enactment of suitable legislation.)

(b) *Contract NROTC Students* have the status of civilians who have entered into a mutual contract with the Navy. For administrative purposes, they are styled Midshipmen. During their junior and senior years they are entitled to commutation of subsistence from the first day during an academic term until they complete the course at the institution or their connection with the Naval Reserve Officers' Training Corps is severed in accordance with the regulations prescribed, except that subsistence in kind will be furnished in lieu of commutation of subsistence for any periods devoted to cruises. The amount allowed for subsistence, which will be fixed from time to time by the Secretary of the Navy, will not exceed the value prescribed by law for a commuted ration in the Navy. Contract NROTC Students agree to accept a commission in the Naval Reserve or in the Marine Corps Reserve but may, if they so desire and if their services are required, be commissioned as Ensigns, USN, or Second Lieutenants, USMS, and serve for not less than fifteen months on active duty. Contract NROTC Students are required to make one summer practice cruise.

(c) *Naval Science Students*

(1) With the approval of the academic authorities, students who are ineligible for enrollment in the NROTC solely because they are in excess of the allowed quota of the unit, may be permitted to pursue Naval Science courses for college credits. They are not eligible to make NROTC practice cruises nor to be paid any compensation or benefits.

(2) Naval Science Students may become eligible for enrollment in NROTC as candidates for commissions provided they comply in every respect with the requirements for original enrollment, when vacancies occur in the unit quota.

(3) Naval Science Students may participate in local drills.

Freshman Year

- | | |
|---|-----------|
| 11. Introduction to Naval Science. (3) I.
Orientation, naval administration, and basic seamanship.
(BuPers Curriculum NS101). | The Staff |
| 12. Communications and Tactics. (3) II.
Naval communication, system and basic tactics.
(BuPers Curriculum NS102). | The Staff |

Sophomore Year

- | | |
|---|-----------|
| 21. Ordnance and Fire-Control. (3) I.
Naval ordnance and gunnery, elementary fire-control.
(BuPers Curriculum NS201). | The Staff |
| 22. Fire-Control. (3) I, II.
Advanced fire-control, sound and electronic devices.
(BuPers Curriculum NS202). | The Staff |

Junior Year

- | | |
|---|-----------|
| 131. Navigation. (8) I.
Piloting, celestial and aerial navigation.
Prerequisite: Mathematics C.
(BuPers Curriculum NS301). | The Staff |
|---|-----------|

132. **Advanced Seamanship.** (3) I, II. The Staff
 Ship handling, maneuvering board, escort trainer, attack teacher.
 (BuPers Curriculum NS302).
- *133. **Military Principles and the History of War.** (3) II. The Staff
 (BuPers Curriculum NS312).
- Senior Year*
141. **Naval Engineering.** (3) I. The Staff
 Naval machinery, steam, electrical and diesel, including auxiliary equip-
 ment.
 (BuPers Curriculum NS401).
142. **Naval Engineering and Damage Control.** (3) II. The Staff
 A continuation of course 141 followed by principles or damage control.
 (BuPers Curriculum NS402).
- *143. **Tactics and Technique.** (3) I. The Staff
 (BuPers Curriculum NS411).
- *144. **Amphibious Operations.** (3) II. The Staff
 The landing team and smaller units.
 (BuPers Curriculum NS412).

* These courses to be pursued by candidates for commissions in the Marine Corps or Marine Corps Reserve in place of 132, 141, and 142.

NURSING EDUCATION

_____, Associate Professor of Nursing Education.

*ELINOR LEE BEEBE, R.N., Ph.D., Associate Professor of Public Health Nursing.

MARGARET M. ROBERTSON, R.N., M.A., Assistant Professor of Public Health Nursing and Field Supervisor.

JANET NOLAN, M.S.S., Lecturer in Family Case Work.

COLLEGE OF APPLIED ARTS

The Department of Nursing is being organized to include curricula in areas such as teaching in schools of nursing, public health nursing, school nursing, industrial nursing, and psychiatric nursing. For the fall semester of 1946, however, the offerings will be limited largely to courses in public health nursing.

Professional requirements for admission to the curricula in Public Health Nursing are: graduation from an approved school of nursing, fulfillment of the legal requirements for the practice of nursing, and at least one year of graduate nurse experience. Evidence of nurse registration should be sent to the Office of Admissions with the application for admission to the University.

A. The Degree Program in Public Health Nursing. The degree of Bachelor of Science and the Certificate in Public Health Nursing will be awarded to students meeting requirements for graduation in the College of Applied Arts as listed on page 102, including the following courses:

Preparation for the Major.—English 1A-1B or English 1A and Public Speaking 1A or 2A, Home Economics 32, Psychology 21-22, Sociology 1A-1B.

The Major.—Thirty-six units of upper division courses in Public Health Nursing and related fields, including Public Health Nursing 351, 402, 418, 419, 420, Public Health 101A-101B, Education 111, 151, Psychology 110, Sociology 120, 181.

For complete plan and additional requirements of the College of Applied Arts, see page 103 in this catalogue, and the ANNOUNCEMENT OF THE COLLEGE OF APPLIED ARTS, LOS ANGELES. Recommended electives: English, 6 units; Public Speaking 122, Education 106, 112, 123, 160, 180, Home Economics 143, 168, Psychology 112, Public Health 121, Spanish.

Degree students should plan with their advisers before the beginning of the sophomore year, study programs for each semester to include correlated courses to meet their individual needs and interests. These programs are tentative and subject to revision, as the student's best interest or availability of courses may determine.

B. The Certificate Program in Public Health Nursing. The Certificate in Public Health Nursing will be awarded upon the completion, with at least a "C" average, of the following courses:

Prerequisites: English 1A-1B or English 1A and Public Speaking 1A or 2A, Psychology 21-22, Sociology 1A-1B and the University requirements in American History and Institutions. These courses are prerequisite to enrollment in all upper division Public Health Nursing courses and to admission to the cur-

* Absent on leave, 1946-1947.

ricula in Public Health Nursing. Employed or scholarship nurses obligated to complete certificate requirements in the shortest possible time should complete all prerequisites before registering on campus.

The Curriculum.—Thirty-six units, including Public Health Nursing 402, 418, 419, 420; Public Health 101A–101B; Sociology 120, 181; Education 111, Psychology 110, Home Economics 32. This is a three-semester program consisting of two semesters of class work and one semester of field experience. Candidates are required to be enrolled in the College of Applied Arts for at least one semester (12 units) exclusive of the field experience.

California State Certificate in Public Health Nursing.—Upon completion of the certificate program, students will make individual application to the State Department of Public Health for the state certificate. Application forms may be obtained from the State Office Building.

California State Health and Development Credential.—Students are advised to include in the certificate program †Education 151, which is required for this credential but not for the certificate in Public Health Nursing. Students make application for this credential directly to the State Department of Education, Sacramento, which also answers questions on these state regulations and their interpretation as to individual qualifications.

Red Cross Certification in Home Nursing and Nurse's Aide Training.—Public Health Nursing 11 is planned to meet Red Cross requirements, and is available to students not majoring in Public Health Nursing.

Field Fee.—Public Health Nursing 420, \$20.

LOWER DIVISION COURSES

- *11. Home Nursing. (1) I, II. Miss Beebe in charge
Class discussion and laboratory. Students completing the course satisfactorily receive the American Red Cross Certificate.
Procedures of home nursing.

PROFESSIONAL COURSES

- *351. Principles of Teaching in Public Health Nursing. (2) II. Miss Beebe
Development of fundamental principles of the teaching process. Organization, planning, and application in practical problems of public health nursing. Open to experienced students with instructor's permission.

- *370. Supervised Teaching: Home Nursing. (1–4).
Prerequisites: Senior standing, Public Health Nursing 401. Enrollment by permission of instructor.

- *401. Methods of Teaching Home Nursing. (3) II. Miss Beebe
Discussion, demonstration; student planning, presentation, and practice of methods of procedure of the Red Cross Home Nursing Course.

402. Family Case Work as Related to Public Health Nursing. (2) I.
Class work, field and observation study. Miss Nolan
This course is planned to familiarize the public health nurse with the processes of social case work as carried on by social agencies, the approach to problems of family and community relationship, and the application of social case work methods in the public health nursing field.

* Not to be given, 1946–1947.

† Students are urged to complete this course at the earliest possible time. It is offered ordinarily in the Summer Sessions and once yearly in University Extension.

418. Principles and Practice in Public Health Nursing. (3) I, II.

Mrs. Robertson

A general view of public health nursing as illustrated by its present scope and methods. A study of the objectives of public health nursing, applied to all phases of the services, including maternity, infancy, preschool, school, and industrial.

419. Administration and Organization of Public Health Nursing. (3) I, II.

Prerequisite: course 418.

_____, Mrs. Robertson

The history and development of public health nursing to meet individual, family, and community health needs. The policies and trends in the organization of national, state, local, municipal, and rural public health nursing services; application of these policies to official and nonofficial agencies.

420. Field Experience in Public Health Nursing. (6) I, II.

Mrs. Robertson, _____

Prerequisite: completion of the academic program for the Public Health Nursing Certificate. Sixteen weeks of continuous supervised field assignment with designated affiliating agencies of the Los Angeles vicinity. Students carry no outside work or other study during the field program. This period does not affect the residence requirement. Fee, \$20.

OCEANOGRAPHY

CARL L. HUBBS, Ph.D., Professor of Biology.

G. F. McEWEN, Ph.D., Professor and Curator of Physical Oceanography.

NORRIS W. RAKESTRAW, Ph.D., Professor of Oceanography.

HARALD U. SVERDRUP, Ph.D., Professor of Oceanography and Director of the Scripps Institution of Oceanography.

THOMAS WAYLAND VAUGHAN, Ph.D., LL.D., Professor of Oceanography and Director of the Scripps Institution of Oceanography, Emeritus.

DENIS L. FOX, Ph.D., Associate Professor of Marine Biochemistry.

MARTIN W. JOHNSON, Ph.D., Associate Professor of Marine Biology.

✓ ROGER R. REVELLE, Ph.D., Associate Professor of Oceanography.

CLAUDE E. ZOBELL, Ph.D., Associate Professor of Marine Microbiology.

WINFRED E. ALLEN, M.A., Assistant Professor of Biology, Emeritus.

MARSTON C. SARGENT, Ph.D., Assistant Professor of Oceanography.

PERCY S. BARNHART, M.S., Associate in Oceanography and Curator of the Biological Collection.

STANLEY W. CHAMBERS, Associate in Physical Oceanography.

The courses in oceanography are given at the Scripps Institution of Oceanography at La Jolla, California. For further information concerning the Institution write to the Director.

Letters and Science List.—All courses in oceanography are included in the Letters and Science List of Courses. For regulations governing this list, see page 65.

Advanced degrees.—Work leading to the master's or Ph.D. degree in oceanography and certain other marine sciences is offered to a limited number of qualified students subject to the rules and regulations of the University as set forth in the ANNOUNCEMENT OF THE GRADUATE DIVISION, SOUTHERN SECTION. The student must be well trained in the fundamentals before coming to La Jolla. Usually at least two terms of resident work at Los Angeles or Berkeley will be required of prospective candidates for the doctor's degree, and at least one semester for the master's degree.

Preliminary requirements for a degree in Oceanography. (a) completion of a baccalaureate major in one of the sciences upon which oceanography is based, viz.: chemistry, geology, mathematics, meteorology, physics or one of the biological sciences; (b) a reading knowledge of German and French; (c) Mathematics 3A-3B (6); (d) Chemistry 1A-1B (10); (e) Physics 2A-2B (8); (f) Oceanography 110, 111, 112, 113 (12); (g) basic courses in one or more of the biological sciences (8). Preparation in physical chemistry, organic chemistry, integral calculus, and geology is recommended.

Requirements for an advanced degree in other fields of study.—Through a cooperative arrangement with other departments of the University, a student may do his research work in certain fields of study closely related to oceanography; i.e., biochemistry, physicochemical biology, geological sciences, microbiology, comparative physiology, and zoölogy. The preliminary requirements are the same as those listed under the corresponding departments or fields of study in this catalogue and in the ANNOUNCEMENT OF THE GRADUATE DIVISION,

✓ On leave for duty in the armed forces.

SOUTHERN SECTION. In addition the student is required to complete at least 2 of the courses 110 to 114 besides the work done in his special field. The credentials and proposed study program of the student must be approved by the Chairman of the proper department or field of study, the Dean of the Graduate Division, Southern Section, and the Director of the Scripps Institution.

Any department of the University is invited to send its students to the Scripps Institution for special work. Ordinarily the department sending students will be responsible for the direction of the work but arrangements can be made for such students to work under the joint direction of the department and the staff of the Institution. Such students may register in one or more of the marine sciences at the Institution or they may register for some other subject in some other department of the University.

Students may not undertake graduate work at the Scripps Institution without approval in advance from the Dean of the Graduate Division, Southern Section.

UPPER DIVISION COURSES

- | | |
|---|---------------|
| 110. Introduction to Physical Oceanography. (3) I. | Mr. Sverdrup |
| 111. Submarine Geology. (3) I. | _____ |
| 112. Biology of the Sea. (3) I. | Mr. Johnson |
| 113. Chemistry of Sea Water. (3) I. | Mr. Rakestraw |
| 114. Marine Vertebrates. (3) I, II. | Mr. Hubbs |
| 199. Special Studies in Marine Sciences. (2-4) I, II. | |

Introduction to the observational and experimental methods, research problems, and literature of the marine sciences listed below. Open to advanced students by special arrangement with the instructor in charge.

- | | |
|---------------------------|--------------------------|
| (a) Physical Oceanography | Mr. Sverdrup, Mr. McEwen |
| (b) Marine Meteorology | Mr. Sverdrup, Mr. McEwen |
| (c) Marine Geology | _____ |
| (d) Chemical Oceanography | Mr. Rakestraw |
| (e) Marine Microbiology | Mr. ZoBell |
| (f) Marine Botany | _____ |
| (g) Marine Invertebrates | Mr. Johnson |
| (h) Marine Biochemistry | Mr. Fox |
| (i) Fishes and Fisheries | Mr. Hubbs |

GRADUATE COURSES

- | | |
|--|------------------------|
| 210. Physical Oceanography, General. (4) II. | Mr. Sverdrup |
| Dynamics of ocean currents; turbulence; wind currents; atmospheric boundary layer; water masses and currents of the ocean; work at sea. | |
| 211. Waves. (4) II. | _____ |
| Theory of surface and internal waves; wind waves, swell and surf; wave action on beaches; methods of observation; field work. | |
| *212. Tides. (3) I. | Mr. McEwen |
| Theory of tides; seiches; tides in adjacent seas; character of tides in different oceans; application of harmonic analysis. | |
| *220. Special Problems in Oceanography. (3) I. | The Staff and Visitors |
| Lectures and demonstrations by different members of the staff and visitors. Present problems in oceanography; applications of oceanographic knowledge. | |

* Not to be given, 1946-1947.

250. Seminar in Oceanography. (1) I, II. Mr. Sverdrup and the Staff
 *251 Seminar in Physical Oceanography. (3) I. The Staff
 Presentation of reports; review of literature.

Research Courses

The following are primarily research courses in different marine sciences. Besides the special prerequisites for each course, information concerning which may be had upon application, the student must submit to the instructor in charge satisfactory evidence of preparation for the work proposed, including the completion of at least 12 units of upper division work basic to the subject of the course. Any of the courses listed may be entered in either the spring or fall semester.

281. Physical Oceanography. (2-4) I, II. Mr. Sverdrup, Mr. McEwen
 A study of the physical properties of sea water, oceanic circulation and its causes.
282. Marine Meteorology. (2-4) I, II. Mr. Sverdrup, Mr. McEwen
 Interrelation between the circulation of the oceans and that of the atmosphere.
283. Marine Geology. (2-4), I, II. _____
 Configuration of the ocean basins, sedimentation and the study of recent sediments.
284. Chemical Oceanography. (2-4) I, II. Mr. Rakestraw
 Chemistry applied to the study of sea water, plankton, and other marine materials.
285. Marine Microbiology. (2-4) I, II. Mr. ZoBell
 The study of bacteria and closely related microorganisms in the sea, with particular reference to the effect of their activities upon chemical, physicochemical, geological, and biological conditions.
286. Marine Botany. (2-4) I, II. _____
 Qualitative and quantitative studies of phytoplankton and other marine plants, including ecology, physiology, nutrition and life cycles.
287. Marine Invertebrates. (2-4) I, II. Mr. Johnson
 Advanced studies of the ecology, life history and taxonomy of special groups.
288. Marine Biochemistry. (2-4) I, II. Mr. Fox
 Comparative biochemistry and physiology of marine animals; biochemical relationships between marine organisms and certain environmental factors.
289. Ichthyology. (2-4) I, II. Mr. Hubbs
 Systematics and ecology of fishes, considered group by group, with special reference to marine species.
299. Thesis Research in Marine Sciences. (2-4) I, II.
 (a) Physical Oceanography Mr. Sverdrup, Mr. McEwen
 (b) Marine Meteorology Mr. Sverdrup, Mr. McEwen
 (c) Marine Geology _____
 (d) Chemical Oceanography Mr. Rakestraw
 (e) Marine Microbiology Mr. ZoBell
 (f) Marine Botany _____
 (g) Marine Invertebrates and Zoöplankton Mr. Johnson
 (h) Marine Biochemistry Mr. Fox
 (i) Ichthyology and Fisheries Research Mr. Hubbs

* Not to be given, 1946-1947.

PHILOSOPHY

HUGH MILLER, Ph.D., Professor of Philosophy (Chairman of the Department).

DONALD A. PIATT, Ph.D., Professor of Philosophy.

HANS REICHENBACH, Ph.D., Professor of Philosophy.

JOHN ELOF BOODIN, Ph.D., Professor of Philosophy, Emeritus.

ERNEST C. MOORE, Ph.D., LL.D., Professor of Philosophy and Education, Emeritus.

CHARLES H. RIEBER, Ph.D., LL.D., Professor of Philosophy, Emeritus.

RICHARD B. O'B. HOOKING, Ph.D., Assistant Professor of Philosophy.

ABRAHAM KAPLAN, Ph.D., Assistant Professor of Philosophy.

J. WESLEY ROBSON, Ph.D., Assistant Professor of Philosophy.

PAUL WIENPAHL, Ph.D., Instructor in Philosophy.

PAUL FRIEDLANDER, Ph.D., Professor of Latin and Greek.

Letters and Science List.—All undergraduate courses in this department are included in the Letters and Science List of Courses. For regulations governing this list, see page 65.

Preparation for the Major.—Twelve units of lower division courses in philosophy, including courses 20, 21. Course 30 must be taken either as part of the preparation for the major or in the upper division.

The Major.—Twenty-four units in upper division courses, 6 of which may be in related courses in other departments with the approval of the departmental adviser. At the beginning of the senior year, the student must submit for approval to the department a statement of the courses which he expects to offer in fulfillment of major requirements for graduation.

Requirements for Admission to Graduate Courses.—A candidate for admission to graduate courses in philosophy must meet, in addition to the general University requirements, the minimum requirements for an undergraduate major in this department. If the candidate is deficient in this prerequisite he must fulfill it by undergraduate work which is not counted toward his graduate residence.

Requirements for the Master's Degree.—For the general requirements, see page 111. The Department of Philosophy requires:

1. A reading knowledge of one foreign language. The languages which the department will accept are Greek, Latin, French, and German.
2. At least 20 semester units, 8 or more of which must be in strictly graduate courses and the remainder in undergraduate courses numbered over 150.
3. A thesis supervised and approved by the department.
4. An oral examination designed to test the student's general knowledge of the history of philosophy, ethics and social philosophy, and logic and the scientific method.

Requirements for the Doctor's Degree.—For general regulations concerning this degree, see page 114. In the Department of Philosophy, the preliminary requirements are as follows:

1. A reading knowledge of two foreign languages. The acceptable languages are Greek, Latin, French, and German.
2. Qualifying examinations for advancement to candidacy, in part written

and in part oral. (a) Written examinations in four of the following fields: history of philosophy, contemporary philosophy, logic, philosophy of science, ethics, social philosophy. (b) An oral examination in the field of the student's special interest.

LOWER DIVISION COURSES

2A-2B. Introduction to Philosophy. (3-3) Yr. Beginning either semester.

Mr. Piatt, Mr. Kaplan, Mr. Wienpahl

This course introduces the student to the central problems and types of philosophy in their relations to science and society, and attempts to aid the student to work out a philosophy of life for himself.

2A is a prerequisite to 2B.

4. Short Introduction to Philosophy. (2) II. Mr. Wienpahl

Not open for credit to students who have completed 2A.

5. Problems of Ethics and Religion. (2) II.

Human conduct, its rules and natural law; the moral basis of institutions; religion and the moral order.

20. History of Greek Philosophy. (3) I, II.

Mr. Miller, Mr. Robson, Mr. Wienpahl

The beginnings of Western science and philosophy; Socrates, Plato, and Aristotle; Greek philosophies in the Roman world and in the Christian era.

21. History of Modern Philosophy. (3) I, II.

Prerequisite: course 20. Mr. Miller, Mr. Robson, Mr. Wienpahl

The Renaissance and the rise of modern science; rationalism in Descartes, Spinoza, Leibniz; empiricism in Locke, Berkeley, Hume; Kant and his successors; recent movements.

30. Inductive Logic and Scientific Method. (3) II. Mr. Kaplan

The use of logic in science and practical life; fallacies; theory of indirect evidence; construction of scientific hypotheses; probability and statistical method.

31. Deductive Logic. (3) I, II. Mr. Kaplan

The elements of formal logic; Aristotle's logic; modern symbolic logic. The forms of reasoning and the structure of language.

UPPER DIVISION COURSES

Upper division courses in philosophy include: (a) *General Studies* (numbered 104A to 148), dealing with the principles of wide fields of inquiry such as the natural sciences, the social sciences, and the humanities, or surveying the chief tendencies in the thought of a period. (b) *Historical Studies* (numbered 152 to 176), dealing more intensively with special periods or with individual thinkers. (c) *Systematic Studies* (numbered 180 to 186), pursuing a more rigorous analysis of the logical foundations of mathematics, science, and philosophy. Course 199A-199B is an individual problem course, available to exceptional students whose special studies are not included in the above curriculum.

General Studies

104A. Ethics. (3) I.

Mr. Piatt

Prerequisite: 9 units from Anthropology 1B, Sociology 1A-1B, Sociology 142, Economics 1A-1B, Political Science 3A-3B, Psychology 21, Psychology 147. Recommended: Psychology 147.

Morality in theory and practice: the history and development of ethical theory.

- 104B. Ethics. (3) II.** Mr. Piatt
 Prerequisite: course 104A.
 Morality in theory and practice: the critical application of ethical theory to contemporary civilization, with special reference to economic and political life.
- 112. Philosophy of Religion. (3) I.** _____
 The existence and nature of God, human free-will, the problem of evil, the relation of church and state, the rivalry of living religions.
- 114. History of American Thought. (3) II.** Mr. Robson
 Philosophies which have influenced American history, from colonial times to the present.
- 121. Political Philosophy. (3) I.** Mr. Miller
 Prerequisite: 6 units of philosophy, or adequate preparation in the social sciences and history.
 A study of the evolution of government, showing its causal relation to the development of science and philosophy, and its issue in democracy.
- 124. Nineteenth-Century Philosophy. (3) II.** _____
 Prerequisite: course 21 or the consent of the instructor.
 A study, in terms of outstanding philosophers, of the social and scientific movements of the nineteenth century.
- 136. The Philosophy of Art. (3) II.** _____
 Relation of the philosophy of art to the artist's activity, to aesthetic experience, and to the criticism of art. The principal theories of the nature of art; of aesthetic contemplation; and of beauty, sublimity, and other categories of aesthetic value. Nature and validity of standards of criticism.
- 141A. Present Tendencies of Thought. (2) I.** Mr. Robson
 Prerequisite: course 21 or the equivalent.
 A survey of leading tendencies in contemporary realism and naturalism.
- 141B. Present Tendencies of Thought. (2) II.** Mr. Kaplan
 Prerequisite: course 21 or the equivalent.
 A survey of leading tendencies in contemporary pragmatism, positivism, and scientific empiricism.
- 146. Philosophy in Literature. (3) I.** Mr. Robson
 A study of philosophical ideas expressed in the literary masterpieces of Plato, Lucretius, Dante, Shakespeare, Goethe, Tolstoy, Lewis Carroll, Thomas Mann, and others.
- *147. Philosophy of History. (3) II.** Mr. Miller
 Prerequisite: 6 units of philosophy, or adequate preparation in history and the social sciences.
 A study of the historical progress of society, relating human progress to the natural evolution described by modern science.
- *148. Philosophy of Nature. (3).** Mr. Reichenbach
 The physical universe and man's place in it in the light of modern discoveries.

* Not to be given, 1946-1947.

Historical Studies

152. **Plato and His Predecessors. (3) I.** Mr. Friedlander
Prerequisite: course 20 or the consent of the instructor.
153. **Aristotle and Later Greek Philosophy. (3) II.** Mr. Friedlander
Prerequisite: course 20 or the consent of the instructor.
157. **Medieval Philosophy. (3) I.** _____
Prerequisite: course 20 or the equivalent.
Philosophy in Christendom from the fourth to the fourteenth century, with particular reference to St. Augustine and St. Thomas Aquinas.
162. **Continental Rationalism. (3) I.** Mr. Wienpahl
Prerequisite: course 21.
The philosophies of Descartes, Spinoza, and Leibniz.
163. **British Empiricism. (3) II.** Mr. Robson
Prerequisite: course 21.
The philosophies of Locke, Berkeley, and Hume.
166. **Kant. (2) I.** _____
Prerequisite: course 21 or the consent of the instructor.
172. **Contemporary Philosophy: Idealism. (2) II.** _____
Prerequisite: course 21.
Idealism in Europe and America, with special reference to Bradley, Royce, Bergson, Croce.
- *174. **Contemporary Philosophy: Realism. (2).** Mr. Robson
Prerequisite: course 21.
Theories of knowledge and nature in Moore, Russell, Santayana, Whitehead, and others.
- *175. **Contemporary Philosophy: Pragmatism. (2).** Mr. Piatt
Prerequisite: the consent of the instructor, based on the student's knowledge of the history of philosophy.
A systematic and critical analysis of American pragmatism, with special reference to James, Dewey, and Mead.
176. **Naturalism. (2) II.** Mr. Piatt
Prerequisite: the consent of the instructor, based on the student's knowledge of the history of philosophy.
A systematic and critical study of the development of naturalism.

Systematic Studies

- *180. **Philosophy of Space and Time. (3).** Mr. Reichenbach
Prerequisite: course 30 or the equivalent.
Euclidean and non-Euclidean geometry; problem of physical space; presentativeness of geometrical systems; structure of time; philosophical elements of Einstein's theory of relativity; gravitation, matter, geometry.
- *181. **Theory of Knowledge. (3) II.** Mr. Reichenbach
Prerequisite: course 30 or the equivalent.
Not open for credit to students who have had course 149.
Theories of language, truth, probability, and meaning. The foundations of empiricism: the problem of impressions and the existence of external objects; the construction of our knowledge of the physical world on the basis of observation; the nature of psychology.

* Not to be given, 1946-1947.

- 182. Empirical Rationalism. (2) II.** Mr. Miller
Prerequisite: 3 units from courses listed under Historical Studies.
A systematic exposition of epistemology and metaphysics, showing how the diverse traditions and movements of philosophy find their synthesis today as the result of recent advances in logic and the sciences.
- 183. Social Philosophy. (2) I.** Mr. Kaplan
Prerequisite: the consent of the instructor.
Problems of social policy and the logic of the social sciences, with special reference to recent developments in the conception of human nature and interpersonal relations.
- *184. Advanced Logic. (3).** Mr. Reichenbach
Prerequisite: course 31, or the equivalent.
Methods of logistics; foundations of mathematics; concept of the infinite; paradoxes of logic; logic and language; multivalued logics.
- *185. Foundations of Probability and Statistics. (3) II.** Mr. Reichenbach
Prerequisite: courses 30 and 31, or the equivalent.
Logical and mathematical theories of probability; development of the mathematical calculus of probability in a logistic form; outlines of a general mathematical theory of probability and statistics; different interpretations of probability; problem of induction; probability logic.
- *186. Philosophy of Evolution. (2).** Mr. Miller
Prerequisite: the consent of the instructor.
A study of the basic concepts of evolution now used in the several sciences, looking to the expansion of these concepts in an adequate philosophy of nature and society.
- 199A-199B. Selected Problems in Philosophy. (2-3; 2-3) Yr.**
Admission by special arrangement. Mr. Robson in charge

GRADUATE COURSES

- 251. Seminar: Metaphysics. (3) II.** Mr. Miller
- *252. Seminar: Naturalism. (3).** Mr. Piatt
- *253. Seminar: Pragmatism. (3).** Mr. Piatt
- 254. Seminar: Ethics and Theory of Value. (3) I.** Mr. Piatt
- *255. Seminar: Political Philosophy. (3).** Mr. Miller
- 257. Seminar: Philosophy of History. (3) I.** Mr. Miller
- *260. Seminar: Philosophy of Mathematics. (3).** Mr. Reichenbach
- *262. Seminar: Philosophy of Physics. (3) II.** Mr. Reichenbach
- *263. Seminar: Epistemology. (3).** Mr. Reichenbach
- *264. Seminar: Logic. (3).** Mr. Reichenbach
- 270. Seminar: Nature, Mind, and the Body-mind Relationship. (3) II.**
- 298A-298B. Special Study: Selected Problems in Philosophy. (2-4; 2-4) Yr.**
Mr. Piatt in charge

* Not to be given, 1946-1947.

PHYSICAL EDUCATION

- JOHN F. BOVARD, Ph.D., Professor of Physical Education and Director of the Men's Division (Chairman of the Department).
- HAZEL J. CUBBERLEY, M.A., Associate Professor of Physical Education.
- MAETHA B. DEANE, B.S., Associate Professor of Physical Education and Director of the Women's Division.
- RUTH E. FULTON, Ph.D., Assistant Professor in Physical Education.
- GEORGIA B. JOHNSON, Ph.D., Assistant Professor of Education.
- WILLIAM H. SPAULDING, A.B., Director of Athletics.
- NORMAN D. DUNCAN, M.A., Associate Supervisor of Physical Education.
- PAUL FRAMPTON, M.A., Associate Supervisor of Physical Education.
- LUCILE R. GRUNEWALD, M.A., Associate Supervisor of Physical Education.
- CECIL B. HOLLINGSWORTH, M.A., Associate Supervisor of Physical Education.
- DIANA W. ANDERSON, M.A., Assistant Supervisor of Physical Education and Supervisor of Training, Physical Education.
- EDITH R. HARSHBERGER, M.A., Assistant Supervisor of Physical Education.
- BERNECE H. HOOPER, M.A., Assistant Supervisor of Physical Education.
- EDITH I. HYDE, M.A., Assistant Supervisor of Physical Education.
- JACK E. MONTGOMERY, Ed.B., Assistant Supervisor of Physical Education.
- DONALD K. PARK, B.S., Assistant Supervisor of Physical Education.
- ORSIE THOMSON, M.A., Assistant Supervisor of Physical Education.
- MARJORY ALLEN, Ed.B., Junior Supervisor of Physical Education.
- MARILYN CHRISTLIEB, M.A., Junior Supervisor of Physical Education.
- WALTER CROWE, B.S., Junior Supervisor in Physical Education.
- ARTHUR HAWKES, M.S., Junior Supervisor of Physical Education.
- M. BRIGGS HUNT, Ed.B., Junior Supervisor in Physical Education.
- MARIA C. MAGINNIS, B.S., Junior Supervisor of Physical Education.
- FORREST DUTTON POORMAN, M.A., Junior Supervisor in Physical Education.
- ELIZABETH PRANGE, M.S., Junior Supervisor in Physical Education.
- WAYNE ROSENOFF, B.S., Junior Supervisor of Physical Education.
- HELEN SWENSON, M.S., Junior Supervisor of Physical Education.
- EVELYN STRAUSS, Assistant in Physical Education.
- HELEN MAVIS DILLON, Pianist.
- *JAMES G. SCHAEFFER, Assistant in Physical Education.
- DONALD MCKINNON, M.D., Physician for Men.

Physical Education 1 (men) or 26 (women) is prescribed for all first-year and second-year undergraduate students who are under twenty-four years of age. A student claiming exemption because of age will present to the Register a petition on the prescribed form for such exemption. A student whose health requires either exemption or special assignment will report directly to the Medical Examiner. Pending action on his petition, the student will enroll in and regularly attend the required course in physical education.

* Absent on leave, 1946-1947.

Medical Examination.—(a) students entering the University for the first time and (b) reëntering students are required to obtain a clearance of their health records and are requested to make appointments at the Health Service, Library Building, Room 1, at the time of registration. The examiner may exempt the student from required military training; he may assign the student to a restricted exercise section of Physical Education.

College of Applied Arts

A. Major for Prospective Teachers.

WOMEN

Preparation for the Major.—Courses 5, 20, 31, 32, 44, Chemistry 2A; Zoölogy 15, 35.

The Major.—Thirty-six units of upper division courses in physical education and related fields, including courses 101, 102, 105, 130, 132, 145A-145B, 152, 326A-326B, 327A-327B, and 7 units to be selected from 130C, 131, 135, 140, 140C, 141, 142, 150, 151, 153A-153B, 155A-155B, 183, 199A-199B, Education 111, 112, 180, Psychology 110.

MEN

Preparation for the Major.—Courses 2, 5, 6, 7, 8, 9, 20, 24; Chemistry 2A; Zoölogy 5, 35.

The Major.—Thirty-six units of upper division courses in physical education and related fields, including courses 101, 102, 105, 130, 131, 135, 145A-145B, 356A-356B, and 10 units to be selected from 140, 140C, 142, 155A, 171, 199A-199B; Education 111, 112, Psychology 110.

MEN AND WOMEN

The Minor for the Bachelor's Degree.—Twenty units of coördinated courses (aside from those taken in education), not less than 6 of which are in the upper division.

The Special Secondary Teaching Credential in Physical Education.—The curriculum must include at least 12 units of physical activities, 12 units of physical education theory and practice, and 12 units of health education theory and practice. For other requirements consult the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION, LOS ANGELES.

The General Secondary Teaching Credential.—Graduate status required. A teaching major of from 40 to 54 units is required, of which not less than 24 units are upper division or graduate courses. For other requirements, including those of the minor, consult the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION, LOS ANGELES.

B. Major in Physical Therapy (Men and Women).

1. **Major, by Affiliation.** The program includes three years of University work (90 units) and a fourteen-month course at the Children's Hospital School of Physical Therapy,* which is affiliated with the University. The hospital work which is completed in the senior year is accepted in fulfillment of the

* Students completing the three-year University program cannot be assured of admission to the Children's Hospital School of Physical Therapy. When the number of qualified applicants exceeds the available facilities selection of students will be made on the basis of scholarship as determined from the transcript of record, examination, and by personal interview.

residence requirement. Students completing the combined program will receive the degree of Bachelor of Science and the Certificate in Physical Therapy.

Preparation for the Major.—Courses 20, 44, Chemistry 2A, Physics 10A, Zoölogy 15, 35, Psychology 21, 22.

The Major.—Courses 101, 102, 105, and the fourteen-month course at the Children's Hospital School of Physical Therapy. The Hospital program includes courses in anatomy, pathology, psychology, electrotherapy, hydrotherapy, massage, therapeutic exercise, physical therapy as applied to medicine—neurology—orthopedics—surgery, ethics and administration, clinical practice elective courses recommended by the American Medical Association and the American Physical Therapy Association. A maximum of 30 units will be allowed for completion of the Hospital program.

2. *Major, Four-year Plan.* Curriculum designed to prepare students to enter schools of physical therapy for postgraduate work. Leads to the degree of Bachelor of Science only.

Preparation for the Major.—Courses 5, 20, 43, 44, Chemistry 2A, Physics 10A or 2A, Zoölogy 1A, 13, 35. Recommended: Art 27A, Psychology 21, 22, or 23, Public Speaking 1A, 1B, Sociology 1A-1B.

The Major.—Courses 101, 102, 105, 145A-145B, 183, 184, 185, 186A-186B, and 8 units selected from courses 130, 140, 141, 142, 155A-155B; Education 110, 111, 112, 160, 180; Psychology 108, 112, 166A-166B, 168, 169.

C. Recreation Major.

This major is designed to develop leaders in recreation with a sound general education, an insight into the social responsibilities of community agencies, and an understanding of the nature and significance of group work as a technique.

Preparation for the Major.—Courses 5, 23, 26, 44, Art 27A-27B, 48A-48B, Astronomy 1, Biology 1, Botany 1A, Public Speaking 2A, Geology 5, Music 2A-2B.

The Major.—Courses 132, 139, 140, 140C, 140D, 141, 142, 143, 144, 152, 155B, American Institutions 101, History 172, 173, Public Speaking 156, Psychology 147.

D. Curriculum in Dance. For details concerning this curriculum, see page 105.

College of Letters and Science†

Letters and Science List.—Courses 1, 2, 26, 44, 130, 135, 140, 146, 150, 151, 155A-155B are included in the Letters and Science List of Courses. For regulations governing this list, see page 65.

LOWER DIVISION COURSES

1. Prescribed Physical Education for Freshmen and Sophomores (Men).

(1) I, II

The Staff

Classes meet three times weekly. Section assignments are made by the department. Physical Education 1 may be elected by students in the junior and senior years.

† The University of California at Los Angeles does not offer a major in physical education in the College of Letters and Science. A group major in physical education and hygiene is offered in the University at Berkeley. Students wishing to satisfy the requirements for this major are referred to the GENERAL CATALOGUE, DEPARTMENTS AT BERKELEY.

- 2. Hygiene and Sanitation (Men and Women).** (2) I, II. Mr. McKinnon
- 5. Safety Education and First Aid.** (2) I, II.
 *Section 1 (Women). Mrs. Johnson
 *Section 2 (Women). Mrs. Harshburger
 Section 3 (Men). Mr. Crowe
 Prevention and care of common accidents and emergencies in the home and school.
- 6. Professional Activities (Men).** (1½) I. The Staff
 The class meets for two hours two times a week. Only open to students with a major or a minor in physical education. Students taking this course are excused from the regular prescribed physical education, course 1. Professional students must also take training in baseball, boxing, and wrestling.
 The fundamental activities necessary for teaching in the secondary and college fields.
- 7. Professional Activities (Men).** (1½) II. The Staff
 The class meets for two hours two times a week. Open only to students with a major or a minor in physical education.
 Football, tumbling, and apparatus.
- 8. Professional Activities (Men).** (1½) II. The Staff
 Basketball, speedball, soccer, and volleyball.
- 9. Professional Activities (Men).** (1½) II. The Staff
 Track, field, tennis, and water polo.
- *15. Fundamentals of Scouting (Men)** (2). Mr. Frampton
 Lectures; three field trips required.
 Need of organization for youth; history and growth of the Boy Scouts of America; the Boy Scout program; organization of a troop and techniques of troop management; fundamentals involved in troop activities.
- 20. Introduction to Physical Education (Men and Women).** (1) I.
 Section 1. Miss Deane
 Section 2. Mr. Hollingsworth
- 23. Recreational Activities (Men and Women).** (1) I, II. Miss Swenson
 Discussion, one hour; laboratory, two hours.
 Discussion of philosophy of recreation with emphasis on the use of recreational agencies; the development of recreational skills and knowledge for use in the community.
- 24. The Technique of Teaching Swimming and Life Saving (Men and Women.)** (2) I, II. Miss Fulton
 Section 1 (Women). II.
 Prerequisite: students must be at least twenty years of age, have a Red Cross Life Saving Certificate up-to-date, and show a definite need for the appointment to receive a Red Cross Life Saving Instructor's Certificate.
 Section 2 (Men). I, II. Mr. Montgomery and Mr. Frampton
 Prerequisite: students must pass a qualifying test at the first meeting of class.
 Upon successful completion of the course, those 16 years of age or over are eligible for the Senior Red Cross Life Saving Certificate; and those 18

* Not to be given, 1946-1947.

years of age or over may be granted the Red Cross Instructor's Certificate if need is shown.

Section 2 may be substituted for course 1 for the semester in which enrolled.

26. Prescribed Physical Education for Freshmen and Sophomores (Women).

(1) I, II.

Miss Deane and the Staff

Classes meet three times weekly. Section assignments are made only by the department. This course may be elected for credit by juniors and seniors.

Students whose physical condition indicates the need of modified activity are assigned to individual physical education classes.

31. Professional Activities (Women). (3) I.

Miss Deane, Miss Hooper, ———

Section 1. Dance and Physical Education Majors (Women).

Section 2. Drama Majors (Men and Women).

Open only to students with a major or minor in physical education. Men or women students may substitute this course for the respective required courses, 1 and 26, for the semester in which enrolled.

Fundamental rhythmic activities; music analysis for dance.

32. Professional Activities (Women). (3) II. Miss Thomson, Miss Fulton

Open only to students with a major or minor in physical education. Students are excused from the physical education requirement, course 26, during the semester in which they are enrolled in this course.

Theory and practice of techniques and officiating in the athletic activities.

43. Recreation for the Handicapped. (1) I.

Miss Swenson

Activities based on the therapeutic value of fun for the specific purpose of building morale.

44. Principles of Health Education (Women). (2) I, II.

Miss Harshberger, Mrs. Johnson

Sections 1, 2. General Elementary Students.

Sections 3, 4. General Students, Letters and Science.

Section 5. Physical Education Majors.

Section 6. Nurses Training Students.

UPPER DIVISION COURSES

101. Kinesiology (Men and Women). (3) I.

Section 1 (Women).

Miss Grunewald

Section 2 (Men).

Mr. Frampton

Prerequisite: Zoölogy 35.

Designed for teaching corrective physical education, physical therapy, and occupational therapy.

102. Corrective Physical Education. (3) II.

Section 1 (Women).

Miss Grunewald

Section 2 (Men).

Mr. Frampton

Prerequisite: course 101 or the permission of the instructor. Designed for teachers, nurses, physical therapy aides, and occupational therapists.

105. **Physiology of Exercise (Men and Women).** (3) I. Mrs. Johnson
 Section 1.
 Section 2.
 Prerequisite: Zoölogy 15.
130. **Principles of Physical Education (Men and Women).** (2) II. Miss Cubberley
- 130C. **Observations in Physical Education (Men and Women).** (1) II. Miss Cubberley
 May be taken separately or concurrently with Physical Education 130.
131. **Administration of Physical Education (Men and Women).** (3) II. Mr. Hollingsworth
 Prerequisite: Physical Education 130.
132. **Organization of Athletics (Women).** (2) I. Miss Thomson
 Prerequisite: Courses 130, 326A, 326B.
135. **Physical Education Tests and Measurements (Men and Women).** (2) II. _____
139. **Principles of Recreation.** (3) I. Miss Swenson
 The nature and function of recreation; the contemporary philosophical basis for program development.
140. **Administration of Community Recreation (Men and Women).** (3) II. Miss Hooper
- 140C. **Community Recreation Laboratory.** (2) I, II. Miss Hooper
 Prerequisite: course 140 (may be taken concurrently on permission of instructor).
- 140D. **Community Recreation Laboratory.** (2) II. Miss Hooper
 A continuation of course 140C to embody different content or work with new material or a different age group.
141. **Club Activities.** (2) I. Miss Hooper
 Training course for leaders of organizations interested in physical and social welfare.
142. **Camp Craft (Men and Women).** (2) II. Miss Hooper
 Training course for camp counselors.
143. **Problems in Group Work.** (2) II. Miss Swenson
 Principles and procedures of group work in recreation with emphasis on group structure, community relations, and program planning.
144. **Recreation Survey** (2) I. Miss Swenson
 Opportunities and needs in recreation with an introduction to techniques of conducting a recreation survey for program development.
- 145A. **Administration of Health Education (Men and Women).** (3) I. Miss Harshberger
 Prerequisite: course 105.
 Health instruction in the elementary and secondary schools.
- 145B. **Administration of Health Education (Men and Women).** (3) II. Mrs. Johnson
 Prerequisite: course 105.
 Health protection. The problems, principles, and methods involved in the supervision of child health.

146. **Social Aspects of Health (Men and Women).** (2) II.
Miss Harshberger
Not open to majors in physical education or to students who have credit for 145A, 145B.
- *150. **History of Dance and the Related Arts (Men and Women).** (2) II.
Prerequisite: course 31 or the equivalent.
151. **History of Dance in America (Men and Women).** (2) I.
Miss Maginnis
152. **Organization of Public Performances (Men and Women).** (2) II.
Miss Deane
- 153A-153B. **Dance Composition Workshop (Men and Women).** (2-2) Yr.
Miss Brooks, Miss Maginnis
- 155A. **Folk Festivals.** (2) I.
Organization and administration of folk festivals. Presentation of a Christmas Folk Festival.
Miss Hooper
- 155B. **Folk Festivals.** (2) II.
Study of folklore, festivals; pageants. The preparation of an original script is required.
Miss Hooper
171. **Conditioning of Athletes and Care of Injuries (Men).** (2) II.
Mr. Montgomery
Lecture, one hour; laboratory, three hours. Prerequisite: course 105.
183. **Massage (Women).** (2) I.
Miss Grunewald
Theory and practice, lecture, demonstration, and clinical practice.
184. **Muscle Reëducation (Women).** (3) II.
Mrs. Strauss
Muscle reëducation techniques in paralyzes, orthopaedic and surgical cases, muscle analyses and techniques of testing. Lectures, demonstrations, and clinical practice. For students in the fields of physical and occupational therapy.
185. **Physical Activities for Rehabilitation (Men and Women).** (2) I.
Lectures and laboratory.
Mrs. Strauss
- *186A-186B. **Therapeutic Exercise (Women).** (3-3). Beginning either semester.
Mrs. Strauss
The clinical use of exercise in the therapy of poliomyelitis, orthopaedic and surgical cases, chronic conditions, and other medical cases. Lectures and demonstrations, clinical practice.
198. **Physical Education Problems (Group).** (1-4) I, II.
Prerequisite: the consent of the instructor.
The Staff
- 199A-199B. **Physical Education Problems (Individual).** (1-4; 1-4). Beginning either semester.
Prerequisite: the consent of the instructor.
The Staff

GRADUATE COURSES

201. **Curriculum in Physical Education in Secondary Schools.** (3) II.

Primarily for students in the fifth year preparing for the General Secondary Credential. Units will count toward the requirement of 6 units in graduate courses necessary for this credential.

* Not to be given, 1946-1947.

260. **Seminar in Physical Education (Men and Women).** (3) I. Mr. Bovard
Prerequisite: the consent of the instructor.
The theory of physical education.
261. **Seminar in Physical Education (Men and Women).** (3) II.
Prerequisite: the consent of the instructor. Mr. Bovard
Physiological background.
276. **Research in Physical Education (Men and Women).** (2) I. Mr. Bovard
Prerequisite: the consent of the instructor.
Techniques of research procedure.
277. **Research in Physical Education (Men and Women).** (2) II.
Prerequisite: the consent of the instructor. Mr. Bovard
Research in tests and measurements.
298. **Research Problems (Group) (Men and Women).** (1-4) I, II.
Prerequisite: the consent of the instructor. The Staff
299. **Research Problems (Individual) (Men and Women).** (1-4) I, II.
Prerequisite: the consent of the instructor. The Staff

PROFESSIONAL COURSES IN METHOD

- 326A-326B. **Principles of Teaching Athletics (Women).** (2-2) Yr.
Prerequisite: course 32 or the equivalent. Miss Thomson
Officiating in local schools and recreation centers is required.
- 327A-327B. **Principles of Teaching Dance (Women).** (2-2) Yr.)
Prerequisite: course 31 or its equivalent. Miss Deane, ———
330. **Physical Education in the Elementary School (Men and Women).** (3)
I, II. Miss Anderson
Prerequisite: junior standing, courses 26, sections 1 and 2, and 44, or the equivalent, and Education 111. Required of all candidates for the General Elementary Credential. Each student must plan a program with two consecutive hours a week for observation, between the hours 9 A.M. and 3 P.M.
354. **Teaching Fundamentals (Men).** (2) II. Mr. Hollingsworth
The fundamental principle involved in teaching activities.
- 355A. **The Technique of Teaching Activities.** (2) I. The Staff
Prerequisites: course and the consent of the instructor.
Apparatus and tumbling.
- 355B. **The Technique of Teaching Activities.** (2) II. The Staff
Prerequisite: the consent of the instructor.
Baseball, boxing, and wrestling.
- 356A. **The Technique of Teaching Activities (Men).** (2) I. The Staff
Track, field, and tennis.
- 356B. **The Technique of Teaching Athletic Activities (Men).** (2) I.
Prerequisite: the consent of the instructor. The Staff
Football, tumbling, apparatus, and water polo.

PHYSICS

JOSEPH W. ELLIS, Ph.D., Professor of Physics (Chairman of the Department).

JOSEPH KAPLAN, Ph.D., Professor of Physics.

E. LEE KINSEY, Ph.D., Professor of Physics.

VERN O. KNUDSEN, Ph.D., Professor of Physics.

SAMUEL J. BARNETT, Ph.D., Professor of Physics, Emeritus.

ALFREDO BAÑOS, JR., Dr. Eng., Ph.D., Associate Professor of Physics.

LEO P. DELSASSO, Ph.D., Associate Professor of Physics.

* LAURENCE E. DODD, Ph.D., Associate Professor of Physics.

J. REGINALD RICHARDSON, Ph.D., Associate Professor of Physics.

* ARTHUR H. WARNER, Ph.D., Associate Professor of Physics.

ROBERT W. LEONARD, Ph.D., Assistant Professor of Physics.

NORMAN A. WATSON, Ph.D., Associate Professor of Physics.

R. EDWIN WORLEY, Ph.D., Assistant Professor of Physics.

BYRON T. WRIGHT, Ph.D., Assistant Professor of Physics.

JÖRGEN HOLMBOE, M.Sc., Professor of Meteorology.

Letters and Science List.—All undergraduate courses in physics are included in the Letters and Science List of Courses. For regulations governing this list, see page 65.

Preparation for the Major in Physics.—Required: Physics 1A, 1B, 1D, 1C, or, with the consent of a department adviser, Physics 2A, 1D, 1C or Physics 2A, 2B; Chemistry 1A, 1B; Mathematics C, 3A, 3B, 4A, or their equivalents. An average grade of C or higher must be maintained in physics. Recommended: a reading knowledge of German and French.

The Major in Physics.—The following upper division courses in physics, representing at least one course in each of the main subjects in physics, are required: 105, 107, 107C, 108B, 108C, 110 or 116, 112 or 119, 114A, 113 or 121. An average grade of C or higher must be maintained in the above courses. Strongly recommended: Mathematics 119A and 112A–122B. Recommended: a reading knowledge of German and French. This major leads to the degree of Bachelor of Arts in the College of Letters and Science.

Preparation for the Major in Applied Physics.—In addition to the requirements listed above for the preparation for the major in physics, the following courses or subjects are also required: English 1A–1B, Chemistry 8, Mechanical Drawing, and a course dealing with materials and shop operations. Either or both of the two last named courses may have been taken in high school, University Extension, or elsewhere, or may be taken in the Department of Mechanic Arts or in the College of Engineering.

The Major in Applied Physics.—The following upper division courses in physics (or chemistry), constituting 26 or 28 units, are required: Physics 105,

* In residence second semester only, 1946–1947.

* Absent on leave, 1946–1947.

107, 107C, 108B, 108C, 112, 114A and one of the following sequences—(a) 110, 116, 116C; (b) 108A, 109, 113, 113C; (c) 114B, 114C, 116, 116C; (d) Chemistry 110A, 110B, 111B. Four units of mathematics are required as follows: 110A, 110B. An average grade of C or higher must be maintained in the above courses. Recommended: a reading knowledge of German and French. This major leads to the degree of Bachelor of Science in the College of Letters and Science.

Laboratory Fees.—Courses 1A, 1B, 1C, 1D, 2A, 2B, \$6; 109, \$10; 107C, 108C, 113C, 114C, 116C, \$14. The student will, in addition, be held responsible for all apparatus lost or broken.

PHYSICS

LOWER DIVISION COURSES

Prerequisite for 1A, 1B, 1C, 1D: high school physics or chemistry and three years of high school mathematics, including trigonometry. Prerequisite for course 2A–2B: (1) three years of high school mathematics, or (2) two years of high school mathematics and college algebra. Prerequisites for course 10A–10B are elementary algebra and plane geometry.

Physics 1A, 1B, 1D, and 1C constitute a two-year sequence in general physics which is required of prechemistry and preengineering students. It is recommended as a first choice for major students in physics and astronomy, and, with the exception of 1B, for major students in chemistry. Alternative sequences in general physics, acceptable under certain circumstances to the departments of physics, astronomy, and chemistry for their major students are: 2A, 1D and 1C; and 2A, 2B. Before choosing either of these alternative sequences students must have the consent of their department advisers.

Students in departments other than those listed in the preceding paragraph may elect any part of the 1A, 1B, 1D, 1C sequence; however, 1A is prerequisite to any of the other courses in the sequence. At least two parts are required to meet the laboratory requirement for the degree of Associate in Arts or upper division standing.

Students who have credit for courses 2A–2B or 10A–10B may receive additional credit of not more than $1\frac{1}{2}$ units for each of courses 1A and 1B, and not more than 2 units for each of courses 1C and 1D. In general, not more than 12 units of credit will be given for any amount of lower division work. Credit in excess of 12 units will be given only in exceptional cases, when approved by the department.

1A. General Physics: Mechanics of Solids. (3) I, II.

Mr. Watson, Mr. Richardson

Lecture and demonstration, three hours; laboratory, two hours. Fee, \$6.

1B. General Physics: Mechanics of Fluids, and Heat. (3) I, II.

Mr. Dodd, Mr. Wright

Lecture and demonstration, three hours; laboratory, two hours. Prerequisite: course 1A. Fee, \$6.

1C. General Physics: Electricity and Magnetism. (3) I, II. Mr. Delsasso

Lecture and demonstration, three hours; laboratory, two hours. Prerequisite: course 1A. Recommended: a knowledge of elementary calculus. Fee, \$6.

1D. General Physics: Light and Sound. (3) I, II. Mr. Ellis, Mr. Worley

Lecture and demonstration, three hours; laboratory, two hours. Prerequisite: course 1A. Fee, \$6.

2A. General Physics: Mechanics and Heat. (4) I, II.

Mr. Kinsey, Mr. Kaplan
Lectures and demonstrations, four hours; laboratory, two hours. Prescribed for premedical students. Fee, \$6.

2B. General Physics: Electricity, Magnetism, Light, and Sound. (4) I, II.

Mr. Kinsey
Lectures and demonstrations, four hours; laboratory, two hours. Prescribed for premedical students. Fee, \$6.

10A-10B. General Physics. (3-3) Yr.

Mr. Baffos
An introductory survey course in classical and modern physics designed primarily for liberal arts students.

Students desiring laboratory work in lower division physics are referred to courses 21 (2A) and 21 (2B).

21. Supplementary Laboratory Courses in General Physics. (1)

Lower Division Staff (Mr. Ellis in charge)

These courses are intended primarily for students entering the University with partial credit in general physics and are part of the regular work of courses 1A, 1B, 1C, 1D, 2A, and 2B in the semester or semesters indicated for each. A fee (to be announced) is charged in each course. Students should enroll under one or more of the following numbers:

- 21 (1A). Mechanics of Solids. I, II.
- 21 (1B). Mechanics of Fluids, and Heat. I, II.
- 21 (1C). Electricity and Magnetism. I, II.
- 21 (1D). Light and Sound. I, II.
- 21 (2A). Mechanics and Heat. I, II.
- 21 (2B). Electricity, Magnetism, Light, and Sound. I, II.

UPPER DIVISION COURSES

Prerequisite for all upper division courses: Physics 1A, 1B, 1D, 1C, or 2A, 1D, 1C, or 2A-2B; mathematics 3B, 4A; or the equivalents. Upper division standing is required for all courses except 105, 107, 107C, 108A, 109, 121.

105. Analytic Mechanics. (3) I, II.

Mr. Watson, Mr. Delsasso
The statics and dynamics of particles and rigid bodies.

107. Electrical Theory and Measurements. (3) I.

Mr. Leonard
Lectures in direct and alternating current quantities and in introductory electronics.

Prerequisite: course 1C or 2B or the equivalent.

107C. Electrical Measurements Laboratory. (2) I.

Mr. Leonard
Laboratory to accompany 107. Fee, \$14.

108A. Geometrical Optics. (3) II.

Mr. Dodd
Lecture, two hours; laboratory, three hours.
Prerequisite: course 1D or 2B, or equivalent. Fee to be announced.

108B. Physical Optics. (3) I.

Mr. Ellis
Interference, diffraction, polarization, and their applications.

108C. Physical Optics Laboratory. (1) I.

Mr. Watson
Fee, \$14.

- *109. Modern Optical Instruments. (3) II.** Mr. Dodd
Lecture, two hours; laboratory, three hours.
Prerequisite or concurrent: course 108A. Fee, \$10.
- 110. Electricity and Magnetism. (3) II.** Mr. Worley
Prerequisite: courses 105 and 107, or consent of the instructor. A survey of field theory, to include systems of charged conductors and of linear circuits, simple dielectric and magnetic media, and the formulation of Maxwell's equations.
- 112. Heat. (3) I.** Mr. Kaplan
The thermal properties of matter with an introduction to thermodynamics.
- 113. Introduction to Spectroscopy and Quantum Theory. (3) II.** Mr. Ellis
- 113C. Spectroscopy Laboratory. (1) II.** Mr. Kaplan
Prerequisite or concurrent: course 113 or Astronomy 117A. Fee, \$14.
- 114A. Mechanics of Wave Motion and Sound. (3) I, II.**
Prerequisite: course 105. Mr. Knudsen, Mr. Delsasso
Vibration of particles and elastic bodies; sound sources; propagation in elastic media.
- 114B. Mechanics of Wave Motion and Sound. (3) I, II.** Mr. Delsasso, Mr. Watson
Prerequisite: course 114A or the equivalent.
Propagation of sound in gases; reflection, refraction, interference, and diffraction of sound; acoustic impedance; applications.
- 114C. Mechanics of Wave Motion and Sound Laboratory. (2) II.** Mr. Delsasso
Prerequisite: courses 107, 107C, and 114B or consent of the instructor.
Fee, \$14.
- 116. Electronics. (3) II.** Mr. Leonard
Prerequisite: senior standing, and courses 107 and 107C. The properties of electrons; thermionic emission; the conduction of electricity in gases; vacuum tubes and circuits.
- 116C. Electronics Laboratory. (2) II.** Mr. Leonard
Laboratory to accompany 116. Fee, \$14.
- 117. Hydrodynamics. (3) II.** Mr. Holmboe
- 119. Kinetic Theory. (3) II.** Mr. Watson
The classical kinetic theory of gases, with applications.
- 121. Atomic Physics. (3) I.** Mr. Baños
A comprehensive survey course on the physics of the atom, dealing extensively with the nature of its nuclear and extranuclear structures, stressing certain topics as the photoelectric effect, the Compton effect, and the nature of X rays, and ending with an introduction to radioactivity and nuclear physics.
- 124. Radioactivity and Nuclear Structure. (3) I.** Mr. Richardson

* Not to be given, 1946-1947.

199. Special Problems in Physics.Section 1. **General Problems.** (1-3) I, II.

Mr. Ellis in charge

Section 2. **Oscillators.** (3) I.

Mr. Leonard

GRADUATE COURSES***208. Classical Optics.** (3) I.

Mr. Ellis

Propagation of light waves in isotropic and anisotropic media, interference, diffraction, dispersion, and polarization on the basis of the electromagnetic theory of light.

210A-210B. Electromagnetic Theory. (3-3) Yr.

Mr. Baños

An advanced course on electromagnetic theory based exclusively on the vector treatment of Maxwell's equations and dealing principally with variable electromagnetic fields and with the general theory of wave propagation in unbounded media and in the case of guided waves. Special attention is given to the solution of boundary value problems and of radiation problems in general, including an introduction to relativistic electrodynamics.

***212. Thermodynamics.** (3) II.

Mr. Kaplan

213. Spectra and Structures of Diatomic and Polyatomic Molecules. (4) I.

Mr. Ellis

***214. Advanced Acoustics.** (3) I.

Mr. Knudsen

215. Statistical Mechanics. (3)

Mr. Kaplan

217. Hydrodynamics. (3) II.

Mr. Holmboe

220A. Theoretical Mechanics. (3) I.

Mr. Kinsey

220B. Theoretical Mechanics. (3) II.

Mr. Kinsey

***220C. Quantum Mechanics.** (3) II.

Mr. Kinsey

260. Seminar in Physics.**Advanced Quantum Mechanics.** (3) I.

Mr. Kinsey

Section 1: **Acoustics.** (3) II.

Mr. Knudsen

Section 2: **Nuclear Structure.** (3) II.

Mr. Richardson

290A-290B. Research. (1-6; 1-6) Yr.

Mr. Kinsey in charge

* Not to be given, 1946-1947.

PLANT PATHOLOGY

A Division of the Department of Agriculture

KENNETH F. BAKER, Ph.D., Associate Professor of Plant Pathology.**PIERRE A. MILLER, M.S., Associate Professor of Plant Pathology.**

The Major.—The major is offered only on the Berkeley campus. See the PROSPECTUS OF THE COLLEGE OF AGRICULTURE and consult the appropriate adviser for students in Agriculture.

Laboratory Fees.—Courses 120, 130, \$2.50.

UPPER DIVISION COURSES**120. Plant Diseases. (4) I.****Mr. Baker**

Lectures, two hours; laboratory, six hours. Prerequisite: Botany 1A-1B or the equivalent, and Bacteriology 1. Fee, \$2.50.

A general fundamental course treating of the nature, cause, and control of plant diseases.

130. Diseases of Subtropical Fruit Plants. (4) I.**Mr. Miller**

Lectures, three hours; laboratory, three hours. Prerequisite: Botany 1A-1B or the equivalent, and Bacteriology 1; course 120 is recommended. Fee, \$2.50.

The pathology of citrus and other subtropical fruit plants. The distribution, economic importance, nature, cause, and control of the principal diseases.

199A-199B. Special Study for Advanced Undergraduates. (2-4; 2-4) Yr.**Mr. Miller, Mr. Baker**

Prerequisite: senior standing and the consent of the instructor.

POLITICAL SCIENCE

CLARENCE A. DYKSTRA, L.H.D., LL.D., Litt.D., Professor of Political Science.

MALBONE W. GRAHAM, Ph.D., Professor of Political Science.

J. A. C. GRANT, Ph.D., Professor of Political Science.

CHARLES G. HAINES, Ph.D., LL.D., Professor of Political Science.

FRANK M. STEWART, Ph.D., Professor of Political Science and Director of the Bureau of Governmental Research.

CHARLES H. TITUS, Ph.D., Professor of Political Science.

WINSTON W. CROUCH, Ph.D., Associate Professor of Political Science.

RUSSELL H. FITZGIBBON, Ph.D., Associate Professor of Political Science.

*DEAN E. MCHENRY, Ph.D., Associate Professor of Political Science.

H. ARTHUR STEINER, Ph.D., Associate Professor of Political Science (Chairman of the Department).

THOMAS P. JENKIN, Ph.D., Assistant Professor of Political Science.

FOSTER H. SHERWOOD, Ph.D., Assistant Professor of Political Science.

JACOB M. HAGOPIAN, Ph.D., Instructor in Political Science.

Letters and Science List.—All undergraduate courses in political science are included in the Letters and Science List of Courses. For regulations governing this list, see page 65.

Preparation for the Major.—Course 3A-3B, or 1 and 2, or 103, or the equivalent, and one of the following: Political Science 10, 15, 31, 32, 34. Recommended: Economics 1A-1B, Geography 1A-1B, History 4A-4B, 5A-5B, 7A-7B, 8A-8B.

Students intending to select political science as a major subject are advised to take two courses in political science in the freshman and at least one course in the sophomore year.

The Major.—Twenty-four units in upper division courses, not more than 4 of which may be taken in courses approved by the department in anthropology, business administration, economics, geography, history, philosophy, psychology, or sociology. The work must be divided among the different fields of political science in accordance with the requirements of the department. A copy of the regulations may be obtained from the departmental adviser. The student must maintain an average grade of C or higher in upper division courses in political science.

Related Curricula.—For the Curriculum in Public Service and the Curriculum in International Relations, students are referred to pages 68 and 69 of this catalogue.

LOWER DIVISION COURSES

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

Mr. Grant, Mr. Jenkin, Mr. Hagopian, Mr. Sherwood

An introduction to the principles and problems of government with particular emphasis on national government in the United States. This course is designed to fulfill the requirement of American History and Institutions. Students who have credit for American Institutions 101 will receive only one unit of credit for Political Science 1.

* Absent on leave, 1946-1947.

2. Introduction to Government. (3) I, II.

Mr. Crouch, Mr. Jenkin, Mr. Hagopian, Mr. Sherwood

A comparative study of constitutional principles, governmental institutions, and political problems of selected governments abroad. Not open to students who have had Political Science 31.

3B. American Government. (3) I.

Mr. Crouch, Mr. Sherwood

10. The Anglo-American Legal System. (3) II.

Mr. Grant

Prerequisite: sophomore standing.

Evolution of the English common law courts and their legal system, with special emphasis on the contributions made by canon law, the law merchant and equity; the theory of *stare decisis* as illustrated by the evolution of modern rules of negligence.

34. American State and Local Government. (3) I.

Mr. Crouch

Prerequisites: sophomore standing and course 3A-3B or 1-2.

Development of state constitutions, and relations between the state and local rural government, with special reference to California.

UPPER DIVISION COURSES

Prerequisite for all upper division courses: course 3A-3B, or 1 and 2, or 103, or the equivalent, except as indicated below, and upper division standing.

Majors in political science must distribute their upper division work so that they have at least one course in any four of the following groups.

103. Principles of Political Science. (2) I.

Mr. Titus, ———

Prerequisite: any one of the lower division courses, or its equivalent, and the permission of the instructor.

Principles of political organization; the major institutions and practices of government, such as political parties, legislatures, constitutions, etc., and the functions they perform.

Group I.—Political Theory

Prerequisite for all courses in *Group I*: upper division standing only.

110. History of Political Ideas. (3) I.

Mr. Jenkin

An exposition and critical analysis of the ideas of the major political philosophers and schools from Plato to Burke.

112. Modern Political Thought. (3) II.

Mr. Jenkin

An exposition and critical analysis of the ideas of the major schools of thought from Kant to the present day.

113. American Political Theory. (3) II.

Mr. Jenkin

A survey of the development of American ideas concerning political authority from Cotton and Williams to Hoover and Roosevelt.

117. Jurisprudence. (3) I.

Mr. Haines

Development of law and legal systems; comparison of methods and procedure in making and enforcing law in Roman and common law systems; consideration of fundamental legal concepts; contributions and influence of modern schools of legal philosophy in relation to law and government. This course may be counted in either *Group I* or *Group V*.

***118. Nature of the State. (3) II.**

Mr. Jenkin

Prerequisite: course 110 or 112.

An attempt to develop by critical dialectic a coherent theory of the state. Concepts such as sovereignty, law, liberty, rights, equality will be especially emphasized.

Group II.—International Relations

Prerequisite for all courses in *Group II* (except 120, 133): upper division standing only.

120. Colonies in World Politics. (2) II.

Mr. Fitzgibbon

A brief survey of the more important historical imperial systems, followed by a study of colonial governments and the problems of imperialism in the world today.

125. Foreign Relations of the United States. (3) II.

Mr. Graham

A survey of the factors and forces entering into the formation and carrying out of American foreign policy, with special emphasis on contemporary problems.

126. Contemporary Latin-American International Relations. (3) I.

Mr. Fitzgibbon

A study of international relations of the Latin-American countries in recent decades, (a) among themselves, (b) with the United States, (c) with Europe and Asia.

127. International Relations. (3) I.

Mr. Graham

A general survey of the institutions and agencies of international government with major stress on outstanding issues in contemporary diplomacy.

130A-130B. The Foundations of National Power. (3-3) Yr.

Mr. Steiner

A study of the principal elements of power in world politics, of national interests and policies, and of the power potential of the major countries of the world.

133. International Law. (3) I, II.

Mr. Sherwood

A critical analysis of the general principles of the law of nations as demonstrated in the decisions of international and municipal tribunals and in the practices of nations. This course may be counted in either *Group II* or *Group V*.

136. Problems of the Pacific Area. (3) I.

Mr. Steiner

A contemporary survey of the internal problems of China and Japan and of the factors underlying Sino-Japanese conflict; also, a brief summary of the problems of other powers having interests in the Pacific. This course may be counted in either *Group II* or *Group IV*.

138. International Relations of the Far East. (3) II.

Mr. Steiner

A survey of the relations of China and Japan with the Western world and with each other, with an analysis of their conflicting interests.

* Not to be given, 1946-1947.

Group III.—Politics

141. **Politics. (3) I.** Mr. Titus
An analysis of political activities, with emphasis on methods of operating, capturing and creating organizations.
142. **Elections. (2) I.** Mr. Titus
An analysis of the history, rules, procedure, techniques, and politics of the American system of elections.
143. **Legislatures and Legislation. (2) II.** Mr. Titus
The functions of legislatures, the organization and procedure of typical legislative bodies, and the problems and principles of law making.
146. **Public Opinion and Propaganda. (2) I.** Mr. Titus
Prerequisite: upper division standing only.
A study of the nature and the means of formation of public opinion. Public opinion as a factor in popular government and as a control device in the modern state, with special reference to current conditions in American democracy.
148. **Public Relations. (3) II.** Mr. Titus
An analysis of principles, activities, problems, and distinctive types of organizations in the field of public relations.

Group IV.—Comparative Government

150. **The Governments of South America. (3) I.** Mr. Fitzgibbon
A study of the constitutional development, governmental organization and operation, and political practices and attitudes in South American states.
151. **The Governments of Middle America. (3) II.** Mr. Fitzgibbon
A study of constitutional development, governmental organization and operation, and political practices and attitudes in Mexico, Central America, and the Caribbean states.
152. **British Government. (3) II.** Mr. Crouch
The government and politics of the United Kingdom; the British constitution, parliament, parties and elections, foreign policies, administrative problems, and local governments.
- *153. **The British Commonwealth of Nations. (2) II.** Mr. McHenry
The constitutional and political relations of the United Kingdom and dominion governments; the governments of Canada, Australia, New Zealand, Union of South Africa, and Eire.
154. **The Governments of Central Europe. (3) I.** Mr. Graham
An intensive study of the organization of the Danubian Succession States, with special attention to contemporary and political issues, parties, elections, and foreign relations.
155. **The Governments of Eastern Europe. (3) II.** Mr. Graham
An intensive study of the breakdown of the Russian Empire and the constitutional reorganization of the Soviet Union and the states, with special attention to contemporary political issues, parties, elections, and foreign relations.

* Not to be given, 1946-1947.

*Group V.—Public Law***156. Administrative Law. (3) I, II.**

Mr. Haines, Mr. Sherwood

The rights, duties, and liabilities of public officers; relief against administrative action; extraordinary legal remedies; jurisdiction, conclusiveness, and judicial control; legal principles and tendencies in the development of public administration.

157A-157B. Constitutional Law. (3-3) Beginning either semester.

Mr. Grant, Mr. Haines

General principles of constitutional law, federal and state; relations and powers of the federal government and the states; limitations on the federal government and the protection accorded to individual rights under the American constitutional system.

158. Government and Business. (3) I.

Mr. Grant

Governmental activities in the preservation and regulation of competition, with special emphasis upon problems of administration and inter-governmental cooperation; regulation of trades and professions.

*Group VI.—Public Administration***162. Municipal Government. (3) II.**

Mr. Crouch

A comparative study of the modern municipality in the United States and the principal countries of Europe; legal aspects of city government; parties and electoral problems; types of municipal organization, mayor and council, commission, and city manager; problems of metropolitan areas.

163. Municipal Administration. (3) I.

Mr. Crouch

Development of modern concepts and methods of administration in cities; management and control of administrative organization.

181. Principles of Public Administration. (3) I, II.

Mr. Crouch, Mr. Stewart

Development of public administration and its relation to other branches of government; the process of centralization; the process of integration; reorganization of administration; budgets; purchasing; problems of personnel; and types of control of the administration.

***183. Problems in Public Administration. (3) II.**

Mr. Stewart

Problems and techniques of governmental planning, public welfare, and finance administration. Attention will be given to the case method of study.

185. Public Personnel Administration. (3) I.

Mr. Stewart

Evolution of public employment policies; a study of the principles and practices of public service personnel, including recruitment, promotion, morale and discipline, retirement, classification, compensation, unions of employees, organization of the personnel agency, and training for public employment.

187. The Administrative Process. (3) II.

Mr. Sherwood

An analysis of (1) judicial control of the way in which administrative agencies operate, and (2) within these limits, the most effective procedures as demonstrated by experience. This course may be counted in either *Group V* or *Group VI*.

* Not to be given, 1946-1947.

199A-199B. Special Problems in Political Science. (2-2) Yr.

Prerequisite: credit for 6 units of upper division courses in political science, and the special requirements necessary for the field selected for special study. Permission to register for this course is required.

Section 1. Techniques of Legal Research.	Mr. Grant
Section 2. Problems in International Relations.	Mr. Graham
Section 3. Readings in Political Theory.	Mr. Jenkin
Section 4. Methods of Administrative Management.	Mr. Stewart
Section 6. Problems in Politics and Legislation.	Mr. Titus
Section 7. Problems in Latin-American Political Institutions.	Mr. Fitzgibbon
Section 8. Problems of the Pacific Area.	Mr. Steiner

GRADUATE COURSES

*217. Jurisprudence. (3) II.	Mr. Haines
*241. Political Parties and Practical Politics. (3) II.	Mr. Titus
248. Public Relations. (3) II.	Mr. Titus

GRADUATE SEMINARS

250A-250B. Seminar in Latin-American Relations. (2-2) Yr.	Mr. Fitzgibbon
252A-252B. Seminar in Public Law. (2-2) Yr.	Mr. Haines
253A-253B. Seminar in International Relations. (2-2) Yr.	Mr. Steiner
254A-254B. Seminar in Public Administration. (2-2) Yr.	Mr. Stewart
255A-255B. Seminar in Comparative Constitutional Law. (2-2) Yr.	Mr. Grant
256A-256B. Seminar in Comparative Government. (2-2) Yr.	Mr. Graham
257A-257B. Seminar in Political Theory. (2-2) Yr.	Mr. Jenkin
259A-259B. Seminar in Political and Electoral Problems. (2-2) Yr.	Mr. Titus
262A-262B. Seminar in Municipal Government. (2-2) Yr.	Mr. Crouch
298A-298B. Special Study and Research for Master's Candidates. (1-3; 1-3) Yr.	The Staff
299A-299B. Special Study and Research for Ph.D. Candidates. (2-6; 2-6) Yr.	The Staff

AMERICAN INSTITUTIONS

101. American Institutions. (2) I, II. Mr. Fitzgibbon, Mr. Hagopian

This course counts toward satisfaction of the "Requirement of American History and Institutions." (See page 37.) It may not be applied toward the political science major, and is not open to students who have credit for Political Science 3A.

The fundamental nature of the American constitutional system and of the ideals upon which it is based.

* Not to be given, 1946-1947.

BUREAU OF GOVERNMENTAL RESEARCH

The Bureau of Governmental Research was established in 1937 chiefly to perform the three functions of: (1) maintaining a collection of current pamphlets, periodicals, and documents relating to public administration and local governments; (2) providing facilities for upper division and graduate students and members of the faculty to pursue study and research in public administration, local government, and related fields; and (3) conducting studies of governmental functions of particular interest to southern California and cooperating with public officials in solving their administrative problems.

Further information may be obtained by consulting the Director, Mr. Frank M. Stewart, Room 42, Library.

PORTUGUESE

For courses in Portuguese, see under Department of Spanish and Italian.

PSYCHOLOGY

ROY M. DORCUS, Ph.D., Professor of Psychology (Chairman of the Department).

FRANKLIN FEARING, Ph.D., Professor of Psychology.

GRACE M. FERNALD, Ph.D., Professor of Psychology.

KATE GORDON MOORE, Ph.D., Professor of Psychology.

KNIGHT DUNLAP, Ph.D., Professor of Psychology, Emeritus.

JOSEPH A. GENGERELLI, Ph.D., Associate Professor of Psychology.

HOWARD C. GILHOUSEN, Ph.D., Associate Professor of Psychology.

ELLEN B. SULLIVAN, Ph.D., Associate Professor of Psychology.

S. CAROLYN FISHER, Ph.D., Assistant Professor of Psychology.

JOHN P. SEWARD, Ph.D., Assistant Professor of Psychology.

MARION A. WENGER, Ph.D., Assistant Professor of Psychology.

GEORGE F. J. LEHNER, Ph.D., Instructor in Psychology.

LAURENCE A. PETRAN, Mus.M., Ph.D., Associate Professor of Music and University Organist.

HARRY W. CASE, Ph.D., Research Associate in Psychology.

EVELYN GENTRY CALDWELL, Ph.D., Research Associate in Psychology.

Letters and Science List.—All undergraduate courses in psychology are included in the Letters and Science List of Courses. For regulations governing this list, see page 65.

Preparation for the Major.—Required: courses 21 and 22; and a coherent group of courses totaling 16 or more units, chosen with regard to the student's proposed direction of major work in psychology and the ultimate field of application. The list of approvable groups may be obtained from the adviser or from the secretary of the department.

The Major.—Course 105A or 106A, and 15 additional units in upper division psychology; the remaining 6 units may be in upper division courses in psychology, or, subject to the approval of the department, in related courses in other departments.

Requirements for the M.A. degree.—The department follows Plan II (see page 111). The list of topics and alternatives for the Comprehensive Examination may be obtained at the department office.

Requirements for the Ph.D. degree.—Permission to proceed to the written part of the qualifying examinations will be based on: (a) fulfillment of the general University requirements; (b) completion of specified upper division courses in addition to the undergraduate major; (c) departmental approval of the applicant's program, and of his probable qualifications for the making of a competent psychologist; and (d) consideration of the probability of the applicant's securing employment in his chosen field. The department will endorse petitions for candidacy, and request appointment of doctoral committees, only for applicants who have passed with credit the written examinations. Detailed statements of the requirements may be obtained from the chairman of the department.

Laboratory fees.—Courses 105A-105B, 106A-106B, \$3.50 a semester.

LOWER DIVISION COURSES

- 21. Introductory Psychology.** (3) I, II. Mr. Gilhousen in charge
 Consideration of facts and principles pertaining to the topics of perception, imagination, thought, feeling and emotion, leading to the problems of experimental psychology, and the topics of intelligence and personality.
- 22. Elementary Physiological Psychology.** (3) I, II. Mr. Wenger in charge
 Prerequisite: course 21 or course 1A taken in previous years.
 Study of the integrative relations of psychological processes to nervous, muscular and glandular features of the response mechanism; including the structure and functions of the sense organs.
- 23. Personal and Social Adjustment.** (3) I, II. Mr. Dorcus in charge
 Prerequisite: course 21 or course 1A taken in previous years.
 Orientation in the practical use of psychological principles in problems and circumstances encountered in college and later life.

UPPER DIVISION COURSES

Courses 21 and 22 are normally prerequisite to all upper division courses. Exceptions to the requirement are made only for courses for which the exceptions are specifically stated.

- 101. Principles of Psychology.** (3) I, II. Mr. Gengerelli, Mrs. Moore
 Open to upper division students who do not have credit for courses 21 and 22. May be offered in substitution for courses 21 and 22 as the prerequisite to further upper division courses.
 A critical discussion of the basic topics in psychology. Elementary details, including essential information concerning nervous, muscular, and glandular mechanisms will be covered by examinations based on readings.
- 105A. Mental Measurements.** (3) I, II. Miss Sullivan
 Prerequisite: course 23 may be accepted in place of course 22. Fee, \$3.50.
 A study of the construction, techniques of application, and interpretation of tests and scales. Practice in statistical procedures applicable to data derived from tests.
- 105B. Mental Measurements.** (3) I, II. Miss Sullivan
 Prerequisite: course 105A. Fee, \$3.50.
 Continuation of the study of principles of measurement, with practice in the construction, administration, and scoring of standardized tests and scales, and their diagnostic interpretation.
- 106A-106B. Experimental Psychology.** (3-3) Yr. Mr. Lehner
 Lectures and demonstration, two hours; laboratory, two hours; assigned readings. Fee, \$3.50 a semester.
 Methods, techniques, and typical results in experimental research in psychology.
- 107. Advanced Psychometric Methods.** (3) II. Mr. Gengerelli
 Prerequisite: course 105B; recommended, Mathematics 3B or 7. The application of higher statistical methods to psychological data.
- 108. Physiological Psychology.** (3) I. Mr. Fearing
 If not to be counted toward the major in psychology, this course may be substituted for course 11 as prerequisite to further upper division courses.
 Integrative activities, consciousness, intelligent behavior, receptor and effector processes in relation to neuromuscular structure and function. Facts, problems and methods.

110. **Educational Psychology.** (3) I, II. Mr. Wenger
Adolescence, maturation, habit formation, formal and informal training.
112. **Child Psychology.** (3) I, II. Miss Fernald
The psychology of the infant and child, with special reference to mental development.
113. **Psychology of Adolescence.** (2) II. Mr. Wenger
A study of methods and findings on adolescent growth, development, and behavior. This course will present the phase of development following Child Psychology and will show the interrelationship between the earlier phases of life and adult life.
124. **History of Psychology, Early Modern Period.** (2) I. Mr. Fearing
The development of psychological theories from Descartes to Helmholtz.
125. **History of Psychology, Second Modern Period.** (2) II. _____
Psychological theories and research from Wundt to the end of the nineteenth century.
126. **Contemporary Psychology.** (2) I. Miss Fisher
The variant tendencies in current psychology, including critical examination of the more important so-called "schools" of psychology.
127. **English Psychology from Hobbes to Bain.** (2) II. Mrs. Moore
131. **Sensation and Perception.** (2) II. Miss Fisher
Intensive study of sense perception, with reference to the structure and functions of sense mechanisms, and experimental findings.
134. **Motivation.** (2) II. Mr. Gilhousen
Theories and experimentally determined facts concerning drives, needs, preferences, and desires.
135. **Imagination and Thought.** (2) I. Mrs. Moore
Imagination, memory, anticipatory and constructive thinking.
- 137A-137B. **Human Learning.** (2-2) Yr. Mr. Wenger
Prerequisite: course 110.
A study of experimental methods and results, with consideration of leading theories.
138. **Feeling and Emotion.** (3) II. Mr. Gengerelli
The nature and basis of the affective factor in life, with application to problems of personal and social adjustment and development.
- *142. **Human Communication.** (2) I. Mr. Fearing
Prerequisite: courses 145A-145B or 147; or with the consent of the instructor.
Role of communication in human social organization; psychological factors involved in the creation and manipulation of symbols; art, drama, and science as forms of communication. Particular attention will be given to the social and psychological aspects of the mass media of communication, radio, and motion pictures.

* Not to be given, 1946-1947.

- 143. Propaganda and Public Opinion. (2) II.** Mr. Fearing
Prerequisite: courses 145A-145B or 147; or with the consent of the instructor.
Propaganda as a form of communication. The detection, analysis and effects of propaganda. The creation, manipulation, and measurement of public opinion; the relation between public opinion and propaganda; the relation between the mass media of communication and public opinion and propaganda.
- 145A-145B. Social Psychology, General Course. (2-2) Yr.** Miss Fisher
- 147. The Psychological Method in the Social Sciences. (3) II.** Mr. Fearing
If this course is not to be counted toward the major in psychology, course 23 may be accepted as a substitute for the prerequisite of course 22.
Psychological factors in major social problems, including social control, propaganda, group conflict, cultural determination, etc.
- 150A-150B. Animal Psychology. (3-3) Yr.** Mr. Gilhousen
Experimental methods and results in the study of the behavior of the lower animals.
- 163. Clinical Measurement Techniques. (3) II.** Miss Sullivan
Prerequisite: courses 105A-105B, 166A and 168.
Lecture, one hour; laboratory, four hours. Fee to be announced.
Detailed study of tests used in clinical diagnostic study, including the special application of individual and group tests of intelligence, personality, diagnosis, and projective techniques. Emphasis will be placed on discussion, laboratory practice, and field work.
- 166A. Clinical Psychology. (2) I, II.** Miss Fernald
Lectures and demonstration.
A study of clinical problems, including discussion of physical and mental abnormalities and deficiencies.
- 166B. Clinical Psychology. (2) I, II.** Miss Fernald
Lecture, one hour; clinical work, three hours. Prerequisite: courses 105A and 166A, or equivalent preparation approved by the instructor.
Special emphasis is placed on corrective and preventive methods.
- *167. Remedial Techniques in Basic School Subjects. (2).** Miss Fernald
The diagnosis and treatment of reading, spelling, and other school disabilities in children and adults. A discussion of foreign language disability will be included in the course if desired. Clinical demonstration, testing, and training of typical cases.
- 168. Abnormal Psychology. (3) I.** Mr. Dorcus
Prerequisite: recommended: course 108, or Zoölogy 35 or 106. Students may be required, early in the term, to demonstrate an acquaintance with the elementary facts of structure and function of the nervous system.
Disorders of sensation, perception, feeling, and thought; their nature, causation, effects on life, and amelioration.
- 172A-172B. Psychology of Music. (3-3) Yr.** Mr. Petran
A study of the psychological factors and problems in music from the points of view of the listener, performer, and composer.
- 175. Psychology of Religion. (3) I.** Mr. Seward
The place of religion in personal and social life and its historical development in Western cultures. Specific beliefs are considered only in relation to their psychological conditions and effects.

* Not to be given, 1946-1947.

- 177. Psychology and Art. (3) I.** Mrs. Moore
Problems of the appreciation of the materials and ideas of the fine arts, with special reference to the psychological processes of imagination, feeling, and emotion.
- *180. Psychology of Advertising and Selling. (2) II.** Mr. Dorcus
The relative strength of the desires in buying; attention value of form, size, color, and typographical layout and methods of measuring the effectiveness of advertisements; characteristics of salesman.
- 185. Personnel and Industrial Psychology. (3) II.** Mr. Dorcus
The methods of selection and training of employees with reference to the promotion of efficiency and morale. Attention will also be given to environmental factors such as illumination, noise, and temperature in so far as these factors affect production.
- 199. Special Problems in Psychology. (3) I, II.** The Staff
Prerequisite: courses 105A, 106A, and 6 other units in upper division psychology. Specific permission to enroll is necessary.

GRADUATE COURSES

- 211A-211B. Comparative Psychology. (2-2) Yr.** Mr. Gilhousen
A comparative study of experimental results on man and the lower animals.
- *215A-215B. Commercial and Industrial Psychology. (2-2) Yr.** Mr. Dorcus.
Selection and training of employees; factors influencing efficiency of work.
- 216. Critical Problems in Psychology. (2) II.** _____
Some critical problems in the field of psychology will be discussed, depending on the interests of the instructor and the class.
- *217A-217B. Clinical Psychology. (2-2) Yr.** Miss Fernald
The prevention of psychological disorders of childhood and adolescence, and their remedy.
- *218A-218B. Propaganda, Public Opinion and Morale. (2-2) Yr.** Mr. Fearing
Particular attention is given to the psychology of pressure groups, psychological factors underlying democracy and fascism, and the problems and methods in the fields of propaganda analysis, public opinion, and morale.
- *221. Experimental Psychology. (3) II.** Mr. Dorcus
Methods, techniques, and apparatus applicable to research problems of various types. Attention will be given to sources of error, difficulties in operation, and limitations on interpretations.
- 252A-252B. Seminar in Mental Measurements. (3-3) Yr.** Miss Sullivan
- 253A-253B. Seminar in Physiological Psychology. (3-3) Yr.** Mr. Fearing
- *255A-255B. Seminar in Social Psychology. (3-3) Yr.** Mr. Fearing
- 256A-256B. Seminar in Aesthetics. (3-3) Yr.** Mrs. Moore
- *258A-258B. Seminar in Abnormal Psychology. (3-3) Yr.** Mr. Dorcus
- 278A-278B. Research in Psychology. (3-6; 3-6) Yr.** The Staff

* Not to be given, 1946-1947.

PUBLIC HEALTH

NORMAN B. NELSON, M.D., Dr.P.H., Associate Professor of Public Health
(Chairman of the Department).

PHOEBE STANDART, A.B., M.P.H., Associate in Biometry.

HUGH DIERKER, M.D., M.P.H., Lecturer in Public Health.

Preparation for the Major.—Bacteriology 1, Chemistry 1A, 1B, 6A, 8, Zoölogy 1A, or 18, or 15, Psychology 21 and 22 or 23, and a year sequence in social science.

The Major.—Students interested in pursuing work toward the Bachelor of Science degree in the School of Public Health should consult the Chairman of the Department.

UPPER DIVISION COURSES

101A. Public Health and Preventive Medicine. (3) I.

Prerequisite: Bacteriology 1 or Zoölogy 1A or 18 or 15; or, for students in the Public Health Nursing Curriculum or School of Public Health, the consent of the instructor.

Beginnings and backgrounds of medicine. Nature of infection and immunity. Discussion of the most important communicable diseases with special emphasis on their control and prevention.

101B. Public Health and Preventive Medicine. (3) II.

Prerequisite: Bacteriology 1 or Zoölogy 1A or 18 or 15; or, for students in the Public Health Nursing Curriculum or School of Public Health, the consent of the instructor.

Development, organization and administration of public health; social trends of medicine; collection and interpretation of vital statistics; environmental sanitation; principles of epidemiology with some special control programs such as tuberculosis, venereal disease, mental hygiene, degenerative diseases.

105. Public Health Administration. (3) II.

Mr. Nelson

Prerequisite: Public Health 101A, or consent of the instructor.

Lectures, reading, and individual reports in public health administration and procedures.

111. Environmental Sanitation. (2) I.

Problems of housing, heating, ventilation, lighting; water supply, waste disposal, insect and rodent control, and control of milk and other food supplies.

112. Introduction to Industrial Hygiene. (2) I.

Mr. Dierker

The scope, organization, and operation of industrial hygiene with a discussion of the organization, scope, and activities.

121. Child Hygiene. (3) II.

A consideration of conditions pertaining to the health of children from the time of conception to the end of puberty.

- 145. Community Control of Communicable Diseases. (3) I.** Mr. Nelson
The epidemiology and community control of communicable diseases, including tuberculosis and the venereal infections.
- 147A. Epidemiology. (3) II.** Mr. Nelson and Mrs. Standart
(To be given if a sufficient number of students enroll.)
Prerequisites: Bacteriology 103 and Public Health 164A, or consent of instructor.
Methods of collection and analysis of morbidity data; principles of epidemiological investigation.
- 163A. Biometry. (2) I, II.** Mr. Nelson and Mrs. Standart
Open only to students who have completed at least 8 units of laboratory courses in the biological sciences. Students who have completed courses in statistics may enroll only with the consent of the instructor.
Elements of statistical analysis; introduction to the methods of statistical analysis and their applications in the fields of the biological sciences.
- 164A. Public Health Statistics. (3) I.** Mr. Nelson and Mrs. Standart
Open only to students who have completed Public Health 101A, or who have the consent of the instructor.
An introduction to the collection, tabulation, and the use of population data and vital statistics.
- 199. Special Study for Advanced Undergraduates. (1-5) I, II.**
The Staff (Mr. Nelson in charge)

GRADUATE COURSE

- 299. Special Study for Graduate Students. (2 or 4) I, II.**
The Staff (Mr. Nelson in charge)

SCANDINAVIAN LANGUAGES

For courses in Scandinavian languages see under Department of Germanic Languages.

SOCIOLOGY

For courses in sociology, see under Department of Anthropology and Sociology.

SOIL SCIENCE

Administered by the Division of Irrigation and Soils (see page 229).

The Major.—The Major is offered only on the Berkeley campus. See the PROSPECTUS OF THE COLLEGE OF AGRICULTURE and consult the appropriate adviser for students in Agriculture.

UPPER DIVISION COURSES

110A. The Soil as a Medium for Plant Growth. (3) II. Mr. Appleman
Lectures, three hours. Prerequisite: Chemistry 1A-1B, 8.

Nutritional requirements of plants; studies of the absorption of mineral elements by plants, and related processes; chemical composition of soils; current views of the soil solution and of base exchange; factors determining productivity of soils; soil and plant interrelations.

126. Development and Characteristics of Soils. (3) I. Mr. Huberty
Three lectures. Prerequisite: introductory college chemistry and physics; geology recommended.

An introduction to the origin, classification, and utilization of soils and to their physical and chemical properties.

199A-199B. Special Study for Advanced Undergraduates. (2-4; 2-4) Yr.
Mr. Huberty, Mr. Appleman, Mr. Pillsbury

SPANISH AND ITALIAN*

CÉSAR BARJA, Doctor en Derecho, Professor of Spanish.

MANUEL PEDRO GONZÁLEZ, Ph.D., Professor of Spanish-American Literature.

ERNEST H. TEMPLIN, Ph.D., Professor of Spanish.

MARION ALBERT ZEITLIN, Ph.D., Professor of Spanish (Chairman of the Department).

LAURENCE DEANE BAILIFF, Ph.D., Associate Professor of Spanish.

HERMENEGILDO CORBATÓ, Ph.D., Associate Professor of Spanish.

JOHN A. CROW, Ph.D., Associate Professor of Spanish.

ANNA KRAUSE, Ph.D., Assistant Professor of Spanish.

MARIA L. DE LOWTHER, M.A., Assistant Professor of Spanish.

JOHN T. REID, Ph.D., Assistant Professor of Spanish.

CHARLES SPERONI, Ph.D., Assistant Professor of Italian.

MANUEL OLGUIN, Ph.D., Instructor in Spanish.

LEONOR DE MONTAU, A.B., Associate in Spanish.

SYLVIA N. RYAN, M.A., Associate in Spanish.

VIRGINIA G. BAÑOS, Ph.D., Lecturer in Spanish.

Letters and Science List.—All undergraduate courses in Italian, Portuguese, and Spanish except Spanish 10 are included in the Letters and Science List of Courses. For regulations governing this list, see page 65.

Preparation for the Major.—(1) Courses 1, 2, 9 (or 3 and 4), 20 or 25A-25B, and 42A-42B, or the equivalent to be tested by examination. Students who wish to make Spanish their major subject must have maintained at least an average grade of C in the college courses in Spanish taken prior to admission to the upper division. (2) English 1A-1B. (3) A minimum of two years of a second foreign language in high school, or of two semesters at the college level, or English 36A-36B, or History 8A-8B. This requirement must be met before entering upon the senior year.

The Major.—Required: 24 units of upper division courses, including 101A-101B (may be omitted if 20 or 25A-25B have been passed with a grade of A or B), 102A-102B, and 116A-116B. The remaining units may be completed from courses 103, 104, 106, 110, 114, 115, 124, 134, and Portuguese 101B, and may include not more than 4 units of upper division work in French, Italian, or Latin literature, in folklore, or in general philology and linguistics. Students who desire to specialize in the Spanish-American field may complete the major requirement by choosing the elective units from courses 104, 114, 124, and 134.

Students who fail to maintain at least an average grade of C in the Spanish courses taken in the upper division will, upon approval of the Dean of the College of Letters and Science, be excluded from the major in Spanish.

The department recommends as a supplementary choice among the free electives: (1) history of the country or countries most intimately connected with the major; (2) additional study in English literature; (3) French, German, Greek, Italian, Latin, and Portuguese language and literature; (4) the history of philosophy.

* The University of California at Los Angeles does not offer a major in Italian. Students wishing to satisfy the requirement for a major in Italian are referred to the GENERAL CATALOGUE, DEPARTMENTS AT BERKELEY.

Two years of high school Latin, or the equivalent, are prerequisite to candidacy for the master's degree in Spanish.

SPANISH

LOWER DIVISION COURSES

The prerequisites for the various lower division courses are given in each case. Students who have had special advantages in preparation may upon examination or recommendation of the instructor be permitted to take a more advanced course than indicated.

1. **Elementary Spanish.** (4) I, II. Mrs. Lowther in charge
This course corresponds to the first two years of high school Spanish.
 2. **Elementary Spanish.** (4) I, II. Mrs. Lowther in charge
Prerequisite: course 1 or two years of high school Spanish.
 3. **Intermediate Spanish.** (4) I, II. Miss Krause in charge
Prerequisite: course 2 or three years of high school Spanish.
 4. **Intermediate Spanish.** (4) I, II. Miss Krause in charge
Prerequisite: course 3 or four years of high school Spanish.
- 8A-8B-8C-8D. Spanish Conversation.** (1 unit each semester) Beginning each semester. Mr. Corbató in charge
The class meets two hours weekly. Open to students who have completed course 3 or its equivalent. Those with grade A or B in course 2 may be admitted.
9. **Intermediate Spanish.** (5) I, II. Miss Ryan
Prerequisite: course 2 or three years of high school Spanish. Primarily for students whose major interest is Spanish.
 10. **Commercial Spanish.** (4) I, II. Mr. González
Prerequisite: course 3 or four years of high school Spanish. Required of all majors in business administration who elect Spanish to fulfill their language requirement. Not on the Letters and Science List of Courses.
 20. **Grammar Review.** (5) I, II. Miss Ryan
Prerequisite: same as for course 25A-25B.
- 25A-25B. Advanced Spanish.** (3-3) Beginning either semester. Mr. Corbató, Miss Krause
For lower division students who have had course 4 or the equivalent. Designed especially for freshmen and sophomores who propose to make Spanish their major subject.
- ***42A-42B. Spanish Civilization.** (2-2) Yr. Mr. Barja
Prerequisite: sophomore standing. Lectures are in English, reading in Spanish or English. Required of major students in Spanish.
A study of the growth and development of Spanish culture in the various fields.

* 42A to be given fall semester; 42B to be given both fall and spring semesters, 1946-1947.

UPPER DIVISION COURSES

Prerequisite: 16 units of lower division Spanish or the equivalent.

Junior Courses: Courses 101A-101B and 102A-102B.

Junior and Senior Courses: Courses 103A-103B, 104A-104B, 106.

Senior Courses: Courses 110A-110B, 114, 115A-115B, 116A-116B, 124, and 134.

101A-101B. **Oral and Written Composition.** (3-3) Yr. Beginning either semester. Mr. Crow, Miss Krause

102A-102B. **Survey of Spanish Literature to 1700.** (3-3) Beginning either semester. Mr. Corbató, Mr. Templin
Prerequisite: course 42A-42B. Required of major students in Spanish.

103A-103B. **Nineteenth-Century Spanish Literature.** (3-3) Yr. Mr. Bailiff
Course 103A not open to students who completed courses 108A or 109B before July, 1945; course 103B not open to those who completed course 108B before that date.

104A-104B. **Survey of Spanish-American Literature.** (3-3) Yr. Beginning either semester. Mr. Crow, Mr. Reid

106. **Eighteenth-Century Spanish Literature.** (2) II. Mr. Corbató
Not open to students who completed course 109A before July, 1945.

110A-110B. **Contemporary Literature.** (2-2) Yr. Mr. Templin
Reading and discussion of Spanish writers of the twentieth century.

114. **Mexican Literature.** (3) I. Mr. González

*115A-115B. **Readings in Classical Literature.** (2-2) Yr. Mr. Zeitlin
Students planning to take graduate work in Spanish are expected to take this course or offer an equivalent.

116A-116B. **Advanced Composition.** (3-3) Yr. Beginning either semester. Required of Spanish majors. Mrs. Lowther

124. **Argentine Literature.** (3) II. Mr. González

*134. **The Argentine Novel.** (3) II. Mr. González

*134. **Latin-American Civilization.** (3) I. Miss Krause
A synthetic view of the forces, European and indigenous, geographic and social, which have influenced the people and culture of the Hispanic republics and Brazil. Attention will be given to distinctive forms of expression in the field of the arts and their significance for the creation of national cultures.

199A-199B. **Special Studies in Spanish.** (1-3; 1-3) Yr. The Staff
Prerequisites: senior standing, at least ten units of upper division Spanish, and the consent of the instructor in the field selected for special study.

* Not to be given, 1946-1947.

GRADUATE COURSES†

- *201. *Studies in Lyric Poetry.* (2) II. Mr. Bailiff
- 203A-203B. *Realism and Naturalism in the Nineteenth Century.* (2-2) Yr.
Mr. Barja
- *204A-204B. *Spanish-American Literature.* (2-2) Yr. Mr. González
- 205A-205B. *Prose Masterpieces of the Sixteenth and Seventeenth Centuries.*
(2-2) Yr. Mr. Barja
- *208. *Ballads.* (2) II. Mr. Templin
- 209A-209B. *The Drama of the Golden Age.* (2-2) Yr. Mr. Templin
- *210A-210B. *Contemporary Literature.* (2-2) Yr. Mr. Barja
- 212A-212B. *Historical Grammar and Old Spanish Readings.* (2-2) Yr.
Mr. Zeitlin
- 214A-214B. *The Modernista Movement in Spanish America.* (2) I.
Prerequisite: course 104B or 114. Mr. González
- *224. *The Contemporary Mexican Novel.* (2) II. Mr. González
Prerequisite: course 114.
- *234. *The Gaucho Epic.* (2) I. Mr. González
Prerequisite: course 124 or 134. Lectures, outside reading, reports, and intensive reading in class.
240. *The Contemporary Spanish-American Novel.* (2) II. Mr. Crow
- *244. *España en América.* (2) II. Mr. Corbató
- 290A-290B. *Special Study and Research.* (2-6; 2-6) Yr. The Staff

PROFESSIONAL COURSE IN METHOD

370. *The Teaching of Spanish.* (3) I, II. Mrs. Lowther
Required of all candidates for the general secondary credential whose major subject is Spanish. To be taken concurrently with Education 370, or in the last half of the senior year.

ITALIAN

LOWER DIVISION COURSES

1. *Elementary Italian.* (4) I, II. Mr. Speroni
This course corresponds to the first two years of high school Italian.
2. *Elementary Italian.* (4) I, II. Mr. Speroni
Prerequisite: course 1, or two years of high school Italian.
3. *Intermediate Italian.* (4) I. Mr. Speroni
Prerequisite: course 2, or three years of high school Italian.
4. *Intermediate Italian.* (4) II. Mr. Speroni
Prerequisite: course 3, or four years of high school Italian.

* Not to be given, 1946-1947.

† All candidates for the degree of Master of Arts must offer at least two years of high school Latin, or the equivalent.

- 8A-8B. Italian Conversation. (1-1) Yr.** Mr. Speroni
The class meets two hours weekly. Open to students who have completed course 3. Those with grade A or B in course 2 may be admitted.
- *42A-42B. Italian Civilization. (2-2) Yr.** _____
Given in English; not open to students who have taken or are taking course 103A-103B.

UPPER DIVISION COURSES

Sixteen units of lower division courses in Italian are required for admission to any upper division course. All upper division courses are conducted mainly in Italian.

- *101A-101B. Composition, Oral and Written. (3-3) Yr.** Mr. Speroni
- *103A-103B. Survey of Italian Literature. (3-3) Yr.** Mr. Speroni
- 109A-109B. Dante's Divina Commedia. (3-3) Yr.** Mr. Speroni
Prerequisite: 6 units of upper division Italian, or the equivalent.
- 199A-199B. Special Studies in Italian. (1-3; 1-3) Yr.** Mr. Speroni

PORTUGUESE

LOWER DIVISION COURSES

- 1. Elementary Portuguese. (4) I.** Mr. Zeitlin
This course corresponds to the first two years of high school Portuguese.
- 2. Elementary Portuguese. (4) II.** Mr. Zeitlin
Prerequisite: course 1 or two years of high school Portuguese.

UPPER DIVISION COURSE

- 101A-101B. Grammar, Composition, and Reading of Texts. (3-3) Yr.** Mr. Zeitlin
Prerequisite: course 2.
- 199A-199B. Special Studies in Portuguese. (1-3; 1-3) Yr.** Mr. Zeitlin
Prerequisite: 10 units of Portuguese, or the equivalent, and the consent of the instructor.

RELATED COURSES (See page 194)

Romance Languages and Literatures

- 201A-201B. French Historical Grammar and Methodology of Romance Linguistics. (2-2) Yr.** _____
- *203A-203B. Old Provençal: Reading of Texts. (2-2) Yr.** Mr. Templin
- *235. Romance Versification. (2) I.** Mr. Bailiff
- *252. Methodology of Romance Philology. (2) II.** Mr. Zeitlin

* Not to be given, 1946-1947.

SUBJECT A: ENGLISH COMPOSITION

CARL SAWYER DOWNES, Ph.D., Assistant Professor of English, Chairman,
Committee on Subject A.

JAMES K. LOWERS, M.A., Supervisor of Instruction in Subject A.

ELLA O. HUTCHINS, M.A., Associate in Subject A.

WILLIAM B. HOLTHERR, B.A., Associate in Subject A.

Subject A. (No credit) I, II.

The Staff

Fee, \$10.

Three hours weekly for one semester. Although this course yields no credit, it displaces 2 units on the student's program. Every student who does not pass the examination in Subject A is required to take, in the semester immediately following this failure, the course in Subject A. Sections are limited to thirty students. For further details, see page 36.

Training in correct writing, including drill in sentence and paragraph construction, diction, punctuation, grammar, and spelling. Weekly compositions and written tests on the text.

ZOÖLOGY

- BENNET M. ALLEN, Ph.D., Professor of Zoölogy.
 ALBERT W. BELLAMY, Ph.D., Professor of Zoölogy (Chairman of the Department).
 LOYE HOLMES MILLER, Ph.D., Professor of Biology, Emeritus.
 GORDON H. BALL, Ph.D., Associate Professor of Zoölogy.
 RAYMOND B. COWLES, Ph.D., Associate Professor of Zoölogy.
 FREDERICK CRESCITELLI, Ph.D., Associate Professor of Zoölogy.
 BORIS KRICHESKY, Ph.D., Associate Professor of Zoölogy.
 EDGAR L. LAZIER, Ph.D., Associate Professor of Zoölogy.
 A. MANDEL SCHECHTMAN, Ph.D., Associate Professor of Zoölogy.
 SARAH ROGERS ATSAIT, Ph.D., Assistant Professor of Zoölogy.
 THEODORE H. BULLOCK, Ph.D., Assistant Professor of Zoölogy.

-
- GRETCHEN L. BURLISON, M.A., Lecturer in Microscopic Technique.
 ELLY M. JACOBSEN, Ph.D., Research Associate in Zoölogy.
 HERBERT S. JENNINGS, Ph.D., Research Associate in Zoölogy.
 ISAAC JONES, M.D., Research Associate in Zoölogy.
 H. S. PENN, M.D., Research Associate in Zoölogy.
 MARION L. QUEAL, Ph.D., Research Associate in Zoölogy.
 ADRIAN VAN ROSSEM, A.B., Curator of the Dickey Collection.

Letters and Science List.—All undergraduate courses in this department are included in the Letters and Science List of Courses. For regulations governing this list, see page 65.

Preparation for the Major.—Zoölogy 1A or 2A, 1B, 14, and one year of college chemistry, preferably 1A-1B. French or German are recommended.

The Major.—Eighteen units of upper division work in zoölogy and 6 units of upper division work chosen from zoölogy or from approved *related* courses in anthropology, bacteriology, botany, chemistry, entomology, home economics, mathematics, paleontology, physics, or psychology. Of the 18 upper division units in zoölogy at least 4 units must be taken in each of the three following groups of courses:

Group 1: Courses 101, 101C, 103, 111, 118, 130, 131.

Group 2: Courses 104, 105, 106, 107, 107C, 111C, 111H.

Group 3: Courses 110, 112, 113, 113C, 113D.

Curriculum for Medical Technicians.—For details see this Catalogue, page 69.

Laboratory Fees.—Zoölogy 1A, 1B, \$4; 4, \$6; 14, \$2; 15, \$7; 13, 16, 35, 105, 110, 111C, 131, 133, \$3.50; 107C, \$5; 106, \$8.50; 112, \$2.50; 113C, \$3; 199A, 199B, to be announced.

ZOÖLOGY

LOWER DIVISION COURSES

- 1A. General Zoölogy. (4) I.** Mr. Bullock
Lectures, two hours; laboratory, six hours. Prerequisite: Chemistry 1A or 2A. Fee, \$4.
Principles of animal biology with emphasis on the vertebrates. Offered primarily for zoölogy majors and premedical students.
- 1B. General Zoölogy. (4) II.** _____
Lectures, two hours; laboratory, six hours. Prerequisite: course 1A or 2A, and Chemistry 1B. Fee, \$4.
- 2A. Elementary Zoölogy. (4) II.** Mr. Cowles
Lectures, two hours; laboratory, six hours. High school chemistry is required; Chemistry 1A or 2A recommended. Fee to be announced.
Principles of animal biology with emphasis on field study of local fauna. Offered primarily for non-premedical students, and may be a terminal course in zoölogy.
- 4. Microscopical Technique. (2) I, II.** Mrs. Burleson
Laboratory, six hours. Prerequisite: courses 1B and 14 or the equivalent, or the consent of the instructor. Fee, \$6.
- *13. Elementary Physiology. (3)** Miss Atsatt
Lectures, two hours; laboratory, three hours. Prerequisite: course 1A or 2A and five units of college chemistry. Fee, \$3.50.
- 14. Elementary Vertebrate Embryology. (2) II.** Mr. Schechtman
Lecture, one hour; laboratory, three hours. Prerequisite or concurrent: course 1B or 15. Fee, \$2.
- 15. Elementary Zoölogy and Physiology. (5) I.** Miss Atsatt
Lectures, three hours; laboratory, six hours. Prerequisite: Chemistry 1A or 2A. Fee, \$7. Not open to premedical or zoölogy majors.
- 16. Applied Human Physiology. (2) II.** Miss Atsatt
Lectures, one hour; laboratory, three hours. Prerequisite: course 13 or 15. Fee, \$3.50.
- 35. General Human Anatomy. (3) II.** Miss Atsatt
Lecture, two hours; laboratory, three hours. Prerequisite: course 13 or 15, and sophomore standing. Fee, \$3.50.

UPPER DIVISION COURSES

- 101. General Physiological Biology. (2).** Mr. Crescitelli
Lectures, readings, and demonstrations. Prerequisite: course 1A or 15 or Botany 1A, and Chemistry 8 and 9, or the equivalent.
- 1010. Physiological Biology Laboratory. (2) II.** Mr. Crescitelli
Laboratory, six hours. Prerequisite: course 101. Fee to be announced.
- 103. Experimental Zoölogy (2) II.** Mr. Schechtman
Prerequisite: courses 1A or 14 and 15, or the consent of the instructor.
Principles governing histological and morphological differentiation.

* Not to be given, 1946-1947.

106. **Mammalian Embryology.** (3) I. Mr. Allen
Lecture, one hour; laboratory, six hours. Prerequisite: courses 1B or 15, and 14. Fee, \$3.50.
106. **Comparative Anatomy of the Vertebrates.** (4) II. Mr. Lazier
Lecture, two hours; laboratory, six hours. Prerequisite: courses 1B or 15, and 14. Fee, \$3.50.
107. **Microanatomy.** (2) II. Mr. Krichesky
Prerequisite: courses 1B or 15, and 14.
The structure and activities of the cell, with emphasis on the mammals.
- 107C. **Microanatomy Laboratory.** (2) II. Mr. Krichesky
Prerequisite or concurrent: course 107. Fee, \$5.
110. **Protozoölogy.** (4) I. Mr. Ball
Lectures, two hours; laboratory, six hours. Prerequisite: courses 1A or 2, and 15. Fee, \$3.50.
111. **Parasitology.** (2) I. Mr. Ball
Prerequisite: course 1A, or 15.
- 111C. **Parasitology Laboratory.** (2) I. Mr. Ball
Prerequisite or concurrent: course 111. Fee, \$3.50.
- 111H. **Laboratory Aide Training in Parasitology.** (2) I. Mr. Ball
Prerequisite: course 111C. Fee to be announced.
For persons intending to become laboratory technicians.
112. **Advanced Invertebrate Zoölogy.** (4) II. Mr. Bullock
Lectures, two hours; laboratory and field, six hours. Prerequisite: upper division standing. Fee, \$2.50.
113. **Vertebrate Zoölogy.** (3) I. Mr. Cowles
Prerequisite: upper division standing, or consent of the instructor.
Emphasis upon the habits, distribution, and ecology of the vertebrates of California.
- 113C. **Vertebrate Zoölogy Laboratory.** (2) I. Mr. Cowles
Prerequisite or concurrent: course 113. Fee, \$3.
Ecology, distribution, and taxonomy of the cold-blooded vertebrates.
- *113D. **Vertebrate Zoölogy Laboratory.** (2). Mr. Cowles
Prerequisite or concurrent: course 113.
Ecology, distribution, and taxonomy of the warm-blooded vertebrates.
117. **Zoölogical Theories and Concepts.** (2) II. Mr. Bellamy
Readings, discussions, and lectures. Prerequisite: senior standing.
118. **Endocrinology.** (2) I. Mr. Allen
Prerequisite: courses 1B or 15, and 14.
130. **Genetics.** (2) I. Mr. Bellamy
Lectures and discussions, two hours. Prerequisite: course 1A or 15, or Botany 1A.

* Not to be given, 1946-1947.

131. **Genetics Laboratory. (2) I.** Mr. Bellamy
Laboratory, six hours. Prerequisite or concurrent: course 130. Fee, \$3.50.
132. **Advanced Genetics. (2) II.** Mr. Bellamy
Lectures, two hours; seminar, one hour. Prerequisite: course 131.
133. **Advanced Genetics Laboratory. (2) II.** Mr. Bellamy
Laboratory, six hours. Prerequisite or concurrent: course 132. Fee, \$3.50.
- 199A-199B. **Problems in Zoölogy. (2-2) Yr.** The Staff
Prerequisite: senior standing with such special preparation as the problem may demand. Fee to be announced.

GRADUATE COURSES

250. **Survey of Animal Biology; Seminar. (3) II.** The Staff
- 251A-251B. **Seminars in Ecology.**
Section 1. Warm-blooded Vertebrates. (2-2) Yr. Mr. Cowles
Section 2. Cold-blooded Vertebrates. (2-2) Yr. Mr. Cowles
Section 3. Invertebrates. (2-2) Yr. Mr. Bullock
- 252A-252B. **Seminars in Endocrinology.**
Section 1. Growth and Development. (2-2) Yr. Mr. Allen
Section 2. Physiology of Reproduction. (2-2) Yr. Mr. Krichesky
- 253A-253B. **Seminars in Genetics and Evolution. (2-2) Yr.** Mr. Bellamy
- 254A-254B. **Seminars in Experimental Zoölogy. (2-2) Yr.** Mr. Schechtman
- 255A-255B. **Seminars in Protozoölogy and Parasitology. (2-2) Yr.**
Mr. Ball
- 256A-256B. **Seminar in General Physiology. (2-2) Yr.** Mr. Crescitelli
- 290A-290B. **Research in Zoölogy. (2-6; 2-6) Yr.** The Staff

PALEONTOLOGY

Courses in invertebrate paleontology are offered by the Department of Geology (see page 209).

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