

UNIVERSITY OF CALIFORNIA  
**BULLETIN**

---

***General  
Catalogue***

*Primarily for Students in the*  
**DEPARTMENTS AT LOS ANGELES**

*Fall and Spring Semesters*

**1948-1949**

JULY 1, 1948

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## GENERAL INFORMATION

Letters of inquiry concerning the University of California at Los Angeles should be addressed to the *Registrar, University of California, 405 Hilgard Avenue, Los Angeles 24, California.*

Letters of inquiry concerning the University in general should be addressed to the *Registrar, University of California, Berkeley 4, California.*

For the list of bulletins of information concerning the several colleges and departments, see page 3 of the cover of this Catalogue.

In writing for information please mention the college, department, or study in which you are chiefly interested.



The registered cable address of the University of California at Los Angeles is UCLA.



*All announcements herein are subject to revision. Changes in the list of Officers of Administration and Instruction may be made subsequent to the publication of this Announcement, July 1, 1948.*

UNIVERSITY OF CALIFORNIA

# General Catalogue

*General Information*

*Announcement of Graduate and  
Undergraduate Courses of Instruction*

FALL AND SPRING SEMESTERS

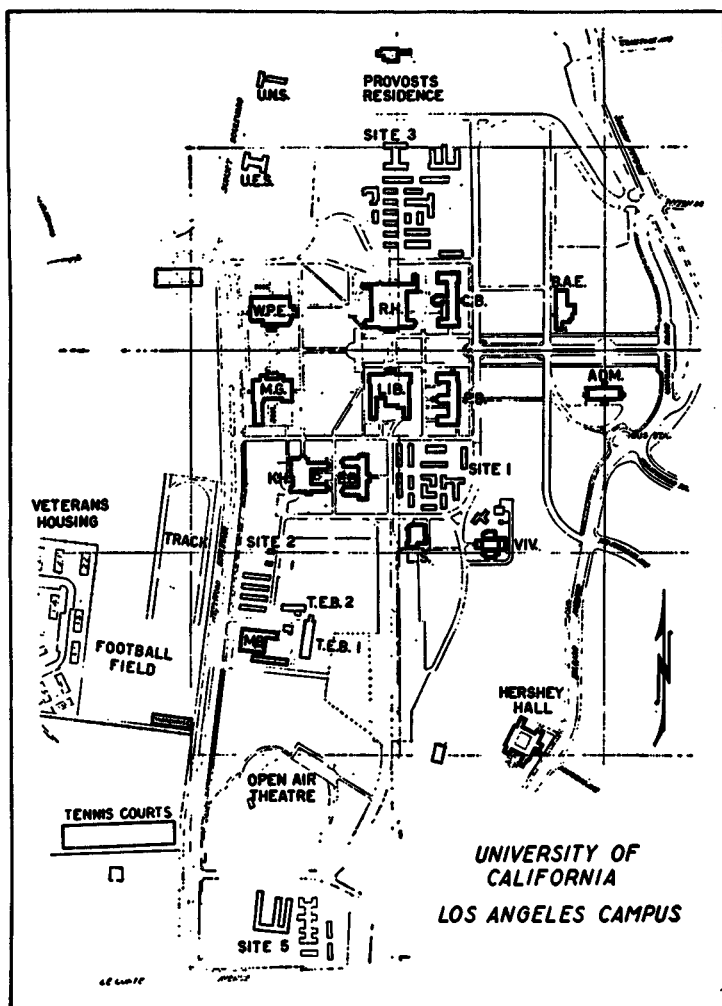
**1948-1949**

JULY 1, 1948

*Primarily for Students in the*  
DEPARTMENTS AT LOS ANGELES

405 HILGARD AVENUE • LOS ANGELES

*Published by the*  
UNIVERSITY OF CALIFORNIA PRESS • BERKELEY AND LOS ANGELES



### UNIVERSITY BUILDINGS

Adm	Administration Building	PB	Physics-Biology Building
CB	Chemistry Building	RH	Josiah Royce Hall
EB	Education Building	TEB	Temporary Engineering Building
KH	Kerckhoff Hall	UES	University Elementary School
Lib	Library	UNS	University Nursery School
LS	Life Science Building	VIV	Vivarium
MB	Mechanics Building	WPE	Women's Physical Education Building
MG	Men's Gymnasium		

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## CALENDAR, 1948-1949

1948

### FALL SEMESTER

*Aug. 16, Monday	Applications for admission to undergraduate or graduate standing in the fall semester, with complete credentials, should be filed on or before this date.
Sept. 1, Wednesday	Last day for filing of applications for readmission by students returning after an absence.
Sept. 6, Monday } Sept. 11, Saturday }	Consultation with advisers by new students. Counseling of all students.
Sept. 8, Wednesday	{ Examination in Subject A. Entrance examination in English for foreign students.
Sept. 13, Monday	Fall semester begins.
Sept. 13, Monday } Sept. 14, Tuesday } Sept. 15, Wednesday }	Registration of all students. For details, see <i>Registration Circular</i> and official bulletin boards.
Sept. 15, Wednesday	Special examination in Subject A.
Sept. 20, Monday	Instruction begins.
Sept. 23, Thursday	Last day to file applications for graduate reading examinations in modern foreign languages.
Sept. 24, Friday	Last day to file registration books or to change study lists <i>without fee</i> .
Oct. 4, Monday	Last day to file applications for advancement to candidacy for the master's degree to be conferred in February, 1949.
Oct. 4, Monday	Last day to add courses to study lists.
Oct. 9, Saturday	Examination in modern foreign languages for candidates for master's or doctor's degrees.
Oct. 23, Saturday	Last day to drop courses from study lists without penalty of grade F (failure).
Oct. 23, Saturday	Last day to file <i>without fee</i> , notice of candidacy for the bachelor's degree to be conferred in February, 1949.
Nov. 13, Saturday	End of mid-term period.
Nov. 25, Thursday	Thanksgiving Day—a holiday.
Dec. 11, Saturday	Last day to file notice of candidacy for the bachelor's degree to be conferred in February, 1949.
Dec. 20, Monday } Jan. 1, Saturday }	Christmas recess.

1949

Jan. 3, Monday	Classes resume.
Jan. 7, Friday	Last day for filing in final form with the committee in charge, theses for the master's degree to be conferred in February, 1949.
Jan. 17, Monday } Jan. 27, Thursday }	Final examinations, fall semester.
Jan. 27, Thursday	Fall semester ends.

\* May 8, Saturday, qualifying examinations for admission to the College of Engineering in the fall semester, 1948.



# CALENDAR, 1948-1949

1949

## SPRING SEMESTER

Jan. 15, Saturday	Applications for admission to undergraduate or graduate standing in the spring semester, with complete credentials, should be filed on or before this date.
Jan. 26, Wednesday	Last day for filing of applications for readmission by students returning after an absence.
Jan. 31, Monday	Consultation with advisers by new students. Counseling of all students.
Feb. 4, Friday	
Feb. 2, Wednesday	{ Examination in Subject A. Entrance examination in English for foreign students.
Feb. 7, Monday	Spring semester begins.
Feb. 7, Monday	Registration of all students. For details, see <i>Registration Circular</i> and official bulletin boards.
Feb. 8, Tuesday	
Feb. 9, Wednesday	
Feb. 9, Wednesday	Special examination in Subject A.
Feb. 14, Monday	Instruction begins.
Feb. 18, Friday	Last day to file registration books or to change study lists <i>without fee</i> .
Feb. 21, Monday	Last day to file applications for fellowships and graduate scholarships tenable at Los Angeles for 1949-1950.
Feb. 22, Tuesday	Washington's Birthday—a holiday.
Feb. 24, Thursday	Last day to file applications for graduate reading examinations in modern foreign languages.
Feb. 28, Monday	Last day to add courses to study lists.
Mar. 7, Monday	Last day to file applications for advancement to candidacy for the master's degree to be conferred in June or in September, 1949.
Mar. 12, Saturday	Examination in modern foreign languages for candidates for master's or doctor's degrees.
Mar. 19, Saturday	Last day to drop courses from study lists without penalty of grade F (failure).
Mar. 26, Saturday	Last day to file <i>without fee</i> , notice of candidacy for the bachelor's degree to be conferred in June, 1949.
Mar. 31, Thursday	Last day to file applications for undergraduate scholarships for the academic year 1949-1950.
Mar. 31, Thursday	Last day to file applications for Alumni Association scholarships.
April 9, Saturday	End of mid-term period.
April 25, Monday	Spring recess.
April 30, Saturday	
May 14, Saturday	Last day to file notice of candidacy for the bachelor's degree to be conferred in June, 1949.
May 16, Monday	Last day for filing with the committee in charge, theses for the master's degree to be conferred in June, 1949.
May 30, Monday	Memorial Day—a holiday.
June 6, Monday	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, 1949.
June 6, Monday	Final examinations, spring semester.
June 16, Thursday	
June 16, Thursday	Spring semester ends.

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President of the University  
208 Administration bldg, Los Angeles 24  
250 Administration bldg, Berkeley 4

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# THE UNIVERSITY OF CALIFORNIA

**NOTE.**—General information about instruction at Berkeley and Davis may be obtained by addressing the Registrar, University of California, Berkeley 4; for information about instruction at Los Angeles, address the Registrar, University of California, Los Angeles 24; for information about instruction at Santa Barbara College, address the Registrar, University of California, Santa Barbara College, Santa Barbara; information concerning the schools and colleges in San Francisco may be obtained by addressing the deans in charge.

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311 Administration bldg, Berkeley 4  
Ira F. Smith, *Assistant Comptroller and Business Manager*  
College of Agriculture, Davis  
W. D. Drew, *Business Manager*  
Citrus Experiment Station, Riverside  
J. A. D. Muncy, *Business Manager*  
Santa Barbara College, Santa Barbara  
William B. Hall, *Assistant Superintendent and Business Manager*  
105 University Hospital, San Francisco  
Kenneth M. Eastman, *Assistant Superintendent and Business Manager*  
102 University Hospital, San Francisco

## Accounting Officers:

Olof Lundberg, *Chief Accounting Officer*  
401 Administration bldg, Berkeley 4  
Max S. Robinson, *Principal Accountant*  
110 Administration bldg, Los Angeles 24  
Richard C. Cornett, *Senior Accountant*  
100 Quad, Santa Barbara  
E. C. Linsley, *Senior Accountant*  
Medical Center, San Francisco 22  
M. F. Cook, *Senior Accountant*  
College of Agriculture, Davis  
W. D. Drew, *Senior Accountant*  
Citrus Experiment Station, Riverside

## Chief Purchasing Agent:

Lewis G. Baker  
318 Administration bldg, Berkeley 4  
David L. Wilt, *Purchasing Agent*  
5 Administration bldg, Los Angeles 24

## Manager of Insurance and Retirement Systems:

Henry H. Benedict  
311 Administration bldg, Berkeley 4

## Personnel Officers:

Boynton S. Kaiser  
329 Administration bldg, Berkeley 4  
Miss Mildred L. Foreman  
39 Administration bldg, Los Angeles 24  
Miss Ione La Page  
Medical Center, San Francisco 22

## Manager of the University Press:

Samuel T. Farquhar  
University Press, Berkeley 4  
Franklin S. Fearing, *Assistant Manager*  
350 Josiah Royce Hall, Los Angeles 24  
August Frugé, *Assistant Manager*  
University Press, Berkeley 4

**Manager of the Bureau of Guidance and****Placement:**

Lloyd Bernard  
128 Education bldg, Los Angeles 24  
102 Administration bldg, Berkeley 4

**Bureau of Occupations:**

Miss Mildred L. Foreman, *Placement Office Manager*  
85 Administration bldg, Los Angeles 24  
Miss Vera Christie, *Placement Office Manager*  
South Hall Annex, Berkeley 4

**University Physicians:**

Donald S. MacKinnon, *Acting Director, Student Health Service*  
Rose H. Parker, *Senior Staff Physician*  
2 Library, Los Angeles 24  
William G. Donald  
Margaret Zeff, *Senior Physician*  
Ernest V. Cowell Memorial Hospital, Berkeley 4  
Elizabeth Davis, *Director, Student Health Service*  
Medical Center, San Francisco 22  
Wilfred T. Robbins, Jr., *Director of Student Health Service*  
Santa Barbara College, Santa Barbara  
J. Homer Woolsey, *Director and Surgeon, Student Health Service*  
College of Agriculture, Davis

**General Superintendent of Hospitals and Infirmaries:**

University Hospital, Medical Center,  
San Francisco 22

**Buildings and Grounds:**

E. A. Hugill, *Chief Superintendent of Grounds and Buildings*  
Laurence H. Sweeney, *Principal Superintendent*  
100 Mechanics bldg, Los Angeles 24  
John W. Aljeta, *Principal Superintendent*  
Grounds and Buildings, Berkeley 4  
William H. Dufton, *Principal Superintendent*  
Medical Center, San Francisco 22  
Austin Walther, *Grounds and Buildings Superintendent*  
College of Agriculture, Davis  
C. I. Johnson, *Grounds and Buildings Foreman*  
Scripps Institution of Oceanography, La Jolla  
J. H. Noren, *Grounds and Buildings Foreman*  
Lick Observatory, Mount Hamilton  
Henry U. Meyer, *Grounds and Buildings Senior General Mechanic*  
Citrus Experiment Station, Riverside  
William F. Madden, *Senior Superintendent of Grounds and Buildings*  
Santa Barbara College, Santa Barbara

**Foreign Student Advisers:**

Clifford H. Prator  
202 Administration bldg, Los Angeles 24  
Allen C. Blaisdell  
International House, Berkeley 4

**VETERANS AFFAIRS****University Administrative Officers of Veterans Affairs:**

Robert W. Webb, *University Coordinator*  
319 Chemistry bldg, Los Angeles 24  
Byron H. Atkinson, *Campus Coordinator*  
321 Administration bldg, Los Angeles 24  
James G. Siler, *Campus Coordinator*  
Office bldg F, Berkeley 4  
C. Douglas Woodhouse, *Campus Coordinator*  
111 Administration bldg, Santa Barbara  
Troy C. Daniels, *Campus Coordinator*  
Medical Center, San Francisco 22  
J. Price Gittinger, *Campus Coordinator*  
206 Library-Administration bldg, Davis  
Boyd B. Rakestraw, *General Extension Coordinator*  
University Extension bldg, Berkeley 4  
Edythe G. Hutchins, *Extension Coordinator, Northern Area*  
University Extension bldg, Berkeley 4  
John Caton, *Extension Coordinator, Southern Area*  
Temporary Extension bldg, Los Angeles 24  
C. A. Lewis, *Extension Coordinator, San Diego Area*  
321 Scripps bldg, San Diego 1

Florence Harrison, *Extension Coordinator, Santa Barbara Area*  
906 Santa Barbara st, Santa Barbara

**United States Veterans Administration Representatives:**

Nell D. McKain, *Chief Training Officer*  
Joseph J. Henry, *Training Officer*  
115 Building 1L, Los Angeles 24  
Ralph A. Proctor, *Senior Training Officer*  
Don F. Marrs, *Training Officer*  
142 Men's Gymnasium, Los Angeles 24  
Ralph E. Early, *Training Officer*  
115 Library-Administration bldg  
College of Agriculture, Davis  
Ralph Witasek, *Acting Training Officer*  
Russell Erikson, *Assistant Training Officer*  
Balboa bldg, Santa Barbara

**Veterans Counseling Centers (University Extension):**

Llewellyn N. Wiley, *Manager*  
815 S Hill st, Los Angeles 15  
Barbara A. Kirchheimer, *Manager*  
Office bldg C, Berkeley 4  
Jerry H. Clark, *Manager*  
785 State st, Santa Barbara

# 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 Art Gallery.

The University of California Press.

## The Colleges of

Letters and Science,  
Business Administration,  
Engineering,  
Applied Arts,

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

## The Schools of

Education,  
Medicine,  
Public Health (in part).

The Graduate Division (Southern Section).

The Bureau of Governmental Research.

The Institute of Industrial Relations.

The Senator William Andrews Clark Memorial Library.

The 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 Septem-

ber, 1933, one hundred fifty candidates were admitted to work in the following 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. Since then nearly all of the remaining major fields have been opened both for the master's degree and for secondary credentials. 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, geography, geology, Germanic languages, meteorology, microbiology, music, 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 15 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; (e) the College of Agriculture, with curricula leading to the degree of Bachelor of Science; and (f) the School of Public Health, 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, Master of Arts, and Master of Business Administration, 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 Library of the University of California at Los Angeles contains nearly 550,000 volumes as well as current periodicals to the number of approximately 9,000. A Student Handbook to the Library is available without charge upon request to the Librarian.

During regular sessions 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. Between semesters and at the Christmas recess evening and Sunday hours are suspended.

All graduate students have access to the bookstacks where a limited number of cubicles are available. Application for the use of these cubicles should be made to the Head of the Circulation Department. Facilities are offered for the reading of microfilm. A temporary Graduate Reading Room is located on the third floor.

Special collections in such fields as chemistry, physics, and agriculture are housed in the respective departments and are not available for evening use.

Branch libraries in engineering and industrial relations are temporarily housed in the Main Library. The Bureau of Governmental Research maintains therein a collection of municipal, county, and related materials. An extensive assemblage of orchestral, band, and chamber music is housed in Room 35 of the Library, a catalogue of which is available without charge.

An extension of the main library building is being constructed to provide a Graduate Reading Room, a Periodicals Room, and a Department of Special Collections, including rare books, manuscripts, archives, and maps.

Supplementing the University Library is the William Andrews Clark Memorial Library\* of nearly 40,000 books, pamphlets, and manuscripts, featuring English culture of the 17th, 18th, and 19th centuries, and the history of Montana. 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 giving information about hours and conditions for use of the library 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.<sup>o</sup> 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. Of special interest are courses offered to professional people in the fields of medicine, dentistry, engineering, law, business administration, and industrial relations. Veterans may use the educational benefits available to them under the Federal and State laws to enroll in University Extension courses.

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.

\* 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" bus of the Los Angeles Transit Lines.

<sup>o</sup> For information concerning admission to the University through residence courses in University Extension, see page 26.

(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, University of California, Los Angeles 24, or 813 South Hill Street, Los Angeles 14, or University of California, Berkeley 4.

# 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 a 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. With the application for admission there must be filed a certificate showing successful vaccination against smallpox within the last seven years.

\* 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 or 16 are not required to remit this fee at the time of application; if the applicant is accepted and registers in the University, the fee will be paid by the government.



A form for this purpose will be furnished by the University and must be signed by a licensed physician.

The University of California bases its entrance requirements on two principles: first, that the best guarantee of success in the University is high quality of scholarship in previous work, and second, that the study of certain specified subjects will give to the student both good preparation for the work of the University and reasonable freedom of choice of a major field of study after his entrance. These principles apply to admission in either freshman or advanced standing. Applicants may be admitted to freshman standing on the basis of their high school records only if they have completed no college work. Those who have completed any formal school work since graduation from high school must submit official records of this work. If any of it is evaluated as college work, the applicant's eligibility will be determined under the rules for admission with *advanced standing*. Applicants are not permitted to disregard work subsequent to high school and apply solely on the basis of their high school credentials.

#### ADMISSION IN FRESHMAN STANDING

##### Admission on the Basis of the High School Record

The applicant must file with the Admissions Office a regular application, on or before the last date for the receipt of applications for the semester desired, and must have the secondary schools he has attended send to the Admissions Office complete transcripts of record of all studies undertaken in such schools. The transcripts must show that the applicant has been graduated from an accredited high school. The Admissions Office will then evaluate the high school record, and the applicant will be eligible for admission if he qualifies under any one of the following methods:\*

1. Complete the high school courses listed under (a) to (f) below with marks that demonstrate ability to do university work with good prospect of success. Courses in the (a) to (f) list taken in the ninth grade need show passing marks only; courses in the (a) to (f) list taken in the tenth, eleventh, and twelfth grades must be passed with marks that will make an average of grade B. Courses in which a grade of D is received may not be counted either in reckoning the required scholarship or in satisfaction of the subject requirements. An A grade in one course will balance a C grade in another. Grades are considered on a semester basis, except from schools that give only year marks.

The courses that must be completed under this plan of admission are as indicated beginning at the top of the next page.

\* 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 later pages of this bulletin.

- (a) History ..... 1 unit. —This requirement must be satisfied by one unit of United States history or one unit of 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 "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, physics, physical science, physiology, or zoology. The science selected must be an advanced (third or fourth 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 course chosen from one of the following:
  - 1 (or 2) units.—1. Mathematics, a total of 1 unit (second-year algebra,  $\frac{1}{2}$  or 1 unit; solid geometry,  $\frac{1}{2}$  unit; trigonometry,  $\frac{1}{2}$  unit);
  - 2. Foreign language, either 1 additional unit in the same foreign language offered under (e), or 2 units of a different foreign language;
  - 3. Science, 1 unit of either chemistry or physics in addition to the science offered under (d) above.

2. Achieve a scholarship rank in the highest tenth of his graduating class, with a substantial academic preparation, although he need not complete the exact pattern of subjects (a) to (f) listed above.

3. Complete 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).

4. Complete 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.

5. Complete 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 pass the *Examination in Subject A*; and have 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.

### **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 to the University 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, Berkeley or Los Angeles.

### **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 each course to the University under the proper subject designation of the high school program.

### **Preparation for University Curricula**

In addition to those subjects required for admission to the University, outlined beginning 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. Details of these recommendations will be found in the separate circular, **PREREQUISITES AND RECOMMENDED SUBJECTS**, which may be obtained from the Director of Relations with Schools, University of California, Los Angeles 24.

### **Admission of Returning Members of the Armed Forces**

Some exceptions in the subject requirements for admission will be made for men and women who were for at least one year members of the armed forces of the United States. Such exceptions will apply, however, only when the scholarship record is high enough to indicate probable success in the University. Veterans whose scholastic records are good and whose high school subject deficiencies total not more than three units, are encouraged to make application, even though they may not have all of the usual requirements. A

veteran with a good scholarship record but with subject deficiencies will, under certain circumstances, be classified as a special student until deficiencies are removed, or until all of the requirements for junior standing in the college of his choice have been completed.

Veterans who apply and are not eligible for admission to either regular or special status will, upon request, be given programs of work in University Extension or in junior college designed to prepare them for University work.

### **Removal of Admission Deficiencies**

Deficiencies in high school scholarship or subject requirements may be removed as follows:

1. By college courses of appropriate content and amount completed with satisfactory scholarship in junior colleges, or state colleges of California, or in other approved colleges. The applicant may clear his deficiencies by satisfactory grades in courses acceptable for removing his subject shortages, and present either:

- (a) Sixty units with at least a grade C average in college transfer courses, or
- (b) A minimum of 15 units of college transfer courses with an average of 1.5 grade points. Ordinarily, it is recommended that graduates of California high schools who are not eligible for admission to the University, attend one of the California junior colleges and complete there the lower division requirements of the college in which they wish to register.

2. By college courses in one of the three following divisions of the University of California:

- (a) *University Extension.*—These courses are of three types—correspondence, general adult education classes marked "X," "XB," "XL," or "XSB," and special classes designed to make up entrance deficiencies. There are no restrictions on enrollment in correspondence courses, but only those with 5 units or less of scholarship deficiencies in their high school records are eligible for the special program of class courses designed to make up entrance deficiencies. To be acceptable, marks received in this program must be definitely above the C average, and must serve, not merely as specific make-up of deficiencies, but also as a demonstration of ability to do college work successfully.
- (b) *Combination Program of the College of Agriculture at Davis.*—Courses in the Combination Program of the College of Agriculture at Davis (open only to students who have not more than 3 units of scholarship and/or subject-matter deficiencies). Students cannot remove entrance deficiencies in the Two-Year Curriculum (non-degree course). See PROSPECTUS OF THE COLLEGE OF AGRICULTURE.
- (c) *Summer Session.*—For students with only one or two deficiencies the first summer session of the University may be used to make up shortages. Because of the short time between the end of the second summer session and the fall semester, the second summer session may not be used to make up deficiencies for entrance to the fall semester.

3. By postgraduate courses in accredited high schools.

4. By College Entrance Examination Board Examination (see next paragraph).

### Admission by Examination

The University of California does not itself offer entrance examinations, but accepts on all campuses the results of examinations given by the College Entrance Examination Board. Information about dates and places of examination may be secured from the Admissions Office or from the College Entrance Examination Board, P. O. Box 592, Princeton, New Jersey. Definite arrangements to take the tests must be made with the Board at least four weeks previous to the date of the tests. If the applicant has completed all of the subjects in the (a) to (f) list with grades of C or better, but is deficient in the scholarship average, he may clear his admission requirements by a satisfactory score on the Scholastic Aptitude Test and on three achievement tests in subject fields. If the (a) to (f) list of subjects has not been completed with grades of C or better, the applicant should consult the Admissions Office in regard to the tests he must take.

### ADMISSION IN ADVANCED STANDING

An applicant for admission to the University 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 and that his advanced work in institutions of college level has met the scholarship standard required of transferring students, namely, an average grade of C or higher in all college courses undertaken.

An applicant may not disregard his college record and apply for admission 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 direct to the Director of Admissions. A statement of honorable dismissal from the last college attended must also be sent.

An applicant, who on graduation from high school did not qualify for admission in freshman standing, must present evidence that he has made up all subject deficiencies and, in addition, has completed:

- (a) Not less than 60 semester units of work acceptable for advanced standing in the University, with a scholarship average of at least grade C, or
- (b) Not less than 15 semester units of accepted advanced work with a scholarship average of 1.5 or better.

The student should note that credit toward a degree in the University of California for an extension course or courses completed in an other 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.

*Subject A: English composition.* Credit for Subject A (English Composi-

tion) 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 35).

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

*Credit for experience.* No University credit is given for experience, even though the work may have been closely related to University courses. 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 of grade points. This may be accomplished by work in other approved higher institutions, in Summer Sessions, or in correspondence courses in University Extension. Except for veterans, applicants for advanced standing who have scholarship deficiencies will not be admitted to the admissions program classes of University Extension.

### **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 applicants 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.

\* See special regulations regarding admission of veterans to special status, p. 22.

An applicant will not be admitted directly from high school to the status of special student. 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. 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, but an applicant will not be admitted to special status for the purpose of making up requirements.

#### 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. An applicant's knowledge of English is tested by a special entrance examination in English for foreign students. This regulation applies to both graduate 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.

Special advisers have been appointed by the President of the University to assist foreign students in all matters pertaining to their attendance at the University. Every student from another country is urged, upon his arrival at the University, to consult Dr. Clifford Prator, Assistant Dean of Students and Foreign Student Adviser, Room 202 Administration Building.

### **LIMITATION OF ENROLLMENT IN CERTAIN COLLEGES OR COURSES**

Within the limits of its capacity the University ordinarily makes no restriction on admission of applicants from areas outside of California. For the year 1948-1949, however, it is necessary to restrict enrollment in the College of Engineering in the freshman, sophomore, and junior years to bona fide residents of California. In addition to meeting regular requirements for admission to the University, all applicants for admission to freshman standing in the College of Engineering must pass the freshman status engineering examination; for junior standing, the junior status engineering examination. In the other colleges, there will be no restriction on admission in the junior and senior classes other than the regular requirements for admission to the University, but enrollment in the freshman and sophomore classes will be restricted to bona fide residents of California and to such other applicants as show exceptional promise (the upper half of applicants ordinarily eligible). Out-of-state applicants for freshman or sophomore standing must submit, in addition to scholastic records, a properly certified standing on either the College Entrance Examination Board Scholastic Aptitude Test or the American Council on Education Psychological Examination. There are special limitations concerning nonresidents in certain of the professional schools on other campuses of the University.

### **ADMISSION IN GRADUATE STANDING**

As indicated on page 22, 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, Master of Science, or Master of Business Administration, for the degree of Doctor of Education, or for the degree of Doctor of Philosophy in the fields of chemistry, economics, engineering, English, geography, geology, Germanic languages, history, mathematics, meteorology, microbiology, music, 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 Dean of the Graduate Division not later than August 16, 1948, for the fall semester, and not later than January 15, 1949, 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 846 (G. I. Bill of Rights), or Public Law 16, are not required to remit this fee with their applications; if the applicant is accepted and registers in the University, the fee will be paid by the government.

## **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 15 for the spring semester. Students planning to return after an absence should file applications for readmission not later than September 1 for the fall semester and not later than February 1 for the spring semester.

### **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.

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 Student Health Service 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 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

\* The University requirements in physical education referred to in this section cover Physical Education 1 (Men) and 26 (women), 3-unit courses which are required of students in each semester of the freshman and sophomore years, irrespective of the total number of units of credit received in these courses.

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 in later pages of this bulletin.

### **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.

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, Naval Reserve, Marine Corps, and Marine Corps Reserve and thus assist in meeting a demand for increased commissioned personnel in time of war or national emergency.

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.

Courses in seamanship, communications, ordnance and fire control, advanced fire control, navigation, advanced seamanship, engineering (steam and Diesel), and damage control are given to those students seeking Naval commissions. Courses in military history and principles, small unit tactics and amphibious landings are given during the last three semesters to those students seeking Marine Corps commissions.

Students are enrolled in the Naval Reserve Officers' Training Corps under three categories. These categories are listed below together with the method of selection:

**Regular N.R.O.T.C.**—Students selected after successfully completing a nation-wide Navy college aptitude test. Quotas are set by the Navy Department. The competitive examinations are given at least six months prior to the beginning of the college year in which they will enter.

**Contract N.R.O.T.C.**—Students selected by the Professor of Naval Science after a personal interview. Quotas are set by the Navy Department.

**Naval Science N.R.O.T.C.**—Selected students who have not entered into a contract with the Navy and are pursuing Naval Science courses for college credit only.

### **Army and Air Force Reserve Officers' Training Corps**

In accordance with section 40, National Defense Act of 1920, and with the concurrence of the Regents of the University, a unit of the Senior Division

Reserve Officers' Training Corps was established on the Los Angeles campus of the University in February, 1921.

The purpose of the Reserve Officers' Training Corps is to qualify male students as leaders in peace or in war, to awaken in them an appreciation of the obligations of citizenship, and to qualify selected students as Reserve Officers of the Army and Air Force.

The courses in Military Science are those prescribed by the Departments of the Army and Air Force and are standard in all Reserve Officers' Training Corps college units.

### **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 persons who do not appear at the announced time is given a few days 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 re-

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

Students from other countries whose native language is not English should take the special Examination in English for Foreign Students rather than the Subject A Examination. Students who subsequently complete English 3B, the advanced course in English for foreign students, with a grade of C or higher, will be credited as having met the Subject A requirement.

### AMERICAN HISTORY AND INSTITUTIONS

Candidates for a bachelor's degree or for a certificate in public health nursing, to be awarded in June, 1947, or later, must satisfy the "Requirement in American History and Institutions" through a knowledge of American political institutions and ideals and of American history. Candidates for the said degree or certificate in June, 1949, or later, may satisfy this requirement in any one of the following ways:

1. By passing the optional examinations which the Committee offers in American Institutions and American History. (No unit credit is given for these examinations.)

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2. By completing in the University one course in each of the following groups:

(a) American Institutions: Political Science 1, 3A, 3B, 34, 103, 113, 125, 141, 142, 143, 146, 156, 157A, 157B; American Institutions 101.

(b) American History: History 7A, 7B, 8B, 101, 171, 172, 173, 174, 175, 178, 179, 181.

(The courses listed under (a) and (b) above, when offered in University Extension and in Summer Sessions, may be used to fulfill the requirement. Most upper division students will find it possible to complete the requirement in minimum time by a combination of the two courses, American Institutions 101 and History 101. These two courses may be taken by lower division students only on the recommendation of their colleges.)

3. By passing the optional examination in American Institutions and completing one course in group 2(b) above, or by passing the optional examination in American History and completing one course in group 2(a) above.

4. By presentation of a certificate of (a) completion of acceptable courses at another collegiate institution, or (b) satisfaction of the present requirement as administered in another collegiate institution within the State.

Candidates for the said degree or certificate before June, 1949, may satisfy the requirement by methods 1, 3, and 4 above, or by completing in the University at least four units of work selected from the courses listed under 2 above.

Candidates for a teaching credential, but not for a degree, need take only the optional examination in American Institutions or one of the courses listed under 2(a) above. They cannot satisfy the requirement with courses or examinations taken outside the State of California.

Further information regarding the requirement and the optional examinations may be obtained from the Committee on American History and Institutions. For room number and office hours, see official announcements on campus bulletin boards.

### STUDY-LIST REGULATIONS

At the beginning of each semester every student is required to file with the dean of his college, 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 dean of the student's college. 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.

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 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

\* Special provisions governing residence of degree candidates in the College of Engineering are described in the requirements of that college. See under College of Engineering in later pages of this bulletin.



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, except in the College of Engineering, is limited to a program of 12 units each semester, to which may be added the required  $\frac{1}{2}$ -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 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  $\frac{1}{2}$  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 aggre-

\* 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.

gating 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  $\frac{1}{2}$ -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  $\frac{1}{2}$  unit.

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 performing such exercise or exercises (reëxamination, term paper, laboratory work, etc.) as the instructor may require. For removal of grade E a formal petition, to be obtained in advance from the Registrar, must be presented to the instructor in charge of the course; otherwise he will lack authority to consider and report upon the work submitted by the student. The fee for filing such a petition covering one course is \$2; for two or more courses, \$3. There is no fee for a reëxamination, however, if the final examination is the only task required by the instructor and if this final examination is taken with a succeeding class. Grade E received 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.

In courses of previous Intersessions and Summer Sessions, reëxaminations 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 reëxamination 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, 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.

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 reexamination 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 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 provisions apply to all undergraduate students at Los Angeles except students in the College of Engineering:

(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.

Effective July 1, 1948, the following provisions apply to all students in the College of Engineering:

A student will be subject to dismissal from the University

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

(2) If at the end of any semester he has failed to attain at least a C average in all courses undertaken in the University.

A student who becomes subject to the provisions of this regulation shall be under the supervision of the Faculty of the College. The Faculty, or persons designated by it, shall have the power to dismiss from the University students under its supervision, or to suspend the provisions of this regulation and permit the retention in the University of the students thus subject to dismissal, and the return to the University of students who have been dismissed under this regulation.

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. 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 reexamination for the purpose of raising the grade. Concerning methods of raising nonpassing grades to passing grades, see under Removal of Deficiencies, above.

### HONORABLE DISMISSAL

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 petitioning for honorable dismissal may render themselves ineligible not only for readmission to the University of California but also for admission by transfer to another institution. All grades in courses undertaken in the semester from which a student withdraws without notice become "not passing" (E or F) and remain so upon the student's permanent record.

### 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.

\* This charge is subject to increase, effective July 1, 1948.



## MISCELLANEOUS INFORMATION

### EXPENSES—LIVING ACCOMMODATIONS—EMPLOYMENT— SCHOLARSHIPS—LOANS

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#### 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 52.

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 \$39. 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, for such consultation, medical advice, and dispensary treatment as can be furnished on the campus by the Student Health Service, and for all laboratory and course fees. It also includes the rights and privileges of membership in the Associated Students, valued at \$4; see page 59. 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 eight weeks from the date of his registration, a part of this fee will be refunded. The incidental fee for graduate students is \$35 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 im-

\* During registration 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 Saturdays.

† 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.

portant for each prospective student to note carefully the rules governing legal residence in the University, which are stated on page 49.

*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. Application for a change of classification with respect to some preceding semester will not be received under any circumstances.

\* See dagger (†) footnote on page 47.

### Other Fees

*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 31.

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

*Late filing of registration book, \$2.*

*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, \$5.*

*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 for each 24 hours until full purchase price of article is reached.*

*For failure to empty locker within specified time, \$2.*

*Returned check collection, \$1.*

*Deposit required of applicants for teaching positions who register with the Office of Teacher Placement, 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 five 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.

### 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

† 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; if the applicant is accepted and registers in the University, the fee will be paid by the government.

\* 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.

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 distinguished 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**

Housing for out-of-town women students enrolled in the University is cared for in one of several ways—as paying guests in private homes or with relatives; in Mira Hershey Hall, the only University-operated residence hall for undergraduate women; in one of the privately owned residence halls or coöperatives; or as a resident member of one of the many sororities.

#### *Accommodations with Private Landlords*

The University receives up-to-date information regarding available accommodations in private homes within commuting distance, and a file of such listings is available in the Housing Office, Administration Building, 405 Hilgard Avenue, Los Angeles 24. Arrangements for such rooms cannot be made by mail, but the listings are freely available to any student who desires to call at the Housing Office in person. Rates for rooms average \$30 to \$50 per person per month. A few accommodations in private homes are offered where board and room are provided and current rates average \$65 to \$80 per month, depending upon the location, accommodations and number of meals offered. The University cannot assume any responsibility for arrangements made with private homeowners, and it is recommended that all agreements between the student and owner be in writing.

#### *Mira Hershey Hall*

Mira Hershey Hall, made available by the will of the late Miss Mira Hershey, is the only residence hall operated by the University, and this is located on the campus. Accommodations are available for 129 regular students. Application for residence may be made to the Housing Office during the semester preceding that in which the student plans to enroll, and after the student has been notified by the Admissions Office that her credentials indicate that she will be accepted for enrollment. The rate for board and room is \$292.50 per person per semester during the time the University is in session. Three meals

are served daily with the exception of Sundays and holidays when two meals only are served.

#### *Privately Owned Residence Halls and Coöperatives*

There are a number of privately owned and operated residence halls and coöperatives, most of which are located in the area adjacent to the University. A list of such residences is available at the Housing Office. All business dealings should be clearly understood by both the student and owner, and the University cannot assume any responsibility for arrangements to which it is not a party. It is recommended that all agreements between the student and owner be in writing. Seven residence halls are on the coöperative plan with rates for board and room per month per person varying from \$34 to \$50. Under this plan the students share in the work of operating the hall and work an average of four to five hours a week for part payment of their board and room. Two privately owned residence halls provide room and board at rates of \$60 and \$65 per month. Two halls provide room only at rates from \$23 to \$50 per person per month. Three additional halls have apartments at rates ranging from \$15 to \$30 per month per person depending on the number of women sharing the apartment.

#### *Sororities*

Most of the 22 sororities own or lease houses near the campus and provide lodging and meals for their members and pledges. Monthly bills for residents range from \$47 to \$72 per month, depending on the number of meals served and the social and recreational privileges provided. Students interested in affiliating with a sorority should register for rushing on forms available at the Office of the Dean of Women. Detailed information concerning membership may also be secured at this office.

### PRINCIPAL ITEMS OF EXPENSE ESTIMATED ON A TWO-SEMESTER BASIS

Expense Items	Minimum		Moderate		Liberal	
	Men	Women	Men	Women	Men	Women
Incidental Fee.....	\$ 78	\$ 78	\$ 78	\$ 78	\$ 78	\$ 78
Books and Supplies.....	30	30	45	45	65	65
Board and Room.....	450	585	550	650	650	700
(or Housekeeping).....		(300)		(350)		(500)
Miscellaneous (Recreation, club dues, laundry, drugs, etc.).....	50	80	75	150	200	300
Total.....	\$ 608	\$ 773	\$ 748	\$ 923	\$ 993	\$1143

**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 \$180 per semester.

## LIVING ACCOMMODATIONS AND GENERAL EXPENSES FOR MEN

Most of the men enrolled in the University live at their family homes in the community, and for these men no satisfactory estimate can be made concerning their expenditures for transportation, lunches, laundry, recreation, or other items. Such costs tend to vary greatly according to the taste and circumstances of the individual student.

Living accommodations for out-of-town students are usually arranged for in two ways—as paying guests in private homes and rooming houses or as members of non-profit, student-managed groups. The University itself does not own or operate any dormitory or residence hall for men. Arrangements for rooms must be made by the individual directly with the landlord. Students and landlords are both advised to have a clear understanding, preferably in writing, as to prices, intended length of tenancy, charges to be made during vacation periods, etc.

### *Accommodations with Private Landlords*

The University receives up-to-date information about available accommodations and maintains a file of such listings at the Housing Office, Administration Building, 405 Hilgard Avenue, Los Angeles 24. Arrangements for such rooms cannot be made by mail, but the listings are freely available to any student who calls at the Office in person.

Prices range from \$55 to \$75 per month for room and board, and from \$30 to \$50 per month for room only. Those who are not boarding by the month will find many restaurants in the vicinity. There is also a student-owned cafeteria on the campus where meals can be purchased at moderate prices.

### *Accommodations with Non-Profit Student Groups*

*Coöperatives.*—The U.C.L.A. Coöperative Housing Association, Inc., can accommodate 225 members. This association operates according to Rochdale principles: all probationary and regular members must share in doing the work required to operate the plant and must take part in house meetings for the election of officers and the formulation of policy. Board and lodging, with 2, 3, or 4 in one room, costs between \$40 and \$48 per month, plus several hours of work each week. A membership and key deposit of \$25.50 is required at the time of application. Information concerning application for membership may be secured from the Manager at Landfair House, 500 Landfair Avenue, Los Angeles 24.

*Fraternities.*—Most of the 35 men's fraternities own or lease homes near the campus and provide lodgings and meals for their members and pledges. Monthly bills for residents range from \$55 to \$75 per month, depending upon the number of meals served and the social and recreational privileges included. The average cost for nonresident membership is about \$20 per month. This sum includes

lunches and social and recreational privileges. Students interested in affiliating with a fraternity should register for rushing on forms available at the Office of the Dean of Students. Detailed information concerning the financial and other obligations of membership may also be secured at this Office. It will be noted that pledges, after completing one semester of academic work with a satisfactory scholarship average and after fulfilling other requirements, become eligible for initiation, at which time they should be prepared to pay a fee of about \$60 to cover the cost of their badge, a life subscription to the fraternity journal, and similar items.

### **LIVING ACCOMMODATIONS FOR MARRIED STUDENTS**

The housing shortage in the Los Angeles area, though presenting a difficult problem for single students, has been critical for those who are married. Such vacancies as occur are listed at the Housing Office for the use of students, but it should be said that there have been very few listings in recent months.

Through the cooperation of federal and state agencies, an emergency veterans housing project was completed on the campus during 1946-1947, comprising 308 family dwelling units. Each unit has a private entrance, one bedroom, a bathroom, two closets, and a combination living room-dining room-kitchen. Equipped with modest, basic furnishings these units rent at \$33 per month. A few unfurnished units rent at \$29 per month.

Under the terms of the contract between the Regents of the University and the Federal Public Housing Authority, the use of these accommodations is limited to "eligible tenants," meaning, generally, distressed families of service men and veterans and their families. The term "veteran" includes any person who has served in the military or naval forces of the United States during World War II. Families of servicemen or veterans include families of deceased servicemen or veterans. Families are considered "distressed" if they are without housing because of eviction or low income, or are affected by unusual hardships which prevent them from finding adequate housing within their financial reach.

It is the function of a special Veterans Emergency Housing Project Committee to fill vacancies as they occur from their files of active applications. Those who feel they may be eligible for consideration should submit applications on forms which are available at the Housing Office.

### **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 follow-



ing 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.

## **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.

In addition, employment is available on an hourly basis in the fields of

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 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 Office of Teacher Placement, 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.

### **BUREAU OF VOCATIONAL REHABILITATION**

Men and women who have a physical or mental disability which handicaps them vocationally or which might be expected to handicap them vocationally are eligible for the services of the Bureau of Vocational Rehabilitation of the State Department of Education. These services include vocational counseling and guidance, training (with payment of costs such as books, fees, tuition, etc.), and placement, and are available at no cost to the individual.

A Vocational Rehabilitation Officer is available on the Los Angeles campus for interviewing applicants. Appointments may be made in the office of the Dean of Students, 202 Administration Building, or by contacting the regular Vocational Rehabilitation Office at 811 Black Building, 357 South Hill Street, Los Angeles; telephone MAdison 7631.

### **VOCATIONAL COUNSELING**

Counsel is provided for students who wish assistance in the choice of, and preparation for, proper vocational objectives. Individual interviews are arranged by appointment at 202 Administration Building. Selected tests are provided as a

basis for counseling. Information concerning the wide range of vocations and occupations is available to the student who wishes both general and specific facts. Conferences on selected vocations are arranged, with outstanding leaders in the field as speakers. All regularly enrolled students of the University are eligible for this service.

### **VETERANS AFFAIRS**

An Office of Veterans Affairs, in charge of a Coördinator of Veterans Affairs, has been established by the University to work out with returning service men and women the many irregularities in their educational programs resulting from war service, to maintain liaison in their behalf with the United States Veterans Administration, and to assist them in becoming assimilated in the life and spirit of the University. This office is situated on the campus in Room 321, Administration Building.

In addition, the United States Veterans Administration maintains an office, in charge of a Training Officer, to assist returning service men and women who are applying for federal educational benefits. This office is located in Room 115, Building 1L.

Information regarding educational benefits available from the State of California may be obtained from the California Veterans Welfare Board Sacramento 7, California.

Veterans who have used previously any benefits under the provisions of Public Law 346 (G. I. Bill) or Public Law 16 (Rehabilitation) and who expect to transfer to any campus of the University, should apply to their local U. S. Veterans Administration Office for a Supplemental Certificate of Eligibility and if necessary, for transfer of file, in sufficient time to receive the Supplemental Certificate of Eligibility prior to their departure from that region. Failure to present this certificate at the time of registration will necessitate payment for tuition, fees and books as required of nonveterans.

Veterans Counseling Centers are located on or in the vicinity of each campus. Services of these centers are available to all veterans without cost. The centers offer vocational counseling which may include aptitude testing and use of the center's library of occupational materials, as well as extensive interviewing. The Counseling Center for the Los Angeles campus is located at 815 South Hill Street, Los Angeles 14.

### **UNDERGRADUATE SCHOLARSHIPS**

The Committee on Undergraduate Scholarships and Prizes 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 Office of the Dean of Students on or before March 31 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 Office of the Dean of Students.

Some of the scholarships are available only to students with special qualifications. Among these are the *LaVerne Noyes Scholarships* for needy veterans of World War I or their children, and the *Will Rogers Scholarship* for students who are handicapped because of physical disability or because of obstacles caused by environment or lack of opportunity.

A limited number of Nonresident Scholarships are also awarded to distinguished students from outside the State. Students applying for Nonresident Scholarships should include transcripts of college records with their application forms when transferring from another university or college. Entering freshmen should take the College Entrance Board examinations and have the score forwarded to the Committee on Undergraduate Scholarships in addition to the filing of the regular application form.

### **Alumni Freshman Scholarships**

The U.C.L.A. Alumni Association makes available each year a certain number of scholarships to entering freshmen from accredited California high schools. 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 Office of the Dean of Students, 202 Administration Building, 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 Manager, California Alumni Association, 301 Stephens Union, University of California, Berkeley 4. Applications must be on file on or before March 31 in any one year.

In the selection of the beneficiaries of these awards, the scholarship and 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.

All loans are repayable as soon as possible without defeating the purpose of the loan or seriously inconveniencing the students. Loans are repaid either by payment in full within five months after graduation or withdrawal from the University, or by installments beginning not later than five months after graduation or withdrawal from the University. All loans are made subject to repayment in full within two years after graduation.

Applications should be filed at least five days in advance. For further information, apply to the Dean of Students 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 University Friends of Music, an organization for the promotion of chamber music, offers memberships to students.

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 Baptist, Catholic, Congregational, Disciple, Episcopal, Jewish, Latter-day Saints, Lutheran, Methodist, Presbyterian, and Unitarian 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**

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## **COLLEGE OF LETTERS AND SCIENCE**

THE curricula of the College of Letters and Science are designed to provide the student with opportunities to broaden his culture and to prepare him for specialized professional studies. These curricula lead to the degree of Associate in Arts, normally at the end of the fourth semester, and to the degree of either Bachelor of Arts or Bachelor of Science, normally at the end of the eighth semester.

A liberal education presupposes a reasonably wide distribution of courses that contribute to a desirable balance of intellectual interests. To this end the student is required to select courses in the lower division that deal with general fundamentals of human knowledge. In the more diverse offering of the upper division the student is relatively free to concentrate his attention upon courses in a field of interest best suited to his aptitudes and purposes.

Each student therefore chooses a field of concentration in the upper division which may be a program of related courses within a single department (departmental major), or a group of coördinated courses involving a number of departments (interdepartmental curriculum), or, under certain circumstances, an organized group of courses chosen to meet a student's special need (individual field of concentration). The pursuit of such definite 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 related to his proposed advanced study. Through such guidance and selection, continuity in a chosen field of learning is assured.

### **OLD REQUIREMENTS**

The following regulations, which were in effect prior to July 1, 1947, are applicable to all students registered in the College of Letters and Science prior to that date, and to students entering the College in September, 1948, or February, 1949, with 55 or more units.

#### **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.

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 1.00 (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) *General University requirements.*<sup>†</sup>

Subject A.<sup>‡</sup>

Military Science and Tactics, 6 units, or Naval Science, 12 units (men).  
Physical Education, 2 units (4 semesters).

(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 4 units of this requirement; the third and fourth years in the same language will be counted in satisfaction of 4 units each. Only work of grade C or higher may be counted.<sup>§</sup>
- (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. No unit credit is given for a proficiency examination.
- (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

<sup>†</sup> For information concerning exemption from these requirements apply to the Registrar.

<sup>‡</sup> 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 85.

<sup>§</sup> 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.



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 University of California Extension, but will not be counted as a part of the 60 units.
- (D) *Natural Science*. At least 12 units chosen from the following list, of which not less than one unit shall be in laboratory work. Three units of mathematics<sup>†</sup> not offered in satisfaction of requirement (E), or Astronomy 4 or 12, may be substituted for 3 units of this requirement. Three units of the requirement may be satisfied by an eleventh- or twelfth-year laboratory science taken in high school with a 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,\* 6B,\* 8.

Entomology 1.\*

Geography 1A,† 3, 5A.†

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

Meteorology 3.

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

Zoology 1A,\* 1B,\* 15,\* 16,\* 35.\*

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

- (1) English, Speech:

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

Speech 1A-1B, Theater Arts 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.

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

\* Will be accepted as a laboratory course.

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

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.

(3) Mathematics:

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

(4) Social Sciences:

Anthropology 1A†-1B.

Anthropology-Sociology 5A-5B.

Economics 1A-1B.

Geography 1A†-1B.

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

Political Science 1 and 2.

Public Health 5A-5B.

Sociology 1A-1B.

(5) Philosophy:

Philosophy 2A-2B, 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.

### Upper Division

Students transferring to this College under the old plan with upper division standing must complete lower division requirements (A) to (E) prior to graduation.

Students graduating under the old plan are required to complete a minimum of 36 upper division units from the Letters and Science List, of which not more than 30 may be taken in one department. Otherwise, the requirements for the bachelor's degree, as stated on the pages following, are applicable. In case of any doubt, consult a counselor in the College office, Room 232 Administration Building.

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

## NEW REQUIREMENTS

REQUIREMENTS FOR ADMISSION TO THE UPPER DIVISION  
AND FOR THE DEGREE OF ASSOCIATE IN ARTS

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 1.00 (a C average), and must have satisfied requirements (A), (B), (C), (D), and at least three of the six requirements under (E), (F), and (G), below. However, the remaining requirements from (E), (F), and (G), must be completed prior to graduation. In fields of concentration requiring unusually heavy preparation, additional postponements are possible, as follows: requirements (B), (E), (F), and (G), or any portion of them, may be postponed to the upper division on recommendation of the department and approval of the Executive Committee of the College. These authorized postponements are listed on page 68. While requirement (B) should, so far as possible, be satisfied by work done in the high school, work done prior to graduation from high school will not be counted as part of the 60 units. Students who transfer to the Los Angeles campus of the University of California having completed the requirements for upper division standing in the College of Letters and Science at Berkeley shall be admitted to the Upper Division in this College and not held for the requirements of this section.

(A) *General University Requirements.*<sup>†</sup>

- (1) *Subject A.* An examination in Subject A (English Composition) is required for all entrants at the time of their first registration in the University. For further regulations concerning Subject A, see page 35.
- (2) *Military Science and Tactics* (6 units) or *Naval Science* (12 units), 4 semesters (men).
- (3) *Physical Education*, 4 semesters (2 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 be counted in satisfaction of 4 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.§

<sup>†</sup> For information concerning exemption from these requirements apply to the Registrar.  
<sup>§</sup> 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.

- (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) *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 part of the 60 units. Plane geometry is normally offered also in the Summer Sessions.

(D) *English Composition.* At least three units in English composition with a grade of C or better. This requirement may also be satisfied by passing a proficiency examination in English composition set and administered by the Department of English with the approval of the Executive Committee of the College.

(E) *Natural Sciences.*

- (1) At least five units in physical science, chosen from the following list:

Astronomy 1, 7, 100

Chemistry 1A, 2A, 2

Geography 1A

Geology 2, 3, 5, 101

Mathematics, one course from C, D or 1, 3A, 7, Statistics 1

Meteorology 3

Physics 1A, 1B, 1C, 1D, 2A, 2B, 10

- (2) At least five units in biological science, chosen from the following:

Anthropology 1A

Bacteriology 1, 6

Biology 12

Botany 1A, 1B

Life Sciences 1A-1B

Paleontology 111A, 111B

Psychology 22

Zoology 1A, 1B

(F) *Social Sciences.*

- (1) A six-unit lower division year course in history, chosen from the following:

History 4A-4B or 5A-5B or 7A-7B or 8A-8B

- (2) At least six units in social sciences exclusive of history and including courses in at least two subjects, chosen from the following list:

Anthropology 1B  
 Anthropology-Sociology 5A  
 Economics 1A, 10, 11, 101  
 Geography 1B  
 Political Science 1, 2, 101, 103  
 Psychology 21, 101  
 Public Health 5A  
 Sociology 1A, 101

- (G) *Humanities*. Two of the following three groups:

- (1) *Literature*. At least 4 units in English, American, or any foreign literature, in the original language or in translation, selected from the following list:

English 36A, 36B, 115, 117J, 125C, 125D, 130A, 130B, 133, 135, 136, 190A, 190B  
 French 109A, 109B, 109M, 109N  
 German 104A, 104B, 118A, 118B, 121A, 121B  
 Greek 101, 114, 180A, 180B  
 Italian 103A, 103B, 109A, 109B  
 Latin 5A, 5B, 180A, 180B  
 Scandinavian 141  
 Spanish 102A, 102B, 103A, 103B, 104A, 104B

- (2) *Philosophy*. A six-unit lower division year course in philosophy, selected from the following:

Philosophy 2A-2B, or 20-21

- (3) *The Arts*. At least 4 units selected from the following:

Art 1A, 1B, 121A, 121B, 131A, 131B  
 Music 2A, 2B, 127

The degree of Associate in Arts will be granted on the following conditions:

(A) The candidate shall have completed not less than 60 units which may be counted toward the bachelor's degree, with an average grade of C in all courses undertaken in this University.

(B) The candidate shall have completed either

- (1) Requirements (A) to (G), inclusive, above; or  
 (2) The lower division courses specified as prerequisite for a field of concentration, plus requirements (A) to (G) less omissions authorized for that field of concentration by the Executive Committee of the College.

The above requirements shall have been completed at least one semester prior to receipt of the bachelor's degree.

**Authorized Exemptions and Deferments**

The following exemptions and deferments have been authorized in the fields of concentration listed below. Requirements deferred to the upper division must be completed before receipt of the bachelor's degree.

***Major in Chemistry*****Exemptions:**

1. Either (F-1), or (F-2); and
2. Either (E-2), or one of the two required groups under (G).

**Deferments:**

Requirements (B), (E), (F), and (G) may be postponed to the upper division. Upper division standing and the Associate in Arts degree will be granted to chemistry majors who have completed 60 units of college work with an average grade of C (1.0); who have completed requirements (A), (C), (D), and all but 4 units of (B); who have satisfied requirements stated under "Preparation for the Field of Concentration" except for German (3P) or Physics (1C) (not both); and who have completed any two of the following requirements: (E-2), (F-1), (F-2), (G-1), (G-2), (G-3), and Chemistry 6B.

***Curriculum in Earth Physics and Applied Geophysics*****Exemptions:**

1. Requirement F-2; and
2. One of the two groups required under (G).

**Deferments:**

Requirements B, E-2, and G.

***Major in Geology*****Exemptions:**

1. Requirement F-2; and
2. One of the two groups required under (G).

**Deferments:**

Requirements (B) and (G).

***Major in Mathematics***

Exemption: Requirement F-1.

**Deferments:**

Requirements (E-2) or (F-2), and both of the groups required in (G).

***Premedical curriculum*****Exemptions:**

1. (F-1) or (F-2); and
2. One of the two groups required under (G).

**REQUIREMENTS FOR THE BACHELOR'S DEGREE**

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

(A) The minimum number of units for the bachelor's degree shall be 120, of which at least 108 shall be in courses taken from the Letters and Science List of Courses, and at least 42 shall be in upper division courses from the Letters and Science List. At least 12 of these upper division units shall be outside a single department, and not more than 42 units of upper division courses taken in one department may be counted toward the bachelor's degree. Not more than 4 units in physical education may be counted toward the bachelor's degree.

A grade-point standing of C (1.00) or higher must be maintained in all courses undertaken in this University.

(B) The candidate shall have completed requirements (A) to (G), inclusive, above, except for authorized exemptions (see page 68).

Students who transfer to the Los Angeles campus of the University of California having completed the requirements for upper division standing in the College of Letters and Science at Berkeley shall not be held for the above requirements.

(C) The candidate shall have met the University requirement in American History and Institutions.

(D) The candidate shall have satisfied the requirements of a field of concentration in the College of Letters and Science. Before the degree is granted, the department or committee in charge of the student's field of concentration must certify that the student has completed the requirements for the field of concentration.

The degree of Bachelor of Arts shall be granted to all candidates who qualify for the bachelor's degree, except that the degree of Bachelor of Science shall instead be granted to candidates who have completed such fields of concentration as the Executive Committee of the College may designate as leading to that degree.

**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 42 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 as part of a field of concentration or as a prerequisite therefor, will, for students in that field of concentration, 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, 1948-1949.

**Agriculture:**

Agricultural Economics. 101A, 116.

Botany. All undergraduate courses.

Entomology. 1, 134.

Ornamental Horticulture. 140.

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, 151, 161A-161B, 164A-164B, 180, 182A-182B.

Astronomy. All undergraduate courses except 112.

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, 180A.

Engineering. 11A-11B, 2, 8, 15A-15B, 100A-100B, 102A-102B, 103, 105A-105B, 108A-108B.

**English:**

English. All undergraduate courses.

Speech. All undergraduate courses.

French. 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 7, 11A-11B, 107, 108, 109, 150, 169, 175, 176.

**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 and 108A-108B, but not more than 8 units from 9A-9B, 10A-10B, 11A-11B, 37A-37B, and 46A-46B.

**Naval Science.** All undergraduate courses.

**Oceanography.** All undergraduate courses.

**Oriental Languages.** 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.** 5A-5B, 101A-101B, 105, 121, 145, 170.

**Slavic Languages.** All undergraduate courses.

**Spanish and Italian:**

Spanish. All undergraduate courses except 10.

Italian. All undergraduate courses.

Portuguese. All undergraduate courses.

**Theater Arts.** 2A-2B, 24, 155, 156A-156B, 169.

**Zoölogy:**

Zoölogy. All undergraduate courses except 4.

Biology. All undergraduate courses.

## 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 of 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 field of concentration 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 field of concentration, 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 PROGRAMME.

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

## REGULATIONS GOVERNING THE FIELD OF CONCENTRATION

(A) A field of concentration shall consist of not less than 24, nor more than 42 units of upper division courses.

(B) The fields of concentration shall be designed as *departmental*, *inter-departmental*, or *individual*.

- (1) A departmental field of concentration (or major) shall consist of a group of coördinated upper division courses, of which at least two-

thirds of the units are in one department, set up and supervised by a department.

- (2) An interdepartmental field of concentration (or curriculum) shall consist of at least 36 units of coördinated upper division courses, of which less than two-thirds are in one department, set up and supervised by a committee appointed by the Executive Committee of the College.
- (3) A student who has some unusual but definite academic interest, for which no suitable major or curriculum is offered in the University of California, and who has completed at least two semesters of work (a minimum of 24 units) in the University with a grade-point average of 2.00, or higher, may, with the consent of the Dean of the College and with the assistance of a faculty adviser appointed by the Dean, plan his own field of concentration.

(C) Each upper division student must designate his field of concentration on his study-list card, he must register with the department or committee in charge of his field of concentration, and his study list must be approved by a representative of the department or committee before it will be accepted by the Registrar. A department or committee may designate the Dean of the College as its representative.

(D) An upper division student may change his field of concentration only by permission of the Dean of the College and of the department or committee in charge of the field of concentration to which the student petitions to transfer. No change of field of concentration will be permitted after the opening of the student's last semester.

(E) Students who fail to attain a grade-point average of at least 1.00 in work taken in the prerequisites for the field of concentration, or in courses in the field of concentration, may, at the option of the department or committee in charge, be denied the privilege of continuing in that field of concentration.

(F) All students must take at least one course in their field of concentration each semester during their last, or senior year.

(G) Students who are admitted to senior standing in the College of Letters and Science (Los Angeles) on the basis of credit from another institution, from University Extension, or from another college or school of the University must complete subsequent to such admission, at least 18 units of upper division courses, including at least 12 units in their field of concentration. The Executive Committee of the College shall have authority to reduce this requirement in the case of students transferring from the College of Letters and Science at Berkeley.

In the College of Letters and Science a student may take any course for which he has completed the prerequisites, if he has attained upper division standing or such other standing as may be required for the course.

Only the following courses may be counted in satisfaction of the field of concentration: (1) courses in resident instruction\* at the University of California, Los Angeles campus, or at another college or university; (2) courses in University Extension with numbers having the prefix "X," "XB," "XL," or "XSB."

#### ORGANIZED FIELDS OF CONCENTRATION IN THE COLLEGE OF LETTERS AND SCIENCE

A field of concentration consists of a substantial group of coördinated upper division courses in one or more departments. The details of the student's program in his field must be approved by his official adviser. Before undertaking this program the student must, in most cases, complete the special courses which are essential requirements for the completion of his work and which are listed as preparation for it.

Not more than 42 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 field of concentration 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, XSB, 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 field of concentration.

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

See 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:

#### *Majors Leading to the Bachelor's Degree*

The College offers majors (departmental fields of concentration) in the following fields. These majors lead to the degree of Bachelor of Arts unless otherwise noted.

Anthropology	Geography	Oriental Languages
Applied Physics†	Geology	Philosophy
Astronomy	German	Physics
Bacteriology	Greek	Political Science
Botany	History	Psychology
Chemistry†	Latin	Sociology
Economics	Mathematics	Spanish
English	Meteorology	Speech
French	Music	Zoölogy

\* Resident instruction is defined as that which is offered to students in regular attendance during the fall and spring semesters and the Summer Sessions.

† Leading to degree of Bachelor of Science.

*Curricula Leading to the Bachelor's Degree*

The College offers curricula (interdepartmental fields of concentration) leading to the degree of Bachelor of Arts in the following fields:

American Culture and Institutions  
 Earth Physics and Applied Geophysics  
 Elementary and Kindergarten-Primary Teaching  
 International Relations  
 Latin-American Studies  
 Medical Technology  
 Prelibrarianship  
 Premedical Studies  
 Presocial Welfare  
 Pretheology  
 Public Service

Requirements of these curricula are listed in detail in the following pages.

*Individual Fields of Concentration Leading to the Bachelor's Degree*

A student with an unusual but definite academic interest for which no suitable curriculum is offered in this University, and who has a B average in 24 or more units, may, with the consent of the Dean and the assistance of a faculty adviser appointed by the Dean, plan his own field of concentration. Conditions: (1) the plan must be approved by the Executive Committee of the College; (2) the faculty adviser shall supervise the student's work and sign his study list; (3) the Dean must certify the student for graduation. All rules for fields of concentration not in conflict with this provision apply to individual fields of concentration.

**CURRICULA LEADING TO DEGREES****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: Anthropology 1A-1B (6), Anthropology-Sociology 5A-5B (6), Astronomy 1 (3), Bacteriology 6 (2), Biology 1 (3), 12 (3), Chemistry 2A (5), Economics 1A-1B (6) (see above), English 36A-36B (6), History 39 (2), 46 (3), Physics 10 (3), Political Science 1-2 (6) (see above), 10 (3), 34 (3), Sociology 1A-1B (6).

**Upper Division**

Curriculum requirements:	From Group I.....	15 units
	From Group II.....	12
	From Group III.....	15

Total.....	42 units
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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), 162A-162B (6), 171 (3), 172 (3), 173 (3), 174 (3), 181 (3).

**II. Cultural and Intellectual Development**

Required: English 111 (3), and nine units selected from Astronomy 100 (3), Education 102 (3), English 130A-130B (4), 131 (3), 133 (3), 135 (3), 136 (3), 190A-190B (4), Geology 107 (2), Music 142 (2), Philosophy 114 (3), Physical Education 151 (2), Psychology 101 (3).

**III. Political, Economic, and Social Development**

Fifteen units selected from Economics 107 (2), 131A-131B (4), 150 (3), 155 (2), 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 EARTH PHYSICS AND APPLIED GEOPHYSICS**

This curriculum is designed to provide training in the three basic sciences: mathematics, physics, and chemistry, and in geology. The requirements of the petroleum and mining industries for exploration experts, and the demands of educational and research institutions, indicate the desirability of a broad training in the physical sciences and in geology for those intending to enter either the field of applied geophysics or the general field of the physics of the earth.

**Lower Division**

Required: Chemistry 1A-1B (10), Geology 5 (4), 3 (3), Mineralogy 6 (4), Mathematics 5A-5B (8), 6A-6B (6), or Mathematics 1-3A, 3B, 4A-4B (14), Physics 1A-1B-1C-1D (12).

**Upper Division**

Required: Chemistry 110A-110B (6), Geology 102A-102B (6), 103 (4), Mathematics 110A-110B (4), 126 (3), Physics 105 (3), 107 (3), 107C (2), 110 (3). Recommended: Chemistry 111B (2), Geology 110 (3), 111 (3), 116 (3), Mathematics 135 (3), Physics 112 (3), 116A (3), 116C (2), Geophysics 122 (3).

**CURRICULUM IN ELEMENTARY AND KINDERGARTEN-PRIMARY TEACHING**

*Committee in Charge of the Curriculum:* A. E. Longueil, chairman, Miss Ruth Fulton, John Hockett, Miss Virginia Richard, C. M. Zierer.

*Adviser:* Miss Virginia Richard.

Consult Mr. Hockett or Miss Richard concerning requirements.

**CURRICULUM IN INTERNATIONAL RELATIONS**

This curriculum is designed primarily for students in the College of Letters and Science whose interests, though not specialized, lie in the field of international relations and modern diplomacy. Students interested in preparing for the American Foreign Service examinations should consult the adviser concerning additional courses.

## Lower Division

Required: Political Science 1-2 (3-3); History 4A-4B, 5A-5B, or 8A-8B (3-3); and Economics 1A-1B (3-3), or 101 (3). Recommended: Geography 1A-1B (3-3), 3 (3), 4 (3); Anthropology 1A-1B (3-3).

## Upper Division

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

I. General requirements (18 units): (a) Political Science 125 (3), and 127 (3), or Political Science 130A-130B (3-3); (b) Political Science 133 (3); (c) Geography 181 (3); (d) History 143, 144, 145, 147, 149A-149B, or 153A-153B (6 units).

II. Field requirements (at least 9 units in one of the four following fields of specialization):

(a) *Far Eastern Affairs*: Political Science 136 (3), 138 (3), 159 (3); History 191A-191B (3-3), 192A-192B (2-2); Geography 124A-124B (3-3).

(b) *Latin-American Affairs*: Political Science 126 (3), 150 (3), 151 (3); History 161 (3), 162A-162B (3-3), 166A-166B (2-2), 169 (3); Geography 122A-122B (3-3).

(c) *European Affairs*: Political Science 154 (3), 155 (3); History 145 (3), 147 (3) [if not offered under I, above], 148A-148B (3-3), 149A-149B; Geography 123A-123B (3-3), 173 (3).

(d) *British Empire Affairs*: Political Science 152 (3), 153 (2); History 153A-153B (3-3) [if not offered under I, above], 157 (3), 158A-158B (3-3), 159 (3), 196B (3); Geography 125 (3).

III. Electives (9 additional units chosen from the courses listed above or the following):

Political Science 112 (3), 120 (2); History 131A-131B (3-3), 161 (3), 178 (3); Geography 105 (3), 113 (3), 121 (3), 171 (3); Economics 107 (3), 176 (2), 190 (3), 195 (3), 197 (3); Anthropology 139 (3), 147 (3); Sociology 186 (3), 189 (2); Spanish 184 (3).

Candidates for the degree in this curriculum will be required to give evidence, normally by examination, of their ability to read current literature or international relations in one modern foreign language: French, German, Spanish, or Italian. With permission, candidates may offer other language not native to them.

## CURRICULA IN LATIN-AMERICAN STUDIES

*Committee in Charge of the Curriculum*: Ralph Beals (chairman), H. J. Bruman, J. W. Caughey, J. A. Crowe, R. H. Fitzgibbon.

The curricula in Latin-American Studies are designed to serve the needs of the following classes of students: (1) students preparing to teach Spanish in the secondary schools; (2) students preparing for advanced study in the social sciences, primarily in the Latin-American field; (3) students planning careers which will necessitate residence in or knowledge of Latin America, such as teaching, business, scientific research, engineering, journalism, or government service; (4) students desiring a general education focused on this particular area. Selection of courses should be governed in part by the objective of the student.

## Lower Division

Required: Spanish 4; Portuguese 1 and 2; Geography 1A; Anthropology 1A; History 8A-8B; 12 units chosen from: Anthropology-Sociology 5A-5B, Economics 1A-1B or 101, Geography 1B, Political Science 1, 2, or 103.

## Upper Division

*Curriculum I* (for students preparing to be teachers of Spanish, including candidates for the general secondary credential with a teaching major in Spanish and a teaching minor in social sciences): Spanish 42A-42B, 101A-101B (may be omitted if 20 or 25A-25B have been completed with a grade of A or B), 102A-102B, 104A-104B, 116A-116B; 18 to 24 units of additional courses chosen from the list below. Courses must be chosen from at least three departments, with at least 6 units from each of two departments other than Spanish, and at least 15 units of courses of Latin-American content (indicated below by asterisks).

Candidates for the general secondary credential may complete a teaching minor in social science by meeting the requirements of this curriculum. Completion of the teaching major in Spanish also requires 6 units of graduate courses in Spanish after completion of the A.B. degree. Candidates for the credential must take Psychology 21, 22 (or 23) and 18 units of prescribed courses in Education. For further information consult the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION and the appropriate adviser.

*Curriculum II* (for students desiring a general education or careers in business, research, or government service): Spanish 104A-104B; 6 units chosen from Spanish 101A-101B, 116A-116B, Portuguese 101A-101B; 30 units of additional courses chosen from the list below. Courses must be chosen from at least three departments, with at least 9 units from each of two departments other than Spanish, and at least 20 units of courses of Latin-American content (indicated below by asterisks).

*Additional Courses:*

Anthropology 101, 105, 140,\* 141.\*

Economics 190, 195, 199.

Folklore 145.

General Philology 170, 171.

Geography 118, 122A-122B,\* 131, 165, 171B,\* 175, 199.\*

History 160,\* 161A-161B,\* 166A-166B,\* 168,\* 169,\* 178, 188, 199.\*

Music 136.

Political Science 126,\* 150,\* 151,\* 199A-199B\* (Section 7).

Sociology 143, 144, 186.

Spanish 114,\* 124,\* 134,\* 184.\*

## CURRICULUM IN MEDICAL TECHNOLOGY

(with major in Bacteriology)

Adviser: Mrs. Meridian G. Ball.

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 modern foreign language; Chemistry 1A-1B, 6A, 8; Physics 2A-2B; Zoölogy 1A-1B, 4; Bacteriology 1; additional courses necessary to meet lower division requirements (see page 65).

#### Upper Division

Required: Bacteriology 103, 105, 106, 107, 108; Zoölogy 111, 111C, 111H; Botany 126; Public Health 163A; electives to total 120 units for the A.B. degree.

#### CURRICULUM IN PRELIBRARIANSHIP

*Committee in Charge of the Curriculum:* M. A. Wenger (chairman), Lawrence C. Powell, John Vincent, Gustave O. Arlt, Max Dunn.

*Advisers:* Mr. Powell in charge.

The Prelibrarianship Curriculum is designed to meet the needs of students who plan to pursue a general course in a graduate library school. The requirements of library schools and the demands of the profession indicate the desirability of a broad background in liberal arts subjects for students who plan to enter the general field of public and university library work.

Students who intend to specialize in scientific, industrial, or other technical fields of librarianship should complete a major in the appropriate subject under the direction of the department concerned, rather than pursue the Prelibrarianship Curriculum. Students primarily interested in public school librarianship are advised to complete the requirements for a general teaching credential as described in the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION.

To be admitted to the Prelibrarianship Curriculum a student must file a "Prelibrarianship Plan" which has been approved by an authorized Library Adviser, and which meets the following general requirements:

- (1) One year in each of two of the following languages: French, German, Italian, Russian, Spanish.
- (2) Lower division courses:
  - (a) Requirements of the College of Letters and Science.
  - (b) Prerequisites for upper division courses selected by the student.
  - (c) Recommended electives:

Astronomy 1  
Bacteriology 6  
Biology 1  
Botany 1A  
Chemistry 2

Geology 2  
Economics 40  
English 1B, 31, 36A-36B  
Philosophy 2A-2B  
Physics 10

(d) Ability to type is recommended by many library schools and is generally recognized as an asset to the professional librarian.

- (3) Upper division courses: At least 36 upper division units chosen from the fields listed below, with no less than 12 units in one field, and no less than 6 units in each of four other fields. The particular choice of courses should be determined by the student in consultation with a library adviser on the basis of the student's individual interest and needs. (Courses marked with asterisks have lower division prerequisites.)

### *I. Art and Music*

- Art \*121AB (4) Survey of the History of Art  
 \*131A (2) History of Architecture and Sculpture  
 \*131B (2) History of Painting  
 \*161AB (4) Oriental Art  
 Music \*111AB (6) History of Music in Western Civilization  
 127 (2) History of Opera  
 \*130 (2) History and Literature of Church Music  
 136 (2) Folk Music  
 \*142 (2) History of Music in America

### *II. Education*

- 101 (3) History of Education  
 102 (3) History of Education in the United States  
 106 (3) Principles of Education  
 \*110 (3) The Conditions of Learning  
 180 (3) Social Foundations of Education

### *III. English and American Literature*

- 110 (3) Introduction to the English Language  
 \*114AB (6) English Drama from the Beginning to the Present  
 117J (3) Shakespeare  
 \*122AB (6) English Poetry from the Beginning to the Present  
 125CD (6) The English Novel from the Beginning to the Present  
 \*125GH (6) English Prose from the Beginning to the Present  
 130AB (4) American Literature  
 190AB (4) Literature in English from 1900

### *IV. Foreign Language and Literature*

- French 109MN (6) A Survey of French Literature and Culture  
 German 121AB (4) German Literature in Translation  
 Greek 180AB (4) Survey of Greek Literature in English  
 \*Italian 103AB (6) Survey of Italian Literature  
 Latin 180AB (4) Survey of Latin Literature in English  
 \*Spanish 102AB (6) Survey of Spanish Literature to 1700  
 \*Spanish 103AB (6) Nineteenth-Century Spanish Literature  
 (Note: Upper division survey courses in the foreign language itself may be substituted for survey courses in translation.)  
 \*Folklore 145 (3) Introduction to Folklore  
 General Philology 170 (3) Introduction to Linguistics

V. *History, Economics, and Political Science*

- History 101 (3) Main Currents in American History  
 \*146AB (6) History of Slavic Europe and the Balkans  
 \*153AB (6) History of the British People in Modern Times  
 \*162AB (6) Hispanic America from the Discovery to the Present  
 \*179 (3) Constitutional History of the United States  
 \*188 (3) History of California  
 \*191AB (6) History of the Far East  
 \*198 (3) History and Historians
- Economics \*100A (3) General Economic Theory  
 \*103 (3) Development of Economic Theory  
 \*108 (3) Development of Economic Institutions  
 \*135 (3) Money and Banking  
 \*190 (3) International Economics
- Political Science \*103 (3) Principles of Political Science  
 110 (3) History of Political Ideas  
 127 (3) International Relations  
 \*143 (2) Legislatures and Legislation  
 146 (2) Public Opinion and Propaganda  
 \*148 (3) Public Relations  
 \*162 (3) Municipal Government  
 \*163 (3) Municipal Administration  
 \*181 (3) Principles of Public Administration  
 \*185 (3) Public Personnel Administration

VI. *Psychology, Anthropology, and Sociology*

- Psychology \*110 (3) Educational Psychology  
 \*124 (2) History of Psychology, Early Modern Period  
 \*125 (2) History of Psychology, Second Modern Period  
 \*126 (2) Contemporary Psychology  
 \*134 (2) Motivation  
 \*143 (2) Propaganda and Public Opinion  
 \*145AB (4) Social Psychology  
 \*147 (3) The Psychological Method in the Social Sciences  
 \*168 (3) Abnormal Psychology  
 \*175 (3) Psychology of Religion
- Anthropology \*101AB (6) World Ethnography  
 \*103 (3) Culture History  
 125 (3) Comparative Society
- Sociology \*121 (3) Social Processes  
 \*143 (3) Urban Sociology  
 \*144 (3) Rural Sociology  
 \*145 (3) Community and Ecology  
 \*189 (3) Ethnic Minorities

## CURRICULUM IN PREMEDICAL STUDIES

(leading to the degree of Bachelor of Arts)

*Committee in Charge of the Curriculum:*

G. H. Ball (chairman), F. Crescitelli, R. M. Dorcus, N. B. Nelson, M. S. Dunn.

A premedical student who plans to earn the bachelor's degree before entering a medical school may major in any one department in which he fulfills the departmental requirements. On the other hand, if he desires to make use of the Interdepartmental Field of Concentration, he should choose one of the course combinations listed below.

*Preparation:* English 1A-1B (6), Chemistry 1A-1B, 8, 9, 6A (19), Zoölogy 1A-1B, 4, 100 (14), Physics 2A-2B (8), or 2A, 1C, 1D (10), or 1A, 1B, 1C, 1D (12), French 1, 2, or German 1, 2.

*Curriculum:* At least 36 units of coördinated upper division courses (including Zoölogy 100, 4 units), of which less than two-thirds are in one department, in no more than three of the following departments—Bacteriology, Chemistry, Physics, Psychology, Public Health, Zoölogy.

*(1) Bacteriology and Chemistry:*

Bacteriology 1, 103

Chemistry 6A, 8, 9 (only 6 of these 9 units may be counted as upper division)

4 units chosen from Chemistry 108A-108B, 109A-109B, 110A-110B.

Additional upper division units chosen from:

Any upper division course or courses in bacteriology

Chemistry 101, 102, 107, 131, 112A-112B, 110A, 110B, 111A, 111B, 108A, 108B, 109A, 109B.

*(2) Bacteriology and Physics:*

Bacteriology 1, 103

Mathematics 3B, 4A

Physics 107, 107C, 121.

Any upper division units chosen from:

Any upper division course or courses in bacteriology

Physics 105, 108A, 108B, 108C, 116A, 116C, 114A, 124.

*(3) Bacteriology and Psychology:*

Bacteriology 1, 103

Psychology 106A, 108, 168.

Additional upper division courses chosen from:

Any upper division course or courses in bacteriology

Psychology 101, 106B, 131, 134, 137A-137B, 138, 150A, 150B.

**(4) *Bacteriology and Public Health:***

Bacteriology 1, 103

Public Health 5A-5B; 12 units from 105, 106, 111, 121, 123, 145, 163A, 167, 170.

Additional upper division courses chosen from:

Any upper division course or courses in bacteriology.

**(5) *Bacteriology and Zoölogy:***

Bacteriology 1, 103

Zoölogy 111, 111C, 130.

Additional upper division courses chosen from:

Any upper division course or courses in bacteriology

Any upper division course or courses in zoölogy.

**(6) *Chemistry and Physics:***

Chemistry 6A, 8, 9 (only 6 of these 9 units may be counted as upper division)

Chemistry 109A-109B

Physics 107, 107C, 121

Mathematics 3B, 4A.

Additional upper division courses chosen from:

Chemistry 101, 102, 103, 107, 131, 132, 112A, 112B, 108A, 108B, 110A, 110B, 111A, 111B

Physics 105, 108A, 108B, 108C, 116A, 116C, 114A, 124.

**(7) *Chemistry and Psychology:***

Chemistry 6A, 8, 9 (only 6 of these 9 units may be counted as upper division)

4 units chosen from Chemistry 108A, 108B, 109A-109B

Psychology 106A, 108, 185.

Additional upper division units chosen from:

Chemistry 101, 102, 107, 131, 112A (course 112A-112B may be substituted for courses 8 and 9)

Chemistry 112B, 110A, 110B (course 110A-110B may be substituted for course 109A-109B)

Chemistry 111A, 111B, 108A, 108B, 109A, 109B

Psychology 101, 106B, 131, 138, 168.

**(8) *Chemistry and Public Health:***

Chemistry 6A, 8, 9 (only 6 of these 9 units may be counted as upper division)

4 units chosen from:

Chemistry 108A, 108B, 109A-109B

Public Health 105, 106, 111, 121, 123, 145, 163A, 167, 170 (note prerequisite: 5A-5B).

Additional upper division courses chosen from:

Chemistry 101, 102, 107, 108A, 108B, 109A, 109B, 110A, 110B (course 110A-110B may be substituted for course 109A-109B), 111A, 111B, 131, 112A, 112B.

(9) *Chemistry and Zoölogy:*

Chemistry 6A, 8, 9 (only 6 of these 9 units may be counted as upper division)

4 units chosen from courses 108A, 108B, or 109A-109B

Zoölogy 101A, 101B, 118, 130.

Additional upper division units chosen from:

Chemistry 101, 102, 107, 131, 112A, 112B (courses 112A and 112B may be substituted for courses 8 and 9)

Chemistry 110A, 110B (may be substituted for course 109A-109B)

Chemistry 111A, 111B, 108A, 108B, 109A, 109B

Any upper division course or courses in zoölogy.

(10) *Physics and Psychology:*

Mathematics 3B, 4A

Physics 107, 107C, 121

Psychology 106A, 181, 185.

Additional upper division units chosen from:

Physics 105, 108A, 108B, 108C, 116A, 116C, 114A, 124

Psychology 101, 106B, 108, 138, 172A-172B.

(11) *Physics and Public Health:*

Mathematics 3B, 4A

Physics 107, 107C, 121

Public Health 5A-5B; 12 units from 105, 106, 111, 121, 123, 145, 163A, 167, 170.

Additional upper division units chosen from:

Physics 105, 108A, 108B, 108C, 116A, 116C, 114A, 124.

(12) *Physics and Zoölogy:*

Mathematics 3B, 4A

Physics 107, 107C, 121

Zoölogy 118, 130, 101A, 101B.

Additional upper division courses chosen from:

Physics 105, 108A, 108B, 108C, 116A, 116C, 114A, 124

Any upper division course or courses in zoölogy.

(13) *Psychology and Public Health:*

Psychology 105A, 108, 145A-145B, 147

Public Health 5A-5B; 12 units from 105, 106, 111, 121, 123, 145, 163A, 167, 170.

**Additional upper division courses chosen from:**

Psychology 101, 105B, 107, 112, 113, 134, 138, 143, 145A-145B, 147, 168, 185.

**(14) *Psychology and Zoölogy:***

Psychology 106A, 108, 168

Zoölogy 106, 118, 130.

**Additional upper division courses chosen from:**

Psychology 101, 106B, 131, 134, 137A-137B, 138, 150A, 150B

Any upper division course or courses in zoölogy.

**(15) *Public Health and Zoölogy:***

Public Health 5A-5B; 12 units from 105, 106, 111, 121, 123, 145, 163A, 167, 170.

Zoölogy 106, 118, 130.

**Additional upper division courses chosen from:**

Any upper division course or courses in zoölogy.

#### **CURRICULUM IN PRESOCIAL WELFARE**

***Committee in Charge of the Curriculum:*** Franklin Fearing (chairman), G. Hildebrand, Ralph Beals, Winston Crouch, Max Silverstein, F. M. Stewart.

***Preparation:*** Anthropology 1A (3), Bacteriology, Biology, or Zoölogy (2-3); Anthropology-Sociology 5A-5B (6) or Sociology 101 (3); Psychology 21-22 (6) or 101 (3); Economics 1A-1B (6) or 101 (3); Political Science 1-2 (6) or 103 (3); Statistics 1 (2).

#### ***Basic Requirements:***

The field of concentration in social welfare shall consist of 42 units in upper division Letters and Science courses of which 31 (or 32) units shall be distributed in the fields indicated below. The remaining 10 (or 11) units shall be elective and selected from the list below.

***Sociology***, at least 12 units including 120, 181, and 6 units of upper division sociology.

***Psychology***, at least 8 units selected from the following courses:  
Psychology 110, 112, 113, 134, 145A, 145B, and 147.

***Economics***, at least 5-6 units (two courses) selected from the following:  
Economics 150, 151, 152, 181A.

***Political Science***, at least 6 units including Political Science 181, and the remaining units to be selected from the following:  
Political Science 163, 172, 183, 185, and 187.

*Electives:*

Ten (or 11) units to complete the field shall be chosen from the following list of courses in consultation with, and approval of, an adviser.

Anthropology 103, 125 (for students intending to enter a graduate school of Social Welfare)

Economics 100A, 103, 106, 107, 131A-131B, 150, 151, 152, 155

History 131A-131B, 174, 176

Philosophy 104A-104B, 114, 183

Political Science 113, 156, 162, 163, 181, 183, 185, 187

Psychology 110, 112, 134, 145A-B, 147, 166A, 168, 185

Sociology 101, 118, 120, 121, 142, 143, 144, 145, 181, 182, 185, 186, 189

Home Economics 118, 120, 162A, 162B

Public Health 111, 112, 121.

**CURRICULUM IN PRETHEOLOGY**

*Committee in Charge of the Curriculum:* S. B. Hustvedt (chairman), D. K. Bjork, H. B. Hoffleit, Hugh Miller, John Seward.

*Preparation:* Greek and Latin, 16 units; English 1A-1B (6), 31 (2), 36A-36B (6); Psychology 21-22 (6); Philosophy 20, 21 (6). Recommended: History 4A-4B.

*Upper division:* 36 units from (A) and (B), with prescribed prerequisites.

(A) *Required Courses:* (22 units)

Speech 122: Diction and Voice (3)

History 121A-121B: The Middle Ages (6)

141A-141B: Europe in Transition, 1450-1610 (4)

Philosophy: 6 units from 104AB: Ethics (6);

112: Philosophy of Religion (3);

121: Political Philosophy (3);

146: Philosophy in Literature (3);

147: Philosophy of History (3)

Psychology 168: Abnormal Psychology (3).

(B) *Selective Requirements:* (14 units chosen from the following list)

Economics 101 (3)

Education 101 (3)

English 106F (2), 156, 157

Greek 117AB (4)

History 114 (2)

Latin 196AB (4)

Music 130 (2)

Philosophy: 3 units from the courses listed under (A)

Political Science: 3 units from 110, 112, 127.



**(C) Recommended Courses:**

Anthropology 101A-B

Sociology 142, 143, 144, 189

Art 121A-B, 181A

Economics 150, 155, 158

English 117J, 167

History 142, 147, 176, 178, 191AB

Music 111AB, 131

Philosophy 141AB, 157

Political Science 146, 148

Psychology 134, 138, 143, 145AB, 175.

**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 1-2 (3-3), Statistics 1 (2). In certain fields, other courses are prerequisite to upper division courses included in the curriculum:

*Public Personnel*—Psychology 21, 22.

*Public Relations*—Six units of lower division history.

**Recommended:** Economics 40 (3), English 1A-1B (3-3), Speech 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 (if Statistics 1 or Economics 40 was not taken in the lower division), Political Science 141, 156 or 187, 162 or 163, 181, 185. The program must be selected from one of the four 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 (3).

**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 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).

**IV. 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, 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.

**PREPARATION FOR VARIOUS PROFESSIONAL CURRICULA**

In addition to the curricula described in the preceding pages, all of which lead to the bachelor's degree, 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 in San Francisco offers two curricula leading to the degree of Bachelor of Science and to the degree of Doctor of Dental Surgery. The student has the option, at the close of the second semester in the dental college, of registering in either one of two major curricula: (1) restorative dentistry, or (2) preventive dentistry. At the end of the sophomore year (fourth

semester), a selected small group of students may enter the Honors Curriculum, which is designed to train outstanding students in the fields of dental research and teaching. In addition to these, there is a curriculum for the training of dental hygienists, leading to the degree of Bachelor of Science.

Classes are admitted to the College of Dentistry once a year, in September. Applications must be filed not later than May 1. Upon the satisfactory completion of six semesters the dental student will be eligible for the degree of Bachelor of Science, and for the degree of Doctor of Dental Surgery upon the completion of two additional semesters. The degree of Bachelor of Science will be granted the student in the Dental Hygiene curriculum at the end of the fourth semester.

### **Admission to Dental Curricula**

All applicants for admission to the dental curricula must have completed at least 60 units of college work with a scholarship average satisfactory to the Admissions Committee (approximately a B average), including the requirements (2)–(5) listed below. In addition, all applicants who meet the subject requirements must pass a performance test, designed to test manual dexterity. This test must be taken on the San Francisco campus, and is given in February and June. The student will find himself more adequately prepared for the dental curricula if he has taken in high school the following subjects: English, 3 units; history, 1 unit; mathematics, 3 units (algebra, plane geometry, and trigonometry); chemistry, 1 unit; physics, 1 unit; foreign language, 2–4 units.

### *Requirements for First and Second Years*

#### **(1) General University requirements:**

Subject A

Military Science (four semesters)

Physical Education (four semesters)

American History and Institutions is prerequisite to the bachelor's degree.

(2) English or Speech (1A–1B)..... 6 units

(3) Science ..... 32 units

(a) Chemistry 1A, 1B, 8, 9..... 16

(b) Physics 2A, 2B..... 8

(c) Zoölogy 1A, 1B..... 8

(4) Trigonometry (Mathematics C)  
(if not completed in high school)

(5) Electives selected as indicated from the following groups... 15–20 units

(a) *Group I*: 2 year-courses selected from Anthropology 1A–1B; Anthropology-Sociology 5A–5B; Economics 1A–1B; History 4A–4B, 7A–7B, 8A–8B; Mathematics, any 2 sequential courses, not including course C; Political Science 1, 2; Psychology 21, and 22 or 23; Public Health 5A–5B; Sociology 1A–1B.

- (b) *Group II*: one year-course or year sequence selected from Group IIA, or any combination of two semester courses from Group IIB.

Group IIA: Any foreign language literature course in translation; a year sequence of any foreign language; English 36A-36B; Music 2A-2B; Philosophy 2A-2B, 20-21.

Group IIB: Art 1A, 1B; any two semesters of a foreign language provided a minimum of 6 units has been completed in the same language.

The applicant who wishes to qualify for the degree of Bachelor of Science in addition to the degree of Doctor of Dental Surgery must complete satisfactorily a special project in the College of Dentistry and a thesis in the field of his major interest under the supervision of a faculty committee, and receive passing grades in 4 units of special instruction selected by the committee.

The College of Dentistry reserves the right to limit enrollment on the basis of scholarship, recommendations, and interviews.

### Admission to the Dental Hygiene Curriculum

*(Open to Women Only)*

Applicants for admission to the dental hygiene curriculum must have completed at least 60 units of college work with a scholarship average of at least grade C, including the requirements (2)-(5) listed below. Students planning to enter this curriculum should make this fact known at the time of their first registration. The student will find herself more adequately prepared if she has taken in high school the following subjects: English, 3 units; history, 1 unit; mathematics, 3 units (algebra, plane geometry, and trigonometry); chemistry, 1 unit; physics, 1 unit; foreign language, 3 or, preferably, 4 units).

#### (1) General University requirements:

##### Subject A

American History and Institutions (required for the bachelor's degree.

The examination in American History and Institutions may be taken in the College of Dentistry, but it is preferable to satisfy the requirement in the pre dental program. See page 36).

- |  |         |
|--|---------|
| (2) English of Speech.....   | 6 units |
| (3) Chemistry 1A, 8.....   | 8 units |
| (4) Zoölogy 1A-1B .....  | 8 units |
| (5) Either the degree of Associate in Arts from the University of California (or its equivalent), or the following program of courses: |         |

- (a) A year-course selected from each of the following groups:

Group I: Anthropology 1A-1B, Anthropology-Sociology 5A-5B, Economics 1A-1B, History 4A-4B, 7A-7B, 8A-8B, Political Science 1, 2, Sociology 1A-1B.

Group II: Psychology 21, 22, Public Health 5A-5B,  
Home Economics 11A-11B,

Group III: Philosophy, Art, Music, Literature, For-  
eign Language ..... 18-20 units

(b) Six additional units selected from any of the three  
groups listed under (a) ..... 6 units

(c) Electives ..... 12-16 units

### 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 field of concentration and to receive the A.B. degree at the end of the senior year, should select an alternative field and so

plan their courses that they may complete the alternative field 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 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 field of concentration 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 pre-professional training. 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.

\* This section applies both to the existing Medical School at San Francisco and to the newly created Medical School at Los Angeles which latter, however, will not be ready to admit first-year students to the professional curriculum before 1951.

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, 1949, first-year class must be filed with the Director of Admissions, University of California, Berkeley 4, between November 1, 1948, and April 1, 1949. 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

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\* 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; if the applicant is accepted and registers in the University, the fee will be paid by the government.



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 Speech 1A-1B; Chemistry 1A-1B (general inorganic chemistry), 6A (quantitative analysis), 8 (elementary organic chemistry); Physics 2A-2B (general physics); Zoölogy 1A, 1B, 4, and either 14 and 105, or 100; 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.

#### 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 degree of Bachelor of Library Science, 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 a college year of each of two modern languages (preferably French and German) are required for admission.

## COLLEGE OF BUSINESS ADMINISTRATION

THE COLLEGE OF BUSINESS ADMINISTRATION is a professional college of the University whose purpose is to provide for qualified students a well-balanced education for positions in business at the management and administrative levels. The general and specific requirements of the College are designed to furnish a broad preparation for careers of management, rather than a highly specialized proficiency in particular occupations. The lower division curriculum is intended to assist students to complete an adequate general education. The upper division curriculum consists of a basic program of professional education for business management plus specialization in one field. The basic program attempts to create an understanding of the operation of the business enterprise within the whole economy; to develop proficiency in the use of such tools of management as accounting, business law, statistical and economic analysis; and to provide knowledge of the principles of management in several functional fields. Upon completing the basic program, students undertake a minimum of four courses in their chosen field of specialization. Opportunity for specialization is offered in the fields of accounting, banking and finance, marketing, industrial management, office management, and general business.

Under the jurisdiction of the Graduate Division, the College of Business Administration administers a program leading to the degree of Master of Business Administration. This program affords opportunity for integration of business policies, investigative activities, and further specialization in an elective major. For further information about the graduate program in business administration, consult the ANNOUNCEMENT OF THE GRADUATE DIVISION, SOUTHERN SECTION, and the ANNOUNCEMENT OF THE COLLEGE OF BUSINESS ADMINISTRATION, LOS ANGELES.

*Advice to Students.* When a student receives notification of his admission to the University, he also receives an appointment with an adviser for one of the days immediately preceding enrollment in classes. The adviser will help him plan his program for the semester and may outline a tentative program for several semesters in advance. Throughout the academic year, a student may receive assistance from his adviser during regularly scheduled office hours.

*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 specific subject require-

ments in 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 College of Business Administration List of Courses will be accepted for credit toward the B.S. degree (for this List, see ANNOUNCEMENT OF THE COLLEGE OF BUSINESS ADMINISTRATION). A maximum of 6 units of electives aside from the preceding will be accepted toward the degree.

### REQUIREMENTS FOR DEGREES IN THE COLLEGE OF BUSINESS ADMINISTRATION

Changes in the undergraduate curriculum of the College of Business Administration were approved on May 13, 1947. Students who enroll after this date come under the provisions of the new requirements which are outlined below. Students who were enrolled at the time the new requirements became effective may elect to complete the work for either the degree of Associate in Arts or the degree of Bachelor of Science under the old requirements, provided that degree is obtained not later than June, 1949. All candidates for degrees after June, 1949, must meet the new requirements. Under the provisions of the effective date, if a student receives the degree of Associate in Arts in June, 1947, or later, he cannot become a candidate for the degree of Bachelor of Science under the old requirements, but is considered a new candidate for a new degree and must meet the new requirements. Information about the old requirements may be obtained at the Office of the Dean of the College, 250 Royce Hall.

#### Lower Division

#### REQUIREMENTS FOR UPPER DIVISION STANDING AND THE DEGREE OF ASSOCIATE IN ARTS

Upper division standing is granted to students who have completed at least 64 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 64 or more units of credit are given upper division standing, and subject shortages, if any, may be completed concurrently with requirements for the bachelor's degree.

The Associate in Arts Degree of the College of Business Administration is granted to students who have completed not less than 64 nor more than 90 units\* of college work with a grade-point average in all work done in the University of not lower than 1.00 (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

\* 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.

will not be counted as part of the 64 units. In addition, the last two semesters (24 units) must be completed in residence at the University and at least the final semester must be completed while enrolled in the College of Business Administration.

(a) *General University Requirements:*

<sup>1</sup>Subject A.

Military Science and Tactics, 6 units (men). Students in the Naval Unit will take, with appropriate adjustment of electives, 12 units of naval science instead of 6 units of military science.

Physical Education, 2 units (four semesters).

(b) *Foreign Language and Natural Science:*

A total of 16 units, including a minimum of 4 units of language and 4 units of science. Not less than 6 units of the requirement must be taken after matriculation:

(1) Foreign Language.—The language credit approved for this requirement must be taken in one language only. 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. No unit credit is given for a proficiency examination. Courses given in English by a foreign language department may not be applied on this requirement.

(2) Natural Science.—Without reducing the total number of units required for the degree of Associate in Arts or the bachelor's degree, each year of chemistry or physics completed in high school with grades of C or better will count as 3 units in satisfaction of this requirement. Not less than 3 units of laboratory science must be included. Courses taken to meet this requirement should be selected from the following list. (Courses marked with asterisks meet the laboratory requirement.)

High school chemistry\*

High school physics\*

\*Chemistry 2, 3 units\*

\*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\*

<sup>1</sup> The only exceptions to this requirement are noted on page 85 of this bulletin.

\* Chemistry 2 is not open for credit to students who have credit for Chemistry 2A and Chemistry 2A is not open for full credit to students who have credit for Chemistry 2.

\* Students who have taken or are taking Botany 1A will not receive credit for Biology 1.

\* Geology 2 is not open to students who have taken or are taking Geology 5 and Geology 5 is not open to students who have taken or are taking Geology 2.

(c) *Required Courses:*

Business Administration 1A-1B, 6 units (sophomores).

Economics 1A-1B, 6 units (sophomores).

English 1A, 3 units.

\*Speech 1A, 3 units.

\*Geography 5A-5B, 6 units.

\*Mathematics E and 2, 6 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, University of California, but will not be counted as a part of the 64 units.

*General Undergraduate Requirements:*

American History and Institutions, 4 units (University requirement).

Social Science, 6 units.

Outside electives, 12 units.

These general undergraduate requirements may be met at any time in the undergraduate program, either in the upper or lower divisions. Courses taken to meet the American History and Institutions requirement may also be used to satisfy the social science requirement, provided these courses appear on the approved list for both requirements (see pages 36-37). Courses taken to meet the outside elective requirement may be either upper or lower division courses and should be selected from the offerings of departments *outside the Department of Business Administration* chosen from the College of Business Administration List of Courses. Courses taken to meet the outside elective requirement may not include courses used to meet any other general University requirement or requirement of the College of Business Administration.

## SUGGESTED PROGRAM FOR THE FRESHMAN AND SOPHOMORE YEARS\*

FRESHMAN YEAR			
<i>Fall Semester</i>	Units	<i>Spring Semester</i>	Units
Geography 5A .....	8	Geography 5B .....	8
English 1A .....	8	Speech 1A .....	8
Mathematics E .....	8	Mathematics 2 .....	8
Science or Language and		Science or Language and	
Electives .....	8 or 5	Electives .....	8 or 5
Military or Naval Science .....	1½ or 8	Military or Naval Science .....	1½ or 8
Physical Education .....	1	Physical Education .....	1
	15½ or 16		15½ or 16

\* Students transferring into the College with 90 or more units may have this requirement waived at the discretion of the Dean. Substitute courses in English will ordinarily be required to obtain exemption.

\* Students transferring into the College with 90 or more units may have all or part of this requirement waived at the discretion of the Dean.

\* The 5-unit, one-semester, combination course, Mathematics 2E, will meet this requirement. This course is open only to students with not less than one and one-half years of high school algebra. Students with credit in Mathematics D, E, or 1 will receive only 3 units of credit for this course. Mathematics E is not open for credit to students who have credit for Mathematics D, 1, or 2; such students are automatically exempt from the Mathematics E requirement.

\* Students who except to major in accounting with a view to obtaining the C.P.A. certificate should consult the suggested program for accounting majors in the ANNOUNCEMENT OF THE COLLEGE OF BUSINESS ADMINISTRATION.

## SOPHOMORE YEAR

<i>Fall Semester</i>	Units	<i>Spring Semester</i>	Units
Business Administration 1A... 3		Business Administration 1B... 3	
Economics 1A ..... 3		Economics 1B ..... 3	
Social Science ..... 3		Social Science ..... 3	
Science or Language and Electives ..... 4 or 5		Science or Language and Electives ..... 4 or 5	
Military or Naval Science... 1½ or 3		Military or Naval Science... 1½ or 3	
Physical Education ..... 1		Physical Education ..... 1	
	16 or 16½		16 or 16½

As there is no requirement of military or naval science for women students, their elective units are appropriately increased. It will be observed that the lower division requirements in business administration differ mainly from those in other colleges of the University in prescribing a year of work in economics, in accounting, in mathematics, and in geography. The amount of elective units in the lower division is determined by the matriculation courses which may be applied on the foreign language-natural science requirement. Elective units should be chosen from the course offerings of other departments of the University which appear on the College of Business Administration List of Courses.

## Upper Division

## REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE

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

- (1) A minimum of 128 units of which at least 122 shall be in courses taken from the College of Business Administration List of Courses are required for the degree of Bachelor of Science. A candidate must have attained at least a C average or as many grade points as units attempted.
- (2) A candidate for the degree must be registered in the College of Business Administration while completing the final 24 units of work. This regulation applies both to students entering the College of Business Administration from another university and to students transferring from other colleges within this University.
- (3) Subsequent to receipt of the A.A. degree or after admission to the upper division, a candidate must complete at least 50 units of college work, of which at least 36 units must be in upper division courses (100 series) chosen from the College of Business Administration List of Courses.
- (4) Completion of the lower division requirements of the College of Business Administration is required of all candidates.
- (5) Completion of requirements (a) to (g) below is required of all candidates.

*\*(a) University requirement of American History and Institutions.*

\* For further information concerning the requirement in American History and Institutions, see page 36 of this bulletin.

- (b) *Social Science*:<sup>1</sup> At least 6 units in social science chosen from the following list (may be taken in either upper or lower division):
- Political Science 1, 3 units; 2, 3 units.
  - History 4A-4B, 6 units; 7A-7B, 6 units; 8A-8B, 6 units; 46, 3 units.
  - Psychology 21,<sup>2</sup> 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,<sup>3</sup> Economics 135.
  - Senior required course: Business Administration 100.
- (d) *Special electives in Business Administration and Economics*: Three units each from upper division business administration and economics courses other than those used to meet requirement (c) or (e). (May not include courses which are listed in the student's major.) General business majors may choose any upper division business administration course not used to meet requirement (c) or (e).
- (e) At least four courses aggregating not less than 10 units in one of the six following majors. The major must be started not later than the beginning of the next to the last semester before the date of graduation.
- (1) Accounting:<sup>4</sup> Business Administration 160B, 161, 162, 163, 165.
  - (2) Banking and Finance:
    - (a) two courses from Business Administration 131, 132, 133, and 139, and
    - (b) two courses from whichever two of the above group not selected and Business Administration 110, 116, 117, 145, and 163
  - (3) Marketing:<sup>5</sup> Business Administration 184, 185, 186; Economics 195.
  - (4) Industrial Management: Business Administration 121A, 121B, 124A, 125, 144, 153, 161.
  - (5) Office Management: Business Administration 125, 150, 151, 152, 154, 161.

<sup>1</sup> Courses taken to meet the American History and Institutions requirement may also be used in fulfilling the social science requirement, provided these courses appear on the approved list for both requirements.

<sup>2</sup> Students who plan to obtain a teaching credential should elect Psychology 21 and 22 or 23 as these courses are prerequisite to required courses in Education.

<sup>3</sup> Effective September, 1948, this course will be designated 180A.

<sup>4</sup> The course in accounting laboratory (Bus. Adm. 2A-2B) will be required of all accounting majors who graduate in June, 1949, or after; accounting majors who plan to graduate in June, 1949 should start this course not later than September, 1948.

<sup>5</sup> Effective September, 1948, this series of courses will include: Bus. Adm. 180B, 184, 185A, 185B, 186, and Econ. 195. See later pages of this bulletin for descriptions of these courses.



(6) General Business: One course each from any four of the following groups—

- (a) Business Administration 160B, 161, 162, 163, 165
- (b) Business Administration 131, 132, 133, 139
- <sup>a</sup>(c) Business Administration 184, 185, 186; Economics 195
- (d) Business Administration 121A, 121B, 124A, 125, 144, 153
- (e) Business Administration 150, 151, 152, 154
- (f) Business Administration 110, 116, 117, 145.

(f) All candidates for the degree of Bachelor of Science are required to take at least 12 units of electives *outside the Department of Business Administration* chosen from the College of Business Administration List of Courses. These electives may consist of either lower or upper division courses and may be taken at any time in the undergraduate program, but may not include courses used to meet any other general University requirement or requirement of the College of Business Administration.

(g) *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 under requirements (c), (d), and (e) above and any other upper division courses in business administration.
- (3) At least a C average in all subjects undertaken in the major (e) above.

*Summary of Unit and Grade-Point Requirements for the Bachelor of Science Degree:*

Lower division requirements.....	64 units with 64 grade points
Upper division requirements.....	64 units with 64 grade points
Total requirements for B.S. degree..	128 units with 128 grade points

*The upper division requirements are segregated as follows:*

General requirements .....	24 units
Special electives in business administration and economics .....	6 units
Major requirement .....	10-12 units
American History and Institutions, Social Science, outside electives and free electives <sup>a</sup> to total 128 units for the B.S. degree .....	22-24 units

## HONORS

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

<sup>a</sup> Effective September, 1948, this series of courses will include: Bus. Adm. 180B, 184, 185A, 185B, 186, and Econ. 195. See later pages of this bulletin for descriptions of these courses.

<sup>a</sup> A sufficient number of free elective units to meet the total of 128 required for the B.S. degree must be taken. At least 122 units must be in courses selected from the College of Business Administration List of Courses.

## COLLEGE OF AGRICULTURE

THE COLLEGE OF AGRICULTURE of the University of California offers at Los Angeles the plant science curriculum with the majors in subtropical horticulture, ornamental horticulture, and general horticulture leading to the degree of Bachelor of Science. The first two mentioned majors are not available on the other campuses where the College of Agriculture offers instruction. Graduate work is also offered at Los Angeles leading to the degrees of Master of Science and Doctor of Philosophy in horticultural science.

Students electing other majors in the plant science curriculum—agronomy, 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, food technology, 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 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 those offered at Los Angeles are requested to consult the PROSPECTUS OF THE COLLEGE OF AGRICULTURE (obtainable from the Office of the Dean) and the appropriate advisers in agriculture at Los Angeles.

Every student *must* consult his adviser each semester for guidance in meeting the requirements of the curriculum of his choice.

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, MAJORS IN SUBTROPICAL HORTICULTURE, ORNAMENTAL HORTICULTURE, AND GENERAL 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, University of California.

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 this 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 35.)

(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 36.

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

#### PLANT SCIENCE CURRICULUM

(a) Students must complete the following:

	Units
Chemistry (may include biochemistry) .....	16
Botany (including plant physiology) .....	12
Physics .....	6
Bacteriology .....	4
Economics .....	3
English or Speech .....	3
Genetics .....	4
Plant Pathology .....	4
Soils and/or Irrigation .....	6
Entomology .....	4
Zoölogy .....	3
Military or Naval Science and Physical Education .....	8-14
	<hr/> 73-79

(b) Students must also complete a major, the minimum requirement of which consists of 12 units of approved upper division courses in the field of the major.

#### 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 Minimum Program—Plant Science Curriculum

	Units First Semester	Units Second Semester
<i>Freshman Year</i>		
Military or Naval Science (for men) .....	1½-3	1½-3
Physical Education .....	½	½
Bacteriology 1 .....	..	4
Botany 1 .....	4	..
Chemistry 1A-1B .....	5	5
Physics 2A-2B .....	4	4
	<hr/> 15-16½	<hr/> 15-16½
<i>Sophomore Year</i>		
Military or Naval Science (for men) .....	1½-3	1½-3
Physical Education .....	½	½
Botany 6, 107 .....	4	4
Chemistry 10 or 6A, 8 .....	4-8	8
Subtropical Horticulture 2, 10 .....	3	2
Economics 1A .....	3	..
English or Speech .....	..	3
Elective .....	..	3
	<hr/> 15-17½	<hr/> 17-18½

There is no degree of Associate in Arts 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 will delay graduation beyond the normal four-year period.

### Junior and Senior Years

The additional required courses—Entomology 134, Ornamental Horticulture 140 (Plant Genetics); 6 units from Irrigation and Soils 105, 110A, and 126; Plant Pathology 120; and American History and Institutions—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 later pages of this bulletin.

Students should consult the major advisers concerning the 12 units required for the majors.

## 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** (obtainable from the Office of the Dean). 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 69).

## 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 Study-Lists Committee.
- (2) Students who, in the judgment of the Study-Lists Committee, 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 PROGRAMME**.

## COLLEGE OF ENGINEERING

THE COLLEGE OF ENGINEERING on the Los Angeles campus was established in November, 1944, under the terms of a special appropriation made by the State Legislature in the spring of 1943. Course offerings by the Department of Engineering were instituted in February, 1945.

At the present time, the curriculum for the senior year is not available on the Los Angeles campus. The fourth year may be completed on either the Davis or the Berkeley campus. The free and restricted electives may be chosen to fulfill the training requirements originally undertaken by the student. When the senior year is introduced on the Los Angeles campus the courses and the curricular arrangement will be based upon the principle of the complementary offerings of engineering in the University of California. Students will often find it distinctly advantageous to transfer to other campuses to take courses which fit into their plans and to study under the faculty members who are experts in a given field.

Almost all the courses of the first and second years in all engineering curricula of the University of California are available on the Los Angeles campus. The third year of a general curriculum is available as well as the third year of most of the options in civil, electrical, and mechanical engineering as published in the GENERAL CATALOGUE, DEPARTMENTS AT BERKELEY. Fourth-year engineering offerings will be instituted as conditions permit. Advanced studies on the graduate level are available to a limited number of qualified students.

Students whose requirements cannot be met on the Los Angeles campus should transfer to the Berkeley or Davis campus at the appropriate time.

The student is advised to study carefully the course offerings and curricular arrangements in order that he may achieve the kind of training he desires. For example, the general field "Agricultural Engineering" is so presented as to provide experiences with machines, structures, processes, and the application of electricity to the farm. The functions stressed are operations, and to a lesser degree, design, maintenance, and management. Other curricular arrangements will provide different combinations of training for function utilizing various engineering systems. Faculty advisers will provide counsel and assistance in curricular and professional matters.

The College of Engineering and the Bureau of Occupations cooperate to place graduates. Undergraduates often obtain off-term employment in engineering fields and many students are employed part time during their college residence. Students who are self-supporting are advised to proceed more slowly toward graduation than those who follow the regular schedule. Students who engage in part-time employment or extracurricular activities may plan to spend more than four years by securing permission to register for fewer units each semester.

## ADMISSION TO ENGINEERING

*Matriculation requirements.\** A statement concerning matriculation requirements will be found on pages 23-25. High school subjects prerequisite to college courses required in all engineering curricula include: plane geometry, 1 unit; algebra, 2 units; trigonometry,  $\frac{1}{2}$  unit; mechanical drawing, 1 unit; chemistry, 1 unit, or physics, 1 unit (both are desirable). Without this preparation it will be necessary for the student to take equivalent courses in college, thereby barring him from regular courses and delaying his graduation.

*Admission to the College of Engineering.* Satisfaction of the matriculation requirements admits the student to the University but not necessarily to the College of Engineering. Admission to the College of Engineering is based primarily on the results of an entrance examination. All persons applying for admission to the lower division must take the *Freshman Status Engineering Examination*.

A Junior Status Examination is given to all students just prior to completion of the sophomore year. Admission to all upper division courses and continuation in the College of Engineering is based on satisfactory completion of this examination and a consideration of the student's grades in required freshman and sophomore subjects. Each undergraduate student transferring to the College of Engineering at the junior level must also take the Junior Status Engineering Examination and his admission to the college will be based upon satisfactory completion of the examination and upon his grades in required freshman and sophomore subjects. Places and times for the examination may be obtained from the Dean of the College of Engineering.

*Advanced standing.* For general information, see page 27. Students transferring from other colleges and universities 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.

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 must be satisfactorily completed by all applicants for admission to advanced standing in the College of Engineering before acceptance in the third year of engineering, irrespective of the school or campus in which the student has completed the first two years.

*Intercampus transfer.* Application blanks may be obtained at the Office of Admissions. Transfer will be restricted to students who are in good standing (C average or better) and who can also present adequate reason for wishing to transfer.

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\* Enrollment in engineering courses is restricted to students registered at the University of California in the College of Engineering. A student registered in another college undertaking curricula in which engineering courses are prescribed will be admitted to these courses by petition approved by both Dean of his College and the Dean of the College of Engineering.

**CURRICULA IN ENGINEERING**

Students in the College of Engineering may elect to graduate subject to the jurisdiction of either the college on the Los Angeles campus or the college on the Berkeley campus. Because the senior year has not yet been established on the Los Angeles campus, all students (except those in agricultural engineering) must complete the required courses of the senior year on the Berkeley campus. Students in agricultural engineering must complete the senior year on the Davis campus.

Students completing the work for the degree under the jurisdiction of the College of Engineering on the Los Angeles campus will complete at least 136 units substantially in accordance with the curricula published on the succeeding pages. Agricultural engineering students will complete 142 units.

Students who wish to complete the work for the degree under the jurisdiction of the College of Engineering on the Berkeley campus must complete all of the requirements of that college noted in the **GENERAL CATALOGUE, DEPARTMENTS AT BERKELEY**. They may choose from the several curricula listed therein.

Each of the curricula leads to the 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. Fields of study may be selected in each curriculum.

Degree requirements may be completed in four years of residence. Students who give full time to University responsibilities must register for the number of units shown in the curriculum and option selected.

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**.

*Honors with the Bachelor's Degree.* In the College of Engineering students may receive honors with the bachelor's degree for high scholarship in the curriculum or for distinction in advanced work in any curriculum in the College of Engineering.

Students who in the judgment of the proper authorities display marked superiority may be recommended for the special distinction of highest honors.

**Berkeley Campus**

The following curricula apply to students who entered the freshman year in July, 1946, or later. Students who entered prior to this date should conform in general to the curricula in force at the time of entrance. Each candidate for the degree must exhibit a reasonable degree of accuracy and facility in the use of English. Remedial assignments may be made by the Dean of the College of Engineering when necessary.



Each curriculum consists of a group of subjects, the study of which gives adequate preparation for the beginning of professional engineering work in the designated field. The subjects and units involved in the several curricula are as follows:

(1) Subjects common to all curricula in engineering:	Units
Chemistry .....	8
Physics .....	12
Mathematics (including differential and integral calculus) ..	12
Analytic Mechanics and Strength of Materials .....	6
Applied Thermodynamics and Fluid Mechanics .....	6
Applied Electricity and Magnetism .....	3
Properties of Materials .....	3
Drawing and Graphics .....	4
Engineering Design .....	3
Engineering Economics .....	3
Electives .....	12

(2) Subjects characteristic of the several curricula. In addition to the subjects and units common to all curricula in engineering, the several curricula include at least the number of units in each of the subjects shown in the following table. Each curriculum requires the total number of units shown at the top of the column, the totals in all cases including military or naval science required of all male undergraduates. Students not required to study military or naval science may substitute other subjects aggregating the same number of units. Credit in physical education may be used for this purpose up to a maximum of four units.

	Units		Units
<b>Agricultural Engineering:</b> .....	184	<b>Mechanical Engineering:</b> ..	181
Mechanics, Thermodynamics, Fluid		Mechanics, Thermodynamics, Fluid	
Mechanics .....	6	Mechanics, Strength of Materials	11
Irrigation, Soil Science, Agronomy.	13	Mechanical Design and Manufac-	
Agricultural Machinery and Struc-		turing Processes.....	10
tures .....	17	Electrical Circuits and Machinery.	5
*Optional Subjects .....	18	*Optional Subjects .....	25
<b>Civil Engineering:</b> .....	186	<b>†Metallurgy:</b> .....	184
Mechanics, Strength of Materials,		Chemistry .....	5
Thermodynamics, Fluid Mechan-		Metallurgy .....	18
ics .....	18	*Optional Subjects .....	31
Hydraulic, Structural, and Trans-		<b>†Mining Engineering:</b> .....	184
portation Engineering .....	18	Chemistry .....	2
*Optional Subjects .....	30	Dynamics .....	3
<b>†Economic Geology:</b> .....	186	Mineralogy and Geology .....	18
Chemistry .....	2	Mining .....	10
Dynamics .....	3	Metallurgy .....	5
Mineralogy, Geology, and Paleon-		Analysis of Ores .....	6
tology .....	34	*Optional Subjects .....	10
Surveying and Map Drawing.....	6	<b>†Petroleum Engineering:</b> .....	184
*Optional Subjects .....	11	Chemistry .....	8
<b>Electrical Engineering:</b> .....	182	Mechanics, Thermodynamics, Fluid	
Mathematics .....	4	Mechanics .....	6
Mechanics, Thermodynamics, Fluid		Petroleum Technology and Econom-	
Mechanics, Strength of Materials	6	ics .....	16
Electrical Circuits and Machinery.	22	*Optional Subjects .....	24
*Optional Subjects .....	20	<b>Process Engineering:</b> .....	184
<b>Industrial Engineering:</b> .....	184	Chemistry .....	17
Mechanics, Thermodynamics, Fluid		Mathematics .....	4
Mechanics, Strength of Materials	10	Applied Thermodynamics and Fluid	
Electrical Circuits and Machinery.	5	Mechanics .....	10
Business Administration .....	15	Heat Transfer and Unit Operations	9
*Optional Subjects .....	24	Unit Processes .....	8
		*Optional Subjects .....	11

Detailed listing of courses satisfying the above subject requirements may be found in the GENERAL CATALOGUE, DEPARTMENTS AT BERKELEY, and the ANNOUNCEMENT OF THE COLLEGES OF ENGINEERING, BERKELEY AND LOS ANGELES.

\* To be chosen from sequences of scientific and professional courses giving emphasis to a particular phase of a general field.

† Students can complete no more than one year on the Los Angeles campus if the curriculum is to be completed in 8 semesters. Students who plan to specialize in metallurgy should enter the College of Engineering at Berkeley at the beginning of the freshman year if they wish to complete their work in 8 semesters.

# CURRICULA IN ENGINEERING

## Los Angeles Campus

### AGRICULTURAL ENGINEERING

#### First Year

(Applies to students who enter the College of Engineering after July, 1947.)

	Units First Semester	Units Second Semester
Subject A (if required) .....	..	..
Military or Naval Science .....	1½-3	1½-3
Physical Education .....	½	½
Mathematics 5A-5B .....	5	3
Chemistry 1A-1B .....	5	5
Physics 1A .....	..	3
Engineering 11A .....	..	2
Engineering 1FA .....	..	1
Engineering 2 .....	3	..
Engineering 48 .....	1	..

#### Second Year

(Applies to students who enter the College of Engineering after July, 1947.)

Military or Naval Science .....	1½-3	1½-3
Physical Education .....	½	½
Mathematics 6A-6B .....	3	3
Physics 1D-1C .....	3	3
Engineering 6 .....	3	..
Economics 1A-1B .....	3	3
Engineering 15A-15B .....	3	3
Engineering 12 .....	..	2
American History and Institutions .....	..	..
† Agricultural Engineering 49 .....	..	(6)
Electives .....	..	..

#### Third Year

(Applies to students who begin their junior work before July, 1949.)

Engineering 15AB .....	6	..
Engineering 102B .....	..	3
Engineering 105A-105B .....	3	3
Engineering 108B .....	..	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

\* Minimum program, 16 units.

† Agricultural Engineering 49 (6 units taken at Davis), a required summer course consisting of a study of engineering problems on typical California farms.

	Units First Semester	Units Second Semester
<i>Fourth Year (at Davis)</i>		
Agricultural Engineering 114 .....	3	..
Agricultural Engineering 113 .....	..	4
Agricultural Engineering 115 .....	3	..
Agricultural Engineering 130 .....	..	1
Mechanical Engineering 151 or Soil Science 110 .....	3	..
Mechanical Engineering 152 .....	..	3
Irrigation 120 .....	3	..
Soil Science 106 or 110 .....	..	4
Agonomy 1 .....	3	..
†Restricted Electives .....	..	3
Electives .....	2	2
	<hr/> 17	<hr/> 17

## CIVIL ENGINEERING

(The following curricula apply to students who must transfer to the Berkeley Campus. The curricula in civil, electrical, and mechanical engineering will be merged into one engineering curriculum by July 1, 1949 for those students who will graduate under the jurisdiction of the College of Engineering on the Los Angeles Campus.)

*First Year*

(Applies to students who enter the College of Engineering after July, 1947.)

	Units First Semester	Units Second Semester
Subject A (if required) .....	..	..
Military or Naval Science .....	1½-3	1½-3
Physical Education .....	½	½
Mathematics 5A-5B .....	5	3
Physics 1A .....	..	3
Chemistry 1A-1B .....	5	5
Engineering 1LA-1LB .....	2	2
Engineering 1FA-1FB .....	1	1
Engineering 48 .....	1	..
	<hr/> *	<hr/> *

† Appropriate upper division courses given on the Davis campus.

\* Minimum program, 16 units.

## Second Year

(Applies to students who enter the College of Engineering after July, 1947.)

	Units First Semester	Units Second Semester
Military or Naval Science .....	1½-3	1½-3
Physical Education .....	½	½
Mathematics 6A-6B .....	3	3
*Astronomy 3 .....	..	1
Engineering 8 .....	2	..
Engineering 2 .....	3	..
Physics 1D-1C .....	3	3
Geology 5 .....	..	4
Engineering 15A-15B .....	3	3
American History and Institutions .....	..	..
Electives .....	..	..
	<hr/> *	<hr/> *

## Third Year

(Applies to students who begin their junior work before July, 1949.)

Mathematics 110AB .....	4	..
Engineering 100A-100B .....	3	3
Engineering 104A-104B .....	2	2
Engineering 102B .....	3	..
Engineering 103 .....	..	3
Engineering 105A .....	3	..
Engineering 107A .....	..	3
Engineering 108B .....	2	..
Engineering 108F .....	1	..
Engineering 109 or 110 .....	..	3
Electives .....	..	4
	<hr/> 18	<hr/> 18

## Fourth Year (at Berkeley)

Civil Engineering or Irrigation including at least 4 units of laboratory .....	12	12
‡Restricted Electives .....	3	3
Electives .....	3	3
	<hr/> 18	<hr/> 18

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

\* Minimum program, 16 units.

‡ Appropriate upper division courses in engineering, mathematics, physics, chemistry, and business administration.

## ELECTRICAL ENGINEERING

(The following curricula apply to students who must transfer to the Berkeley Campus. The curricula in civil, electrical, and mechanical engineering will be merged into one engineering curriculum by July 1, 1949 for students who will graduate under the jurisdiction of the College of Engineering on the Los Angeles Campus.)

*First Year*

(Applies to students who enter the College of Engineering after July, 1947.)

	Units First Semester	Units Second Semester
Subject A (if required) .....	..	..
Military or Naval Science .....	1½-3	1½-3
Physical Education .....	½	½
Mathematics 5A-5B .....	5	3
Physics 1A .....	..	3
Chemistry 1A-1B .....	5	5
Engineering 1LA ..	2	..
Engineering 1FA .....	1	..
Engineering 2 .....	..	3
Engineering 48 .....	1	..
	<hr/> *	<hr/> *

*Second Year*

(Applies to students who enter the College of Engineering after July, 1947.)

Military or Naval Science .....	1½-3	1½-3
Physical Education .....	½	½
Mathematics 6A-6B .....	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 .....	..	..
Electives .....	..	..
	<hr/> *	<hr/> *

\* Minimum program, 16 units.

*Third Year*

(Applies to students who begin their junior work before July, 1949.)

	Units First Semester	Units Second Semester
Engineering 102B-181 .....	3	3
Engineering 105A-105B .....	3	3
• Engineering 108B-112 .....	2	3
Engineering 108F .....	1	..
Engineering 100A-100B .....	3	3
Engineering 104A-104B .....	2	2
Mathematics 110AB .....	4	..
Engineering 103 .....	..	3
Electives .....	..	1
	<hr/> 18	<hr/> 18

*Fourth Year (at Berkeley)*

Electrical Engineering 116A .....	3	..
Electrical Engineering 113 .....	..	2
Electrical Engineering 111A .....	3	..
Electrical Engineering 133 .....	2	..
Electrical Engineering 132A .....	2	..
Mechanical Engineering 107 .....	..	3
Electrical Engineering 126-127 .....	4	4
Mechanical Engineering 120 .....	..	3
‡ Restricted Electives .....	4	4
Electives .....	..	2
	<hr/> 18	<hr/> 18

° Students who intend to specialize in Electronics may take Physics 116-1160 in place of Engineering 112.

‡ Appropriate upper division courses in engineering, mathematics, physics, chemistry, and business administration.

## MECHANICAL ENGINEERING

(The following curricula apply to students who must transfer to the Berkeley Campus. The curricula in civil, electrical, and mechanical engineering will be merged into one engineering curriculum by July 1, 1949 for students who will graduate under the jurisdiction of the College of Engineering on the Los Angeles Campus.)

*First Year*

(Applies to students who enter the College of Engineering after July, 1947.)

	Units First Semester	Units Second Semester
Subject A (if required) .....	..	..
Military or Naval Science .....	1½-3	1½-3
Physical Education .....	½	½
Mathematics 5A-5B .....	5	3
Physics 1A .....	..	3
Chemistry 1A-1B .....	5	5
Engineering 11A .....	2	..
Engineering 1FA .....	1	..
Engineering 2 .....	..	3
Engineering 48 .....	1	..
	<hr/>	<hr/>
	*	*

*Second Year*

(Applies to students who enter the College of Engineering after July, 1947.)

Military or Naval Science .....	1½-3	1½-3
Physical Education .....	½	½
Mathematics 6A-6B .....	3	3
Physics 1b-1c .....	3	3
Engineering 15A-15B .....	3	3
Engineering 8 .....	2	..
Engineering 10B .....	..	2
Engineering 6 .....	..	3
American History and Institutions .....	..	..
Electives .....	..	..
	<hr/>	<hr/>
	*	*

\* Minimum program, 16 units.



## Third Year

(Applies to students who begin their junior work before July, 1949.)

	Units First Semester	Units Second Semester
Engineering 102B .....	3	..
Engineering 103 .....	..	3
Engineering 105A-105B .....	3	3
Engineering 100A-100B .....	3	3
Engineering 104A-104B .....	2	2
Engineering 108B .....	2	..
Engineering 108F .....	..	1
Mathematics 110A-110B .....	2	2
Electives .....	3	4
	<hr/> 18	<hr/> 18

## Fourth Year (at Berkeley)

Mechanical Engineering 124A-124B .....	3	3
Mechanical Engineering 131A-131B .....	4	4
Mechanical Engineering 113 .....	2	..
Mechanical Engineering 106A .....	..	3
†Restricted Electives .....	6	6
Electives .....	3	2
	<hr/> 18	<hr/> 18

† Appropriate upper division courses in engineering, mathematics, physics, chemistry, and business administration.

## TABLE OF CORRESPONDING ENGINEERING COURSE NUMBERS

*Los Angeles Campus**Berkeley Campus*

Engineering 11A, 1FA

Engineering 11B, 1FB

Engineering 2 and 6

Engineering 8

Engineering 10B

Engineering 12

Engineering 15A, 15B

[Engineering 15A (Los Angeles) has  
some material in common with En-  
gineering 35 (Berkeley)]

Engineering 100A, 100B

Engineering 101

Engineering 102B

Engineering 102O

Engineering 103

Engineering 104A, 104B

Engineering 105A, 105B

Engineering 106

Engineering 107A

Engineering 107G

Engineering 108B

Engineering 108F

Engineering 109

Engineering 110

Engineering 112

Engineering 113A

Engineering 120

Engineering 121

Engineering 125

Engineering 145

Engineering 277

Engineering 1A

Engineering 1B

Engineering 22, 23, and 24

{ Engineering 8 or part of  
Engineering 40

Part of Engineering 41

Agricultural Engineering 12

Mechanical Engineering 102A

Civil Engineering 108A

Electrical Engineering 100A, 100B

Irrigation 101

Mechanical Engineering 102B

Mechanical Engineering 170

Mechanical Engineering 103

Electrical Engineering 104A, 104B

Mechanical Engineering 105A, 105B

Mechanical Engineering 106A

Civil Engineering 107A

Civil Engineering 107G

Civil Engineering 108B

Civil Engineering 108F

Irrigation 102A, 103

Civil Engineering 102A

Electrical Engineering 106

{ Electrical Engineering 113 or

Mechanical Engineering 113

Mechanical Engineering 120

Mechanical Engineering 121

Civil Engineering 125

Mechanical Engineering 145

Mechanical Engineering 277

## COLLEGE OF APPLIED ARTS

THE COLLEGE OF APPLIED ARTS was established on the Los Angeles campus of the University of California in 1939 in order to meet the demand for training of a specialized character which has a technical or professional appeal, to organize certain scientific and scholarly studies into suitable curricula which may be applied in the fields of industry and the arts, and to provide curricula for the training of teachers in specialized areas.

The College now offers majors in art, music, and theater arts, leading to the degree of Bachelor of Arts; and majors in home economics and physical education, leading to the degree of Bachelor of Science. Interdepartmental curricula leading to the degree of Bachelor of Science are offered in apparel design, apparel merchandising, and dance. For properly qualified graduate nurses, curricula leading to the degree of Bachelor of Science are available in general nursing and in public health nursing.

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. See page 129.

By completing additional requirements set up by the School of Education, students may secure *teaching credentials* in connection with the majors in art, home economics, music, and physical education.

### 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 the University. In addition, the last two semesters (24 units) must be spent

\* 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.

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.*<sup>†</sup>

Subject A.<sup>‡</sup>

Military Science and Tactics, 6 units, or Naval Science, 12 units (men).

Physical Education, 2 units.

(B) *EITHER:*

(B<sub>1</sub>) *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<sup>§</sup> 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

(B<sub>2</sub>) *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\*.

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

Entomology 1\*.

<sup>†</sup> For information concerning exemption from these requirements apply to the Registrar.

<sup>‡</sup> 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 35.

<sup>§</sup> 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.

Geography 1A\*, 3, 5A\*.

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

Meteorology 3 or Geography 3.

Mineralogy 3A\*, 3B\*.

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

Zoölogy 1A\*, 1B\*, 4, 15\*, 16\*, 35\*.

OR

- (B,) 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, Speech:

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

Speech 1A-1B, 1A-3.

English 1A and Speech 1A or 3.

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

§ 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.

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, 3P, 3S), 4, 7.

Greek 1, 2.

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 1, 2.

Public Health 5A-5B.

Sociology 1A-1B.

### 5. Psychology:

Psychology 21, and 22 or 23.

### 6. Philosophy:

Philosophy 2A-2B, 20 and 21, 30 and 31.

### 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 "X," "XL," "XB," or "XSB.") 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, not to exceed six units of "300" 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 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 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.



- 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 PROGRAMME.

**ORGANIZED MAJORS AND CURRICULA**

A major or a curriculum consists of at least 36 units of coördinated 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, XSB, 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 Art History  
 Painting  
 Advertising Art  
 Industrial Design  
 Interior and Costume Design  
 Interior Design  
 Teaching

**MAJOR IN MUSIC**

General  
 Teaching

**MAJOR IN NURSING**

(Open only to qualified graduate nurses)  
 General  
 Public Health Nursing

**MAJOR IN HOME ECONOMICS**

Clothing  
 Dietetics  
 Food and Nutrition for Promotional Work  
 Food and Nutrition for Research Work  
 General  
 Teaching

**MAJOR IN PHYSICAL EDUCATION**

Health Education  
 Physical Therapy  
 Recreation  
 Teaching

**MAJOR IN THEATER ARTS**

Motion Pictures  
 Radio  
 Theater

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 bulletin.

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

Curriculum in Apparel Design  
 Curriculum in Apparel Merchandising

Curriculum in Dance

**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, 21A, 24, 32A-32B, Economics 1A-1B, Home Economics 1A, 7.

*The Major.*—Thirty-six units of coördinated upper division courses, including Art 101B, 183A-183B-183C, 187, Home Economics 161, 170, 175, 176A-176B, 177A-177B, 179A, and additional courses chosen from: Anthropology 140, 141, Art 147A-147B, 173, 175A-175B, 177, Business Administration 180A-180B, Economics 151, Psychology 138, 177, 180, 185, Theater Arts 168, and upper division English courses. 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, 32A-32B, Business Administration 1A, Economics 1A-1B, Home Economics 1A-7.

*The Major.*—Thirty-six units of coördinated upper division courses, including Art 101B, 183A-183C, Business Administration 120, 180A-180B, 185A, 186, Home Economics 161, 170, 175, and additional courses chosen from: Economics 151, 158, 170, History 131A-131B, Home Economics 107, 108, 176, Psychology 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 30 and 31, Physical Education 31, Psychology 21 and 22. Recommended: Chemistry 2, French 1, 2, Music 2A-2B, Zoölogy 15, 35.

*The Major.*—Thirty-six units of coördinated 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.

## 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

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 .....	$\frac{1}{2}$	$\frac{1}{2}$
Chemistry 2A .....	5	..
Bacteriology 1 .....	..	4
English 1A .....	3	..
English 1B or Speech 1A or 3 .....	..	3
†Electives .....	6	8
	<u>14<math>\frac{1}{2}</math></u>	<u>15<math>\frac{1}{2}</math></u>
<i>Second Year</i>		
Physical Education 26 .....	$\frac{1}{2}$	$\frac{1}{2}$
Zoölogy 15 .....	5	..
Zoölogy 16 .....	..	3
Zoölogy 35 .....	..	2
Year Course (Sociology 1A-1B recommended) .....	3	3
Year Course .....	3	3
Psychology 21 .....	3	..
†Electives .....	6	8
	<u>14<math>\frac{1}{2}</math></u>	<u>15<math>\frac{1}{2}</math></u>

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

	Units First Semester	Units Second Semester
<i>First Year</i>		
Subject A (if required) .....	..	..
Physical Education 26 .....	$\frac{1}{2}$	$\frac{1}{2}$
Chemistry 2 .....	3	..
Zoölogy 15 .....	..	5
English 1A-1B .....	3	3
Art 2A-2B .....	2	2
Speech 1A or 3 .....	3	..
American History and Institutions .....	3	3
Elective .....	..	2
	<u>14<math>\frac{1}{2}</math></u>	<u>15<math>\frac{1}{2}</math></u>

† Recommended: Economics 1A-1B, foreign language and courses to satisfy the requirement of American History and Institutions.

	Units First Semester	Units Second Semester
<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
	<hr/> 15½	<hr/> 15½

## PREOPTOMETRY CURRICULUM

The University offers a five-year program in optometry leading to the degree of Bachelor of Science at the end of the fourth year, and to the Certificate in Optometry and the Master of Optometry degree at the end of the fifth year. The first two years may be taken at Los Angeles; the last three 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, and three years of foreign language.

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 at Berkeley, which is prerequisite to admission to the School of Optometry. For further information see the ANNOUNCEMENT OF THE SCHOOL OF OPTOMETRY.

	Units First Semester	Units Second Semester
<i>First Year</i>		
Subject A (if required).....	..	..
Military or Naval Science.....	1½-3	1½-3
Physical Education .....	1	1
Chemistry 1A-1B .....	5	5
Speech 1A-1B .....	3	3
Foreign Language .....	4	4
Mathematics D or 1, 3A.....	3	3
	<hr/> *	<hr/> *

† Enrollment in the School of Optometry is limited. Candidates for admission to the first year (junior) class are accepted primarily on the basis of scholarship, particular emphasis being placed on the required subjects. In addition, each applicant will be required to take a professional aptitude test. Not more than five students will be accepted who have taken their preoptometry work outside of the State of California. These five students will be selected from states west of the Mississippi or from foreign countries not having optometry schools. Not more than one foreign applicant will be accepted each year. Applications for admission for any year must be filed with the University Admissions Director by May first of that year.

\* Normal total, 15 or 16 units. Many students find it advisable to attend Summer Session to avoid excess programs.

	Units First Semester	Units Second Semester
<i>Second Year</i>		
Military or Naval Science.....	1½-3	1½-3
Physical Education .....	½	½
Bacteriology 1 .....	..	4
Psychology 21, 22 .....	3	3
Zoölogy 15, 35 .....	5	3
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, Los Angeles, and Davis campuses of the University. The remaining three years are given at the Medical Center, San Francisco. Information concerning the courses offered in the College of Pharmacy will be found in the ANNOUNCEMENT OF THE COLLEGE OF PHARMACY which may be obtained from the Dean of the College of Pharmacy, Medical Center, San Francisco 22, California.

The following high school preparation is recommended:

English, 4 units; history, 1 unit; mathematics, 3½ units; chemistry, 1 unit; biology, 1 unit; German or French, 2 units; Latin, 1 unit; freehand drawing, 1 unit.

	Units First Semester	Units Second Semester
<i>First Year†</i>		
Subject A (if required)* .....	..	..
Physical Education .....	½	½
Military or Naval Science.....	1½-3	1½-3
Chemistry 1A-1B .....	5	5
Botany 1A .....	..	4
Zoölogy 1A-1B .....	4	4
English 1A-1B or Speech 1A-1B .....	3	3
† Mathematics .....	3	..
	—	—
	*	*

\* Normal total, 15 or 16 units. Many students find it advisable to attend Summer Session in order to avoid excess programs.

† 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 may 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.

‡ Students should have completed two years of algebra and one-half year of trigonometry in the high school. If these requirements have not been satisfied, equivalent courses (Mathematics C, D) must be taken. Students who have satisfied the high school requirements should take Mathematics 1, or 2, or 3A.

## PREPUBLIC HEALTH CURRICULUM

The University offers a four-year program in public health leading to the degree of Bachelor of Science. Options are available in the fields of sanitation, public health statistics, and premedical administration.

The high school preparation should include chemistry and trigonometry; physics and second-year algebra are recommended.

On the Los Angeles campus it is recommended that the first two years' work be taken in the College of Applied Arts, following the program outlined below. The last two years' work is given under the School of Public Health. For further information see the ANNOUNCEMENT OF THE SCHOOL OF PUBLIC HEALTH.

	<i>First Year</i>	Units First Semester	Units Second Semester
Subject A (if required)			
Physical Education .....		$\frac{1}{2}$	$\frac{1}{2}$
Military or Naval Science .....		$1\frac{1}{2}$ -3	$1\frac{1}{2}$ -3
†Chemistry 1A-1B .....		5	5
English 1A-1B or Speech 1A-1B .....		3	3
Psychology 21, 23 .....		3	3
*Mathematics C .....		..	3
†§Elective .....		3	..
		<hr/>	<hr/>
		*	*
	<i>Second Year</i>		
Physical Education .....		$\frac{1}{2}$	$\frac{1}{2}$
Military or Naval Science .....		$1\frac{1}{2}$	$1\frac{1}{2}$
Zoölogy 15 .....		5	..
Bacteriology 1 .....		..	4
Public Health 5A-5B .....		3	3
Social Science elective .....		3	3
†§Chemistry 8 .....		3	..
†§Physics 10 .....		..	3
		<hr/>	<hr/>
		*	*

† Majors in premedical administration should take Business Administration 1A-1B, Economics 1A-1B, but may omit Chemistry 1B, 8, Physics 10.

\* Mathematics C may be omitted if trigonometry completed in high school.

§ Majors in public health statistics should take Mathematics D, 8A-8B, but may omit Chemistry 8, Physics 10.

\* Normal program, 15 or 16 units.

## 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 Business Administration, Master of Education, Master of Science, Doctor of Philosophy, and Doctor of Education, to the Certificate in Social Welfare, 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 semester 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 others 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 master's degree 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 necessary 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, chemistry, engineering, home economics, horticultural science, oceanography, and physical education, in which the degree of Master of Science is given, and business administration, in which the degree of Master of Business Administration is given. Work is offered also in the School of Education leading to the degree of Master of Education.

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

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

*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

\* At Scripps Institution of Oceanography, La Jolla.

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.

*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 foreign language (other than that of the major subject, if the major is a foreign language) is required of each candidate for the Master of Arts Degree and for the Master of Science Degree in chemistry and in oceanography; for other master's degrees the foreign language requirement is optional with the major department. This requirement must be satisfied before the student is advanced to candidacy. The department of the candidate's major must approve the language selected. 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 Gradu-

ate 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 coördinate 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 1948-1949.* The fields of study open to candidates for the degree of Doctor of Philosophy are chemistry, economics, engineering, English, geography, geology, Germanic languages, history, mathematics, meteorology, microbiology, music, oceanography, philosophy, physical-biological science, physics, plant science (including botanical science and horticultural science), political science, psychology, Romance languages and literature, 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 two foreign languages 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. The department of the candidate's major and the Dean of the Graduate Division must approve the languages selected, which should have a clear bearing on the candidate's field of research. The examinations are to be conducted by the language departments 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. Statement of such intention should be made in duplicate on Form 1, which is available at the Office of the Dean of the Graduate Division. One copy of the form should be filed with the department or interdepartment group of the student's field of study and the other with the Dean.

*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.

*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. Nomination of the doctoral committee should be made on Form 2, which is available at the Graduate Division office. This committee shall consist of not fewer than five members, three of whom shall be from the department of the candidate's major and two from a department or departments other than the major. The doctoral 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.

*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.

The qualifying oral examination is never open to the public. The report on the qualifying examinations should be made on Form 3, which is available at the Graduate Division office. The report form must be signed by the members of the doctoral committee.

*Advancement to candidacy.* Upon receipt of the report on the qualifying examinations an application form for advancement to candidacy (Form 4) will be sent to the candidate. 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, both on bond paper) 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. The report on the final examination should be made on Form 5, which is available at the Graduate Division office. The report form must be signed by the members of the doctoral committee.

## 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
14. Supervising School Budgets.

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 elementary curriculum including an interdepartmental field of concentration, or a departmental field of concentration 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 offers courses leading to the degree of Bachelor of Science (with options in the respective fields of sanitation, public health statistics, and premedical administration) and a number of courses that carry credit toward the advanced degrees. The graduate program is administratively centered in the School of Public Health at Berkeley.

### BACHELOR OF SCIENCE DEGREE

*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 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 133.)

*Requirements:* Candidates for the degree of Bachelor of Science must have completed at least 120 units of college work, of which at least the last 24 units 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 36.)

For upper division course requirements for the Bachelor of Science degree, students should consult the Department of Public Health.

### GRADUATE DEGREES

(Master of Public Health; Doctor of Public Health)

The Department of Public Health at Los Angeles offers courses in the University's graduate program in public health, but does not offer the full curriculum leading to a graduate degree. However, graduate students may be enrolled on this campus for special work or for work constituting a part of the program leading to either the Master of Public Health or the Doctor of Public Health degree. All applications for graduate study in public health should be addressed to the Dean of the School of Public Health, University of California, Berkeley 4.

## SCHOOL OF MEDICINE

The School of Medicine on the Los Angeles campus is in the process of organization and planning. It is estimated that the Medical School and Hospital building program will not be completed before 1951. Regular undergraduate medical students will not be accepted until these facilities are available.

Students who are beginning their premedical work and planning to enroll eventually in the School of Medicine at Los Angeles should meet the requirements of the University of California School of Medicine at San Francisco. The two medical schools of the University of California will have the same admission requirements.

Facilities are available for a limited number of students to do research which might be accepted for fulfilling the thesis requirements toward graduate work in other departments of the University. Students are referred to the Office of the Graduate Division for further information.

The School of Medicine is sponsoring a wide choice of postgraduate medical refresher courses, given without credit under University Extension. These courses are open to qualified doctors of medicine.

## COURSES OF INSTRUCTION OFFERED IN THE DEPARTMENTS AT LOS ANGELES FOR THE FALL AND SPRING SEMESTERS, 1948-1949

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 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), Los Angeles.

*Letters and Science List.*—Agricultural Economics 101A, 116, all undergraduate courses in botany, Entomology 1, 134, Irrigation and Soils 110A, Plant Pathology 120. For regulations governing this list, see page 69.

*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.*—Four majors are offered on the Los Angeles campus, the majors in general horticulture, subtropical horticulture and ornamental horticulture in the plant-science curriculum of the College of Agriculture (for requirements see sections under the College of Agriculture and the Divisions of Subtropical Horticulture and Ornamental 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 147).

Botany (see page 166).

Entomology (see page 225).

Irrigation and Soils (see page 263).

Ornamental Horticulture (see page 299).

Plant Pathology (see page 324).

Subtropical Horticulture (see page 354).

**AGRICULTURAL ECONOMICS**

A Division of the Department of Agriculture

**ROY J. SMITH, Ph.D.**, Assistant Professor of Agricultural Economics.

**KENNETH D. NADEN, M.S.**, Lecturer in 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. Naden**

Lectures and discussions, three hours. Three field trips to be arranged.

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**

Lectures and discussions, three hours.

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**

Lectures and discussions, three hours. Three field trips to be arranged.

The place, purpose, and scope of organization; community and farm basis; farm enterprise; selecting farms; planning and equipping; capital needs; earnings.

**ANTHROPOLOGY AND SOCIOLOGY**

\*RALPH L. BEALS, Ph.D., Professor of Anthropology.

HARRY HOLJER, Ph.D., Professor of Anthropology (Chairman of the Department).

LEONARD BLOOM, Ph.D., Associate Professor of Sociology.

CONSTANTINE PANUNZIO, Ph.D., Associate Professor of Sociology.

JOSEPH B. BIRDSSELL, Ph.D., Assistant Professor of Anthropology.

GEORGE WALTON BRAINERD, Ph.D., Assistant Professor of Anthropology.

WALTER R. GOLDSCHMIDT, Ph.D., Assistant Professor of Anthropology and Sociology.

EDWIN M. LEMERT, Ph.D., Assistant Professor of Sociology.

WILLIAM S. ROBINSON, Ph.D., Assistant Professor of Sociology.

E. GORDON ERIKSEN, Ph.D., Instructor in Sociology.

WILLIAM LESSA, Ph.D., Instructor in Anthropology.

PHILLIP SELZNICK, Ph.D., Instructor in Sociology.

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VIRGINIA ROEDIGER JOHNSON, Ph.D., Research Associate in Anthropology.

ESHREV SHEVKY, Ph.D., Research Associate in Sociology.

RALPH H. TURNER, A.B., Lecturer in Sociology.

ABRAHAM KAPLAN, Ph.D., Assistant Professor of Philosophy.

*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 69.

**FIELD OF CONCENTRATION IN ANTHROPOLOGY**

*Preparation.*—Required: Anthropology 1A-1B, Sociology 1A-1B (Anthropology and Sociology 5A-5B may be substituted for Anthropology 1B and Sociology 1A-1B). Statistics 1, and 5 to 6 units chosen from psychology, geography, history, biology, zoölogy, or geology (this requirement can normally be satisfied in the meeting of general college requirements), and fulfillment of the general requirements of the University and the College of Letters and Science.

*The Field of Concentration.*—Thirty upper division units distributed as follows:

1. Eighteen upper division units of anthropology, including courses 101, 103, 125, and 9 additional units selected from anthropology, and Linguistics and General Philology 170 and 171.

2. Six units chosen from Sociology 118A-118B, 142, 143, 144, 145, 186, 189, 190.

3. Six additional upper division units, chosen in accordance with the student's special interests and approved by the adviser, from one of the following groups: sociology, geography, psychology, geology, zoölogy, history, Linguistics and General Philology 170 and 171.

\* Absent on leave, 1948-1949.

**FIELD OF CONCENTRATION IN SOCIOLOGY**

*Preparation.*—Required: Sociology 1A-1B or 101, Anthropology 1A-1B (Anthropology and Sociology 5A-5B may be substituted for Anthropology 1B and Sociology 1A-1B). Psychology 21-22 or 101, Statistics 1, and fulfillment of the general requirements of the University and the College of Letters and Science. It should be noted that the college requirements in social science and biological science are normally fulfilled by the requirements for the major. Recommended: Philosophy 30, 31.

*The Field of Concentration.*—Thirty upper division units distributed as follows:

1. Eighteen upper division units in sociology. Students planning any professional career in sociology should include course 118A-118B.
2. Anthropology 125 and 3 units from 101, 105, 139, 141, 147.
3. Six additional upper division units selected with the approval of the adviser from one of the following groups: anthropology; Psychology 126, 134, 145A-145B, 147; economics; political science; history; philosophy; geography.

*Candidates for the General Secondary Credential.*—The undergraduate requirements for a teaching major in social science may be fulfilled by completing the preparation, and items 1 and 2 for the field of concentration in anthropology or items 1 and 2 for the field of concentration in sociology and in addition completing a year lower division course in history, and 6 upper division units in history selected from courses 111A-111B, 121A-121B, 142, 143, 144, 145, 153A-153B, 154, 157, 162A-162B, 171, 172, 173, 174.

*Graduate Work.*—Work leading toward the M.A. and Ph.D. degrees is offered with concentration in one discipline if desired. For details of requirements for the degrees consult the departmental adviser.

*Social Welfare.*—Students whose primary interest is in social welfare should normally fulfill the requirements of the Curriculum in Presocial Welfare (see page 85). Students planning on graduate training in social welfare should consult the announcement of the Department of Social Welfare (see page 345).

**ANTHROPOLOGY AND SOCIOLOGY**

**LOWER DIVISION COURSE**

**5A-5B. Introduction to Culture and Society. (3-3) Yr.**

Lectures, three hours; quiz, one hour. Mr. Goldschmidt in charge

The nature and development of culture and a survey of the basic social institutions both in primitive and modern culture, with emphasis on the manner in which society meets basic human needs and patterns inter-personal relationships.

Fulfills prerequisite requirements that are filled by Anthropology 1B and Sociology 1A-1B. Not open for credit to students having credit for these courses.

**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.

**101. Ethnology. (3) I, II.**

Mr. Lessa

Major theories of culture; survey of principal culture types and their distribution; discussion of ethnological problems.

**103. Culture History. (3) II.**

Mr. Brainerd

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.**

Mr. Birdsall

An introductory survey of the Indians of North and South America; origins, languages, civilizations, and history.

**106. Archaeology of North America. (3) II.**

Mr. Brainerd

Prehistory of North American Indians; prehistoric culture areas; relations with historic Indians.

**\*110. Language and Culture. (3) I.**

Mr. Hoijer

Language as a cultural phenomenon; the relations of linguistic processes to cultural processes; language as a means of communication and as a system of symbols; the interrelations of language and culture. Knowledge of linguistics is not required.

**125. Comparative Society. (3) I, II.**

Mr. Goldschmidt, Mr. Lessa

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.

**127. Primitive Art. (3) I.**

Mr. Brainerd

Prehistoric, primitive, and barbaric art.

**\*130. Literature of Pre-literate Peoples. (3) II.**

Mr. Hoijer

Analysis and classification of literary forms found among pre-literate peoples; the content of primitive literature in relation to other aspects of culture; the role of literature and the storyteller in pre-literate societies.

**139. Peoples of Africa. (3) I.**

Mr. Lessa

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. Brainerd

Aztecs, Mayas, Incas, and their predecessors; origins, archaeology, traditions, history; social and political systems; religion; art and architecture; intellectual achievements.

\* Not to be given, 1948-1949.



**\*141. Indians of Modern Mexico. (3) I.**

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) I.**

Mr. Birdsell

The aboriginal civilizations of Australia, Malaysia, Melanesia, Micronesia, and Polynesia in prehistoric and modern times; changes arising from European contact and colonization.

**151. The Genetics of Race. (3) II.**

Mr. Birdsell

Prerequisite: Anthropology 1A.

A general survey of the methods and problems of racial classification with emphasis upon the genetic approach; the living peoples of the world; processes and products of race mixture.

**195. Field Course in Archaeological Method. (1) II.**

Mr. Brainerd

Prerequisite: consent of the instructor.

Lectures, museum preparation, and week-end excavations. Will require all day Saturday throughout the semester or equivalent time if week-end trips are taken to greater distances than can be reached in a single day.

**199A-199B. Special Problems in Anthropology. (1-4; 1-4) Yr.**

Prerequisite: the consent of the instructor. Mr. Goldschmidt in charge

**GRADUATE COURSES**

**\*205A-205B. Theory and Method of Anthropology; Seminar. (2-2) Yr.**

Mr. Beals

**256A-256B. Comparative Social Institutions. (2-2) Yr.**

Mr. Goldschmidt

**\*257A-257B. Problems in Cultural Anthropology; Seminar. (2-2) Yr.**

Mr. Beals

**\*260A-260B. Characteristics of American Culture; Seminar. (2-2) Yr.**

Mr. Goldschmidt

**269A-269B. Problems in Archaeology; Seminar. (2-2) Yr.**

Mr. Brainerd

**271A-271B. Linguistic Analysis. (2-2) Yr.**

Mr. Hoijer

**273A-273B. Seminar in Human Genetics. (2-2) Yr.**

Mr. Birdsell

**292A-292B. Research in American Indian Languages. (2-2) Yr.**

Prerequisite: Linguistics and General Philology 170, 171. Mr. Hoijer

**299A-299B. Research in Anthropology. (1-4; 1-4) Yr.**

Mr. Hoijer in charge

**RELATED COURSES IN ANOTHER DEPARTMENT (See page 264)**

**Linguistics and General Philology 170. Introduction to Linguistics. (3) I.**

Mr. Hoijer

**Linguistics and General Philology 171. Introduction to Phonetics. (3) II.**

Mr. Hoijer

\* Not to be given, 1948-1949.

**SOCIOLOGY**  
**LOWER DIVISION COURSE**

**1A-1B. Introductory Sociology. (3-3) Yr.**

The Staff

1A: lectures, three hours.

1B: lectures, two hours; quiz, one hour.

**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. Turner

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. May not be counted as fulfilling the requirements of the field of concentration.

**118A-118B. Quantitative Methods. (3-3) Yr.**

Mr. Robinson

Prerequisite: courses 1A-1B or 101, and Statistics 1, Economics 40, or the consent of the instructor.

The application of statistical procedures to sociological data. The methods of collection and organization of quantitative data.

**120. Social Maladjustment. (3) I, II. Mr. Lemert, Mr. Erickson, Mr. Turner**

Selected problems in social and societal maladjustment.

**121. Social Processes. (3) I, II.**

Mr. Panunzio

Systematic study of the genesis, formation, structure, functioning of groups; the associational and dissociational processes, their forms, means, functions, and products.

**122. Social Change. (3) I.**

Mr. Robinson

Prerequisite: courses 1A-1B or 101.

A study of theories of social change; analysis of factors involved and their relevance to contemporary trends.

**142. Marriage and the Family. (3) I, II.**

Mr. Selznick, Mr. Turner

Prerequisite: upper division standing.

The marriage-family system; development, modern functions, characteristics, and maladjustments.

**143. Urban Sociology. (3) I.**

Mr. Erickson

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 Society. (3) I.**

Mr. Goldschmidt

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) II.**

Mr. Erickson

Prerequisite: 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.

**168. Sociology and Social Thought. (3) I.**

Mr. Selznick

Survey of major attempts in the history of ideas to understand the nature of man and society; the relation of this intellectual background to the development of sociological theory.

**169. Ethical Problems of Social Organization. (3) II.**

Mr. Kaplan, Mr. Selznick

Prerequisite: upper division major in social science or philosophy, or consent of the instructor.

Logical and sociological analysis of problems and conflicts in the functioning of social organizations.

**181. The Sociology of Dependency. (3) I, II.**

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) I.**

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. After 1950 may not be counted toward completion of the major in sociology.

**186. Population. (3) II.**

Mr. Robinson

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. Racial and Cultural Minorities. (3) I.**

Mr. Bloom

Prerequisite: course 1A-1B or 101, and senior standing.

A survey of the position of the chief racial, religious, and national minorities in continental United States with comparative reference to Brazil, Hawaii, and other areas. Examination will be made of the development, operation, and effects of such policies and doctrines as selective immigration, assimilationism, ethnic pluralism, and racism.

**190. American Ethnic Problems. (3) II.**

Mr. Bloom

Prerequisite: course 1A-1B or 101, and senior standing.

A topical study with special reference to problems of southern California pertaining to the "visible" ethnic groups such as the Japanese, Mexican, and Negro; the sources and characteristics of the populations and their urbanization and acculturation. An examination of the derivations and effects of segregation, discrimination, and programs of amelioration as they operate in various localities. Exercises in the analysis of differential status and social stratification.

**199A-199B. Special Problems in Sociology. (1-4; 1-4) Yr.**

The Staff (Mr. Robinson 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
251. Social Control. (2) I.	Mr. Lemert
252. Problems in Social Planning. (2) II.	Mr. Lemert
256A-256B. Demography: Theory, Method, and Policy. (2-2) Yr.	Mr. Robinson
261A-261B. American Ethnic Minorities. (2-2) Yr.	Mr. Bloom
*253A-253B. Quantitative Sociological Research; Seminar. (2-2) Yr.	Mr. Robinson
Prerequisite: the consent of the instructor.	
Adequate grounding in statistics will be necessary.	
299A-299B. Research in Sociology. (1-4; 1-4) Yr.	Mr. Bloom

\* Not to be given, 1948-1949.

## 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.

E. CLINTON ADAMS, M.A., Assistant Professor of Art.

LAURA F. ANDRESON, M.A., Assistant Professor of Fine Arts.

WILLIAM BOWNE, M.A., Assistant Professor of Art.

ANNITA DELANO, Assistant Professor of Fine Arts.

JOSEPH WILLIAM HULL, M.A., Assistant Professor of Art.

CLARA BARTRAM HUMPHREYS, M.A., Assistant Professor of Fine Arts.

ARCHINE FETTY, M.A., Assistant Professor of Fine Arts.

MARGARET H. RISWOLD, B.E., Assistant Professor of Fine Arts.

MARJORIE HARRIMAN BAKER, B.E., Instructor in Art.

JACK DONALD STOOPS, B.E., Instructor in Art.

FREDRICK G. STUSSY, M.A., Instructor in Art.

NATALIE WHITE, M.A., Instructor in Art and Supervisor of Training, Art.

DOROTHY BROWN, B.A., Lecturer in Art.

KENNETH G. KINGREY, M.A., Lecturer in Art.

MARGARET T. LEOKY, Lecturer in Art.

JOHN WILLIAM LOVE, M.A., Lecturer in Art.

ANNIE C. B. McPHAIL, M.A., Lecturer in Fine Arts.

GORDON NUNES, M.A., Lecturer in Art.

JOSEPHINE P. REFS, M.A., Lecturer in Art.

MARYBELLE OLIVE SCHMIDT, B.A., Lecturer in Art.

ROBERTA S. SPOTTS, B.A., Lecturer in Art.

JOY E. STANLEY, B.A., Lecturer in Art.

MADELEINE BOYCE SUNKES, B.E., Lecturer in Art.

## College of Applied Arts

*Preparation for the Major.*—Courses 1A, 1B, 2A, 2B, 4A, 4B, 14A, and 10 units of required prerequisites for the chosen major.

*The Major.*—Thirty-six units of coördinated upper division courses which may be taken in one of five specified majors:

(1) *Major in Appreciation and Art History.*

Courses 101A, 101B, 121A-121B, 131A, 131B, 144A, 161A-161B, 164A; and 12 units to be approved by the departmental adviser.

(2) *Major in Painting.*

Courses 121A-121B, 134A-134B, 144A-144B, 164A-164B, 174A-174B; and 16 units to be approved by the departmental adviser.

(3) *Major in Advertising Art.*

Courses 134A, 135, 144A, 155, 164A-164B, 165A-165B, 174A, 175A-175B; 4 units selected from Art 121A, 121B, 131A, 131B, 161A, 161B; 10 units to be approved by the departmental adviser.

**(4) 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.

**(5) Major in Interior 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.

**(6) Major in Interior Design.**

Courses 101A, 117A, 127A, 132A-132B, 147A, 156A-156B, 186A-186B; and 16 units selected from 117B, 121A, 121B, 127B, 131A, 147B, 161A, Home Economics 161, Business Administration 120.

**(7) Major in Teaching of Art.**

Courses 117A, 121A-121B, 127A, 134A, 155, 156A, 173 or 183A, 180, 370A, 370B; and 14 units to be approved by the departmental adviser.

### College of Letters and Science

**Letters and Science List.**—Courses 1A-1B, 2A, 2B, 4A, 4B, 21A, 21B, 34A, 34B, 42, 121A-121B, 131A, 131B, 134A-134B, 144A, 144B, 161A-161B, 164A-164B, and 174A-174B, 180, are included in the Letters and Science List of Courses. For regulations governing this list, see page 69. 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 134. 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. Additional departmental requirements should be obtained from the departmental adviser.

### LOWER DIVISION COURSES

- |  |             |
|--|-------------|
| <b>1A. The Appreciation of Art. (2) I, II.</b>   | Mrs. Baker  |
| <b>1B. Modern Art. (2) I, II.</b>  | Mr. Bowne   |
| Survey of contemporary trends, with a background in the history of art.  |             |
| <b>2A. Art Structure. (2) I, II.</b>   | Mrs. Baker  |
| Fundamental course in creative design and color harmony. Color theory.   |             |
| <b>2B. Art Structure. (2) I, II.</b>   | Mr. Stoops  |
| Prerequisite: course 2A.   |             |
| Basic study of the elements of art as related to two-dimensional decorative design.  |             |
| <b>4A. Perspective Drawing. (2) I, II.</b>   | Mr. Hull    |
| <b>4B. Freehand Drawing. (2) I, II.</b>  | Mr. Stussy  |
| Objective drawing of natural forms from observation and memory.  |             |
| <b>14A. Still-Life Painting. (2) I, II.</b>  | Mrs. Brown  |
| Prerequisite: courses 1B, 2B, 4A, 4B.  |             |
| The techniques of water-color painting; the problems of composition in painting; still life as a painting subject; light and its effect on form. |             |
| <b>14B. Rendering in Water Color and Related Media. (2) I, II.</b>   | Mrs. Spotts |
| Prerequisite: course 4B.   |             |

**15. Lettering—Layout. (2) I, II.**

Prerequisite: course 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 make-up.

**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.**

Prerequisite: courses 1A, 1B, 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) I, II.**

Miss McPhail

A basic simplified study of the proportions of the human figure with variations as used in the apparel industry

**27A—27B. Crafts Workshop. (2—2) Yr. Beginning either 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.**

Prerequisite: course 2B.

Mrs. Sunkees, Mr. Stoops

Further experience in color and design.

**34A—34B. Design in Painting. (2—2) Yr. Beginning either semester.**

Prerequisite: courses 1A, 1B, 2B, 4B.

Mr. Adams, Mr. Nunes

The structure of painting, analysis of composition and design in painting; principles of abstract and imaginative painting. Media: water color and gouache.

**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.

**44. Life Drawing. (2) I, II.**

Mr. Stussy

Prerequisite: course 4B.

**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 semester.**

Prerequisite: courses 1A, 1B, 2A, 2B.

Practice in the various methods of building pottery; glazing; firing.

- 121A-121B. Survey of the History of Art.** (2-2) Yr. Miss Delano
- 127A. Bookbinding.** (2) I, II. Mrs. Lecky  
Prerequisite: courses 1A, 1B, 2A, 2B.  
Practical work in bookbinding, using various types of book construction and binding materials.
- 127B. Bookbinding.** (2) I, II. Mrs. Lecky  
Prerequisite: course 127A.  
A continuation of course 127A.
- 131A. History of Architecture and Sculpture.** (2) I. Mr. Hull
- 131B. History of Painting.** (2) II. Mr. Hull
- 132A-132B. Design for Industry.** (2-2) Yr. Miss Delano  
Prerequisite: courses 14A, 14B.  
Study of materials, tool processes, and functional design of industrial products.
- 134A. Landscape Painting.** (2) I. Miss Delano  
Prerequisite: courses 14A, 34B.  
Medium: water color.
- 134B. Landscape Painting.** (2) II. Miss Delano  
Prerequisite: courses 134A, 144A.  
Medium: oil.
- 135. Illustration.** (2) I, II. Miss McPhail  
Prerequisite: courses 34B, 44.
- 144A. Still-Life Painting.** (2) I. Mr. Bowne  
Prerequisite: courses 14A, 34B.  
Medium: oil.
- 144B. Figure Painting.** (2) II. Mr. Bowne  
Prerequisite: courses 44, 144A.  
Medium: oil.
- 147A. Weaving.** (2) I, II. Mrs. Riswold  
Prerequisite: courses 1A, 1B, 2A, 2B.  
History and development of weaving; experience with techniques and processes.
- 147B. Weaving.** (2) II. Mrs. Riswold  
Prerequisite: course 147A.  
A continuation of course 147A.
- 155. Poster Design.** (2) I, II. Mr. Kingrey  
Prerequisite: courses 15, 34B.  
Intensive study and practice of all forms of poster design.
- 156A. Interior Design.** (2) I, II. Mrs. Fetty  
Prerequisite: courses 2B, 4A, 21B, 32B.  
Lectures, laboratory, and demonstrations.  
The consideration of the home as a unit; the arrangement of garden, house, floor plan, and furniture as functional and decorative problems.



- 156B. Interior Design. (2) II.** Mrs. Fetty  
Prerequisite: course 156A.  
The study of the historical periods in relation to interior design; adaptation, and original design.
- 161A-161B. Oriental Art. (2-2) Yr.** Mr. Wright  
Selected problems from phases of Oriental art.
- 164A-164B. Advanced Life Drawing. (2-2) Yr.** Mr. Bowne  
Prerequisite: course 44.
- 165A. Design for Advertising. (2) I.** Mr. Kingrey  
Prerequisite: courses 15, 34B, 44.  
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.
- 173. Costume of the Theater. (2) I.** \_\_\_\_\_  
The decorative, historical, and psychological aspects of stage costume.
- 174A. Painting Methods and Materials. (2) I.** Mr. Adams  
Prerequisite: course 34B.  
The physical properties of the artist's materials, and the history of their use in painting. Paint chemistry. Comparative study of the various painting media.
- 174B. Advanced Painting. (2) II.** Mr. Adams  
Prerequisite: courses 14A, 34B, 44, 174A.  
Medium: egg tempera.
- 175A. Fashion Illustration. (2) I.** Miss Schmidt  
Prerequisite: courses 15, 34B, 44.  
Study of rendering techniques and of media for fashion-advertising purposes.
- 175B. Fashion Illustration. (2) II.** Miss Schmidt  
Prerequisite: course 175A.  
Application of fashion illustration to specific advertising problems: newspaper, magazine, billboard, brochure.
- 177. Metal Craft. (2) I.** \_\_\_\_\_  
Open only to art majors with the consent of the instructor.  
Designing and making jewelry; sawing, soldering, stone setting, etc.
- 180. Theory and Philosophy of Art Education. (2) II.** Mrs. Sooy  
A comparative study of existing theories and practices in art education.
- 183A-183B. Modern Costume Design. (2-2) Yr. (Beginning either semester.)** Mrs. Sooy  
Prerequisite: courses 21A, 32A.
- 183C. Principles of Fashion Analysis. (2) II.** Mrs. Sooy  
Prerequisite: course 183A.  
Lectures and demonstrations. Guest lectures.  
Past and present fashion trends; evaluation of current fashions; presentation and promotion of fashion merchandising; reporting, surveys, and display.

- 186A. Advanced Interior Design. (2) I.** Mrs. Fetty, Mrs. Sunkees  
 Prerequisite: course 156B.  
 The study of color harmonies and form arrangements; the influence of fashion in interior decoration.
- 186B. Advanced Interior Design. (2) II.** Mrs. Fetty, Mrs. Sunkees  
 Prerequisite: course 186A.  
 The technique of interior design; shop practice through actual problems in interior design in stores and homes.
- 187. Design and Structure of Apparel Accessories. (2) I, II.** Mrs. Riswold  
 Prerequisite: courses 183A, 183B.  
 The design and structure of apparel accessories. A study of the historical development of the accessories of each period with emphasis upon the characteristic forms of modern design and the construction problems of various materials used in this field.
- 199A-199B. Special Studies in Art. (1, 4; 1, 4) I, II.**  
 Section 1. Art History. Mr. Hilpert and the Staff  
 Section 2. Industrial Design.  
 Section 3. Costume.  
 Section 4. Painting.  
 Section 5. Advertising Art.  
 Section 6. Interior Design.  
 Section 7. Art Education.  
 Prerequisite: senior standing, an average grade of B or higher in the student's specified major.  
 Advanced individual work upon specific problems connected with art and art education.

## GRADUATE COURSES

- 231A-231B. Advanced Art History. (2-2) Yr.** Mr. Wright
- 241A-241B. Advanced Art Criticism. (2-2) Yr.** Mr. Wright
- 251A-251B. Seminar in Art Analysis. (2-2) Yr.** Miss Delano
- 260A-260B. Seminar in Contemporary Art. (2-2) Yr.** The Staff
- 271A-271B. Advanced History of Art: Seminar. (2-2) Yr.** ———
- 299A-299B. Special Studies for Graduate Students. (1-4; 1-4) Yr.**  
 The Staff

## PROFESSIONAL COURSES IN METHOD

- 330. Industrial Arts for the Elementary Grades. (3) I, II.** Miss White
- 370A. Principles of Art Education. (2) II.** Mrs. Humphreys  
 A study of objectives, child growth and development; general educational principles as related to art education.
- 370B. Principles of Art Education. (2) I.** 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., Associate Professor of Astronomy (Chairman of the Department).

DANIEL M. POPPER, Ph.D., Assistant Professor of Astronomy.

JOSEPH KAPLAN, Ph.D., Professor of Physics.

PAUL E. WYLIE, C.E., Lecturer in Astronomy.

*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 69.

*Preparation for the Major.*—Required: Astronomy 7, 4, and 2; Physics 1A-1B-1D-1C or, in exceptional cases, 2A-1D-1C or 2A-2B; Mathematics 1, 3A, 3B, and 4A, or 5A, 5B, and 6A. Recommended: English composition, speech, 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 15 must be of astronomy and all 24 in courses approved by the department.

## LOWER DIVISION COURSES

1. **Elementary Astronomy.** (3) I, II.

The Staff

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.** (2) I.

Mr. Leonard

Prerequisite: credit or registration in course 4 or 7; or consent of the instructor.

Practical work for beginners, including constellation studies, telescopic observations of celestial objects, laboratory exercises cognate to the material of course 4 or 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) I, II.

Mr. Wylie

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.

Mr. Leonard

Prerequisite: plane trigonometry.

The celestial sphere and its coordinate systems; time; spherical trigonometry and its astronomical applications. Required of students preparing to major in astronomy. Course 2 may be elected for observational and laboratory work in connection with this course.

**7. General Astronomy. (3) I, II.**

Mr. Leonard, Mr. Popper

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 or II.**

Mr. Leonard, Mr. Popper

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.**

The Staff

Prerequisite: Astronomy 4, Physics 1D or 2B, and Mathematics 3B.

**\*107. The Reduction of Observations. (3) I or II.**

Prerequisite: Mathematics 3B-4A.

Mr. Leonard, Mr. Herrick

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.

**108. Numerical Analysis. (3) I or II.**

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.

\* Not to be given, 1948-1949.

**112. Rocket Navigation. (3) I.**

Mr. Herrick

Prerequisite: Mathematics 3B-4A.

The astronomical aspects of the rocket problem: celestial mechanics and position-determination.

**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. Popper

Prerequisite: Mathematics through 4A and Physics 1A-1B-1C-1D or their equivalents.

**118. Meteoritics. (3) II.**

Mr. Leonard

Open to students whose major subject is a physical science or mathematics. The science of meteorites and meteors.

**127. The Astrophysics of the Upper Atmosphere. (3) II.**

Mr. Kaplan

Prerequisite: senior standing and a major in a physical science or mathematics; or the consent of the instructor.

Cosmic-terrestrial phenomena of the Earth's upper atmosphere, including the light of the night sky, the auroras, meteors, and other effects of cosmic agents on the composition and behavior of the upper atmosphere.

**199. Special Studies. (1 to 4) I, II.**

The Staff

Prerequisite: consent of the instructor.

Investigation of special problems or presentation of selected topics chosen in accordance with the preparation and the requirements of the individual student.

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**INSTITUTE FOR NUMERICAL ANALYSIS**

Attention is directed to the Institute for Numerical Analysis whose activities are described on page 272.

## BACTERIOLOGY

ANTHONY J. SALLE, Ph.D., Professor of Bacteriology (Chairman of the Department).

MERIDIAN RUTH BALL, Sc.D., Assistant Professor of Bacteriology.

GREGORY J. JANN, Ph.D., Assistant Professor of Bacteriology.

M. J. PICKETT, Ph.D., Assistant Professor of Bacteriology.

MADELEINE FALLON, M.D., Lecturer in Bacteriology.

GORDON H. BALL, Ph.D., Professor of Zoölogy.

ORDA A. PLUNKETT, Ph.D., Associate Professor of Botany.

## 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 69.

*Preparation for the Major.*—Bacteriology 1; Chemistry 1A-1B, 8; Zoölogy 1A, 1B; Physics 2A-2B; a modern foreign language. Recommended: Chemistry 6A; Zoölogy 4.

*The Major.*—Bacteriology 103, 105; also 16 units of upper division work in related subjects, these to be selected from the following series: Bacteriology 104, 106, 106C, 107, 108; Public Health 105, 145, 163A; Botany 105A, 119, 126, 191A, 191B; Zoölogy 101A, 105, 106, 107, 107C, 111, 111C, 111H, 118; Chemistry, 107, 108A, 108B, 109A, 109B; Home Economics 159; Soil Science 110A. Courses are to be chosen with the approval of the department.

*Curriculum for Medical Technicians.*—For details, see page 78.

## LOWER DIVISION COURSES

## 1. Fundamental Bacteriology. (4) I, II.

Mr. Salle

Prerequisite: Chemistry 1A or 2A. Students who have credit for course 6 will receive only three units for course 1.

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) II.

Mr. Pickett

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. (5) I.

Mr. Pickett

Prerequisite: course 1.

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.

The microscopic flora of soil: the morphology, function, and metabolism of soil bacteria.

- 105. Serology. (4) II.** Mrs. Ball  
Lecture, one hour; laboratory, nine hours. Prerequisite: course 103.  
Limited to sixteen students per section.  
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: course 106.
- 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.  
A study of diagnostic procedures.
- 108. Hematology. (2) II.** Miss Fallon  
Lecture, one hour; laboratory, two hours.  
Prerequisite: senior standing and consent of the instructor.  
Diagnostic procedures used for the study of normal and pathological blood cells.
- 195. Proseminar. (2) I, II.** The Staff  
Prerequisite: course 103.  
Library problems.
- 199A-199B. Problems in Bacteriology. (2-2) Yr.** The Staff  
Prerequisite: consent of the instructor.

**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.** Mrs. Ball, Mr. Ball, Mr. Plunkett
- 293A-293B. Research in Microbiology. (2-5; 2-5) Yr.** The Staff

## BOTANY

## A Division of the Department of Agriculture

CARL C. EPLING, Ph.D., Professor of Botany and Curator of the Herbarium.

ARTHUR W. HAUPT, Ph.D., Professor of Botany.

OLENUS L. SPONSLER, Ph.D., Professor of Botany, Emeritus.

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 (Chairman of the Division).

FREDRICK T. ADDICOTT, Ph.D., Assistant Professor of Botany.

BERNARD O. PHINNEY, Ph.D., Instructor in Botany.

*Preparation for the Major.*—Botany 1, 2, 3, 6; Chemistry 1A-1B or equivalent. In addition to these courses, certain phases of botanical work require Geology 3, 5; Physics 2A-2B; Bacteriology 1; and Zoölogy 1A-1B.

*The Major.*—Twenty-four units of upper division botany including course 107. In certain cases 6 units of upper division botany may be replaced by upper division courses in agriculture, bacteriology, chemistry, geology and zoölogy, to be chosen with the approval of the division.

## LOWER DIVISION COURSES

## 1. General Botany. (4) I, II.

Miss Scott, \_\_\_\_\_

Lectures, two hours; laboratory, six hours. No prerequisite.

An introduction to the structure, functions, distribution, evolution, and economic use of plants.

## 2. Plant Morphology. (4) II.

Lectures, two hours; laboratory, six hours.

Prerequisite: course 1 or equivalent.

The evolution of the plant kingdom, dealing with the comparative morphology of all the great plant groups.

## 3. Field Botany. (4) II.

Lectures, two hours; laboratory or field, six hours.

Prerequisite: course 1 or equivalent.

An introduction to the life habits, interrelationships, and classification of native and ornamental plants.

## 6. Plant Anatomy. (4) I.

Miss Scott

Lecture, two hours; laboratory, six hours.

Prerequisite: course 1 or equivalent.

The microscopic study of the structure and development of higher plants in relation to the functions of the tissues.

## UPPER DIVISION COURSES

Botany 1 or equivalent is prerequisite to all upper division courses, except 103 and 150.

## 103. Botany of Economic Plants. (2) II.

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.  
Prerequisite: courses 1 and 2, or equivalent.  
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. The Taxonomy of Seed Plants. (3-3) Yr.** Mr. Epling  
Lecture, one hour; laboratory, six hours and additional field work.  
Prerequisite: courses 1 and 2, or equivalent.  
A survey of the orders and families commonly met with in the native and cultivated floras. An introduction to identification, the use of manuals, and the principles of classification.
- 107. Introduction to Plant Physiology. (4) II.** Mr. Addicott  
Lectures, two hours; laboratory, six hours.  
Prerequisite: course 6 and Chemistry 1A-1B or equivalent.  
A survey of the more important aspects of water relations, mineral nutrition, photosynthesis, assimilation, respiration and coördination in higher plants.
- 111. Plant Cytology. (3) II.** Miss Scott  
Lecture, one hour; laboratory, six hours. Prerequisite: courses 2, 6, and 107.  
Structure and physiology of the cell.
- 112. Experimental Plant Anatomy. (3) I.** Mr. Phinney  
Lecture, one hour; laboratory, six hours.  
Prerequisite: courses 2, 6, and 107.  
Quantitative aspects of development and differentiation of higher plants.
- 113. Physiological Plant Anatomy. (3) II.** Miss Scott  
Lecture, one hour; laboratory, six hours.  
Prerequisite: courses 6 and 107.  
A survey of the tissues of the higher plants in relation to function.
- 119. Mycology. (3) I.** Mr. Plunkett  
Lecture, one hour; laboratory, six hours. For students in botany, bacteriology, agriculture, and forestry.  
Structure, development, and classifications of the important genera and species of fungi.
- 126. Medical Mycology. (4) II.** Mr. Plunkett  
Lectures, two hours; laboratory, six hours.  
Prerequisite: course 119 or Bacteriology 1.  
An introduction to the morphology, physiology, and taxonomy of the pathogenic fungi which cause disease in man and the domestic animals. This course is designed for students in bacteriology, parasitology, and medicine.
- 150. Ecology. (3) II.**  
Lectures, two hours; laboratory and field, three hours.  
Field and laboratory studies of plant communities and their relation to the environment.

**153A-153B. Genonomy. (2-2) Yr.**

Mr. Epling

Lecture and discussion, two consecutive hours weekly.

Prerequisite: consent of the instructor.

The breeding population: the processes of variation and the origin and nature of barriers to gene flow.

**160A-160B. Plant Physiology. (4-4) Yr.**

Mr. Addicott

Lectures, two hours; laboratory, six hours.

Prerequisite: course 107 and Chemistry 8, or equivalents. Chemistry 6A is recommended.

Physiology of the higher plants including water relations, mineral nutrition, pigments, photosynthesis, assimilation, translocation, respiration, growth, dormancy, hormones and periodicity. An advanced course employing quantitative laboratory methods. Designed for students expecting to enter graduate work in the botanical or horticultural sciences.

**165. Plant Biochemistry. (4) II.**

Lectures, two hours; laboratory, six hours.

Prerequisite: course 160A-160B and Chemistry 8, or equivalents.

The chemistry of plants and plant products.

**190. Research Methods in Morphology. (2) I.**

Mr. Phinney

Laboratory and conferences, six hours.

Prerequisite: consent of the instructor.

Practical introduction to methods of preparing plant tissues and materials for microscopic study.

**191A-191B. Molecular Structure of Biological Materials. (2-2) Yr.**

Mr. Addicott

Prerequisite: senior standing, or consent of the instructor; Physics 2A-2B, Chemistry 8, and Botany 1, 2 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 (2-4; 2-4) Yr.**

The Staff

Prerequisite: senior standing.

**GRADUATE COURSES****252A-252B. Seminar in Principles and Theories of Botany. (2-2) Yr.**

The Staff

**253A-253B. Seminar in Plant Anatomy. (1-1) Yr.**

Miss Scott

**254A-254B. Seminar in Plant Physiology. (1-1) Yr.**

Mr. Addicott

**255A-255B. Seminar in Systematics. (1-1) Yr.**

Mr. Epling

**256A-256B. Seminar in Plant Morphology. (1-1) Yr.**

Mr. Haupt

**257A-257B. Seminar in Mycology. (1-1) Yr.**

Mr. Plunkett

**278A-278B. Research in Botany. (2-6; 2-6) Yr.**

The Staff

**RELATED COURSES IN OTHER DEPARTMENTS OR DIVISIONS**

**Bacteriology 1. Fundamental Bacteriology.**

**Biology 1. Fundamentals of Biology.**

**Geology 120. Paleobotany.**

**Irrigation and Soils 110A. Soil and Plant Interrelations.**

**Ornamental Horticulture 131A-131B. Taxonomy and Ecology of Ornamental Plants.**

**Ornamental Horticulture 136. General Floriculture.**

**Ornamental Horticulture 140. Plant Genetics.**

**Plant Pathology 120. Plant Diseases.**

**Subtropical Horticulture 100. Systematic Pomology.**

**Subtropical Horticulture 101. Citriculture.**

**Subtropical Horticulture 102. Subtropical Fruits other than Citrus.**

**Subtropical Horticulture 110. Plant Propagation.**

**Subtropical Horticulture 113. Fruit Physiology and Storage Problems.**

**Zoölogy 130, 131. Genetics.**

**BUSINESS ADMINISTRATION**

**RALPH CASSADY, JR., Ph.D.,** Professor of Marketing.

**NEIL H. JACOBY, Ph.D.,** Professor of Business Administration (Chairman of the Department).

**IRA N. FRISBEE, M.B.A., C.P.A.,** Professor of Accounting.

**HOWARD SCOTT NOBLE, M.B.A., C.P.A., LL.D.,** Professor of Accounting.

**\*JOHN C. CLENDENIN, Ph.D.,** Associate Professor of Banking and Finance.

**WILBERT E. KARRENBROOK, Ph.D.,** Associate Professor of Accounting.

**GEORGE W. ROBBINS, M.B.A.,** Associate Professor of Marketing.

**SAMUEL J. WANOUS, Ph.D.,** Associate Professor of Office Management and Business Education.

**WILLIAM F. BROWN, Ph.D.,** Assistant Professor of Marketing.

**A. B. CARSON, Ph.D., C.P.A.,** Assistant Professor of Accounting.

**WAYNE L. McNAUGHTON, Ph.D.,** Assistant Professor of Industrial Management.

**ALFRED NICOLS, Ph.D.,** Assistant Professor of Business Theory.

**ESTELLA B. PLOUGH,** Associate in Commercial Practice.

**ROLAND W. FUNK, B.S.,** Lecturer in Accounting.

**MALCOLM F. HESLIP, Ph.D.,** Lecturer in Business Administration.

**ERWIN M. KEITHLEY, M.S.,** Lecturer in Office Management.

**RONALD C. ROESCHLAUB, LL.B., M.A.,** Lecturer in Business Law.

**HARRY SIMONS, M.A., C.P.A.,** Lecturer in Accounting.

**CLAUDE W. STIMSON, Ph.D., LL.B.,** Lecturer in Business Law.

**ROBERT M. WILLIAMS, M.A.,** Lecturer in Business Statistics.

**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, Speech 1A, Mathematics E, 2, Geography 5A-5B. Other requirements in the lower division will be found on page 98.

*The Upper Division.*

1. General requirements: (a) in the junior year, courses 115A-115B, 120, 140, 160A, 180A, and Economics 135; (b) in the senior year, course 100.

2. Special elective: 3 units each from upper division business administration and economics courses other than those used to meet requirement (1) or (3).

3. At least four courses aggregating not less than 10 units in one of the following six majors: accounting, banking and finance, industrial management, marketing, office management, general business. (For courses offered in the various majors, see page 102.)

4. (f) and (g), page 103, for requirements concerning electives and minimum scholarship standing.

\* In residence spring semester only, 1948-1949.

**Electives.**—All undergraduate courses in the College of Business Administration List (see ANNOUNCEMENT OF THE COLLEGE OF BUSINESS ADMINISTRATION), 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 180A. For regulations governing this list, see page 69.

### 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.†

Students who have degrees in fields other than business administration and who meet the general requirements for admission to graduate standing may pursue a special curriculum of four semesters leading to the M.B.A. degree.

#### *Departmental Requirements for the Degree of Master of Business Administration.*

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 business education 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.

### LOWER DIVISION COURSES

#### **1A–1B. Principles of Accounting.** (3–3) Beginning either semester.

The Staff

Three hours lecture. Prerequisite: sophomore standing for nonaccounting majors. Accounting majors should begin the course not later than the second semester of the freshman year.

#### **2A–2B. Accounting Laboratory.** (1–1) Beginning either semester.

Need not be taken concurrently with course 1A–1B.

The Staff

One three-hour laboratory per week. Required of all accounting majors.

#### **3A–3B. Secretarial Training.** (2–2) Beginning either semester.

Mr. Wanous, Mr. Keithley, 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.

† For exceptions, consult the ANNOUNCEMENT OF THE COLLEGE OF BUSINESS ADMINISTRATION.

**4A-4B. Secretarial Training. (3-3) Beginning either semester.**

Mr. Wanous, Mrs. Plough, Mr. Keithley, 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.

**†100. Theory of Business. (2) I, II.**

Mr. Nicols

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.

**102. Business Fluctuations. (3) I, II.**

Mr. Nicols

Analysis of the factors responsible for business instability and their significance for the individual firm. Examination of the important forces in past fluctuations and a survey of the various indices of business activity. Connection of business prosperity with employment. The effect of public policy through taxes, investment, labor organization, and regional development on the stability of business and employment.

**†110. Real Estate Principles. (3) I, II.**

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. Stimson, Mr. Roeschlaub

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, II.**

Mr. Stimson

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) I, II.**

Mr. Stimson

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.

† Open only to students registered in College of Business Administration and to graduate students who have had the necessary preliminary preparation.

**120. Business Organization.** (3) I, II. Mr. Nicols, Mr. Heslip, Mr. Williams

A study of the business unit and its functions from the points of view of both society and management. The coördination 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 Organization.** (3) I, II. Mr. McNaughton

Prerequisite: course 120 or consent of the instructor.

A study of the industrial organization and the physical facilities with which it works.

**†121B. Industrial Production.** (3) I, II. Mr. McNaughton

Prerequisite: course 121A.

The industrial organization as a dynamic enterprise.

**124A. Theory of Time and Motion Study.** (2) I. Mr. McNaughton

Prerequisite: course 120 or consent of the instructor.

The need for and limitations of time and motion study as a management tool; motion economy applied to the plant, the process, and the operation; layout of the work-place; observing and analyzing plant operations; establishing the time standard; and the use of standard data. Lectures, class discussions, demonstrations, and motion pictures are used to present the material of the course, which is designed for both management and nonmanagement students.

**124B. Time and Motion Study Techniques.** (2) II. Mr. McNaughton

Four hours laboratory weekly in two two-hour meetings.

Prerequisite: course 124A (may be taken concurrently).

Analysis of the component parts of the work cycle; application of motion-study objectives to specific problems; jig and fixture construction; motion-picture film analysis; the motion-study report. Practice in observing and analyzing industrial operations; timing work-cycle elements; applying speed rates and allowances; calculating time standards.

**†125. Organization and Management Problems.** (3) I.

Prerequisite: senior standing. Mr. Noble, 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, ———

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, II. Mr. Clendenin, ———

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.

† Open only to students registered in College of Business Administration and to graduate students who have had the necessary preliminary preparation.

**‡133. Investment and Financial Analysis. (3) I, 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) I.**

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.**

Mr. Williams

Lectures, two hours; laboratory, four hours. Students who have credit for Economics 40 will receive only one unit of credit for this course.

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.

**‡144. Business and Statistical Research. (2) I.**

Mr. Williams

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, II.**

Mr. Wanous, Mr. Keithley

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, II.** Mr. Wanous, Mr. Erickson

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.

‡ Open only to students registered in College of Business Administration and to graduate students who have had the necessary preliminary preparation.



**†152. Secretarial Problems. (3) I, II.**

Mr. Wanous, Mr. Erickson

Prerequisite: course 151.

A study of nonstenographic 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.

**153A. Personnel Management I. (3) I, II.**

Mr. McNaughton

The first of two courses designed to present the principles of managing personnel in business organizations. Policies of recruitment, selection, testing, placement, job analysis and classification, training, incentives, promotion, and compensation. Techniques of maintaining high morale.

**153B. Personnel Management II. (3) I, II.**

Mr. McNaughton

Prerequisite: course 153A.

Continues the study of personnel management, with special reference to employee counseling, safety, health, welfare, and retirement. Considers the relationship of personnel management to employee organizations and to government, including management policies in collective bargaining that promote efficiency and industrial peace.

**†154. Office Organization and Management. (3) I, 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.

**155. Management and Labor Law. (3) I, II.**

The socio-legal framework within which personnel policies are administered. The history of the common law governing employer-employee relations; the legislative, administrative, and judicial controls of wages, hours, and working conditions; of employers; of unions; and of agreements between unions and employers.

**160A. Advanced Accounting. (3) I, II.**

Mr. Karrenbrock, Mr. Simons, Mr. Funk, Mr. Carson

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.

**160B. Advanced Accounting. (3) I, II.**

Mr. Karrenbrock, Mr. Simons, Mr. Funk, Mr. Carson

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, Mr. Carson

Prerequisite: course 160A.

Distribution of department store expenses, general factory accounting,

† Open only to students registered in College of Business Administration and to graduate students who have had the necessary preliminary preparation.

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) I, 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, II.**

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) I, II.**

Mr. Simons

Prerequisite: course 160B.

A study of fund accounting as applied to governmental accounting and nonprofit 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 nonprofit institutions.

**‡169. C.P.A. Review. (5) II.**

Mr. Karrenbrock, Mr. Simons

Prerequisite: courses 160A, 160B, 161, 162, 163, 165.

Three hours lecture and two practice sessions of two hours each weekly.

Intensive training in working accounting problems of the type encountered in C.P.A. examinations. The practice sessions will be devoted to problem solution under conditions similar to those experienced by the C.P.A. candidate during the examination. Explanation and acceptable solutions to the problems will be provided.

**180A. Elements of Marketing. (3) I, II.**

Mr. Brown, Mr. Nicols, Mr. Heslip

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.

**180B. Marketing Problems. (3) I, II.**

Mr. Cassady, Mr. Robbins

Prerequisite: course 180A.

The significant problems of price, marketing laws, and marketing research treated from the standpoints of theory, technique, and management policy formation.

**‡184. Sales Management. (3) I, II.**

Mr. Robbins

Prerequisite: course 180B.

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.

‡ Open only to students registered in College of Business Administration and to graduate students who have had the necessary preliminary preparation.

**‡185A. Advertising Principles. (3) I, II.**

Mr. Heslip, Mr. Brown

Prerequisite: course 180B or consent of the instructor.

A survey of the field of advertising—its use, production, administration, and economic implications. Includes the study of advertising psychology, practice in the preparation of advertisements, consideration of the methods of market research and copy testing, and analysis of campaign planning and sales coordination.

**185B. Advertising Problems. (3) I, II.**

Mr. Heslip, Mr. Brown

Prerequisite: course 185B.

An intensive study of advertising production, media, and research.

**‡186. Retail Store Management. (3) I, II.**

Mr. Cassady

Prerequisite: course 180B.

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 consent of the instructor.

## GRADUATE COURSES

**235. Money Rates and Money Markets. (2) I.**

Mr. Clendenin

**250A-250B. Seminar in Business Policies. (2-2) Yr.** Mr. Jacoby, Mr. Nicols**251A-251B. Seminar in Industrial Management Problems. (2-2) Yr.**

Mr. McNaughton

**253A-253B. Seminar in Personnel Management and Industrial Relations. (2-2) Yr.****254. Seminar in Finance. (2) II.**

Mr. Clendenin

**255. Seminar in Investments. (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

**262. Seminar in Industrial Accounting. (2) II.**

Mr. Karrenbrock

**265. Seminar in Governmental and Institutional Accounting. (2) II.****270. Seminar in Marketing Institutions. (2) I.**

Mr. Cassady

**271. Seminar in Market Price Policies. (2) II.**

Mr. Cassady

**280. Case Studies in Office Management. (2) I, II.**

Mr. Wanous

**290. Problems in Business Administration. (1 to 4) I, II.**

The Staff

‡ Open only to students registered in College of Business Administration and to graduate students who have had the necessary preliminary preparation.

## 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.

## CHEMISTRY

FRANCIS E. BLAETT, Ph.D., Professor of Chemistry (Chairman of the Department).

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.

HOSMER W. STONE, Ph.D., Professor of Chemistry.

SAUL WINSTEIN, Ph.D., Professor of Chemistry.

WILLIAM G. YOUNG, Ph.D., Professor of Chemistry.

WILLIAM R. CROWELL, Ph.D., Professor of Chemistry, Emeritus.

CLIFFORD S. GARNER, Ph.D., Associate Professor of Chemistry.

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.

DONALD J. CRAM, Ph.D., Assistant Professor of Chemistry.

RALPH A. JAMES, Ph.D., Assistant Professor of Chemistry.

WILLIAM G. McMILLAN, JR., Ph.D., Assistant Professor of Chemistry.

ROBERT L. PECSOK, Ph.D., Assistant Professor of Chemistry.

ROBERT L. SCOTT, Ph.D., Assistant Professor of Chemistry.

SHERMAN A. SUNDET, 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 69.

*Preparation for the Major.*—Required: Chemistry 1A–1B, 6A, Physics 1A, 1C, 1D\* (or 2A, 1C, 1D\*)°, trigonometry, Mathematics 1–3A\*\*, 3B, 4A, 4B\*, English 1A, English 1B or Speech 1A°, and a reading knowledge of German°. Recommended: an additional course in chemistry.

\* This course may be taken in the upper division. Mathematics 181 may be substituted for 4B in certain cases. Consult the department adviser.

\*\* Mathematics 5A, 5B may be substituted for 1–3A, 3B. Consult the department adviser.

° Permission of the department adviser required. For students who combine a chemistry major and a premedical major, Physics 2A–2B may be substituted with the consent of the department adviser.

°° The equivalent of German 1, 2, and 3P. German 3P may be completed in the upper division.

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.

*The Major.*—Upper division credit will be allowed for not more than three courses from the group 6A, 6B, 8, 9, 112A and 112B, provided such courses were taken by the student while he was in the upper division, and provided further that not more than two of the courses were in organic chemistry. This allowance of upper division credit is permissible in any University curriculum.

For students who have already taken Chemistry 8 or equivalent prior to September, 1947, the following minimum requirement for the major (as set forth in the 1946-1947 General Catalogue) is prescribed: 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, not less than two courses from the following group: courses 101, 103, 107A or 108A, 107B or 108B, and 121. Not more than 8 of the above total of 24 units may be from the group 107A-107B-108, courses formerly listed. Additional courses in physics and mathematics are recommended.

Chemistry majors who began the study of organic chemistry after August, 1947, are required to take the new year-course 112A-112B. This necessitates a slight change in the statement of upper division requirements given in the foregoing paragraph. The minimum major requirement will then be: courses 6A-6B (6), 112A-112B (10), 110A-110B (6), 111A-111B (4); two courses, of which at least one must include laboratory work, selected from the following group: 103, 107, 108A, 108B, 115, 121, 131, 132, and 140.

Completion of the major in chemistry automatically meets the minimum requirements for eligibility to full membership in the American Chemical Society in the minimum time of two years after graduation.

*Limitation of Enrollment.* Warning: Since demand for laboratory space in chemistry, particularly in quantitative analysis and organic chemistry, is likely to exceed supply, it may be necessary to arrange for selection of students to be admitted, before enrollment days, and thus *several days before the first day of instruction*. Applicants for such courses should consult the official Chemistry Department bulletin board on registration days (not enrollment days). Information will be posted describing possible methods of advance application, qualifying examinations, or other procedures for selecting the limited number acceptable in a given class. Students neglecting this matter may expect great difficulties, or possibly complete exclusion from the courses.

#### 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; 8, 9, and 112A, 6 units; 8, 9, and 112B, 10 units; 8, 112A, and 112B, 10 units.

#### 1A. General Chemistry. (5) I, II.

Mr. McCullough, Mr. Stone

Lectures, three hours; laboratory and quiz, six hours. Prerequisite: high school chemistry. (High school physics and three years of high school mathematics, or Chemistry 2A will be accepted in place of high school Chemistry, but the latter is recommended.) Required in the Colleges of Agriculture, Chemistry, and 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.

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.**

Continuation of course 1A with special applications to the theory and technique of qualitative analysis; periodic system; structure of matter.

**2. Introductory General Chemistry. (3) I, II.**

Mr. Cram

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 credit to students who have credit for course 2A.

**2A. Introductory General Chemistry. (5) I, II.**

Mr. Cram

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 is required of certain home economics majors in the College of Applied Arts.

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. Stone, Mr. Pecsok

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.

Principles and technique involved in fundamental gravimetric and volumetric analyses.

**6B. Quantitative Analysis. (3) I, II.**

Mr. Kirschman

Lectures, discussions, and quizzes, two hours; laboratory, six hours. Prerequisite: course 6A. Required of chemistry majors, economic geologists, and College of Chemistry students.

A continuation of course 6A but with greater emphasis on theory. Analytical problems in acidimetry and alkalimetry, oxidimetry, electrolytic deposition, and semiquantitative procedures.

**8. Elementary Organic Chemistry. (3) I, II.**

Mr. Cram

Prerequisite: course 1A-1B; concurrent enrollment in course 9 is advisable. This course is required of premedical and pre dental students, majors in petroleum engineering, sanitary and municipal engineering, home economics, public health, and some agriculture majors.

An introductory study of the compounds of carbon, including both aliphatic and aromatic derivatives.

**9. Methods of Organic Chemistry. (3) I, II.**

Mr. Robertson

Lectures and quizzes on principles of laboratory manipulation, two hours; laboratory, six hours. Prerequisite or concurrent: course 8. Required of premedical and pre dental students, and majors in petroleum engineering.

Laboratory work devoted principally to synthesis, partly to analysis.

**10. Organic and Food Chemistry. (4) I.**

Prerequisite: courses 1A and 1B, or 2A. Lectures, three hours; laboratory, three hours. Arranged primarily for majors in home economics.

**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. Robertson

Lecture, one hour; laboratory, eight hours. Prerequisite: courses 8 and 9 and the ability to read scientific German.

Advanced organic preparations; introduction to research methods.

**102. Advanced Organic Chemistry. (3) I, II.**

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

Lecture, one hour; laboratory, six hours. Prerequisite: courses 6A-6B, 8 and 9, or 112A-112B.

Classification, reactions, and identification of organic compounds.

**107. Amino Acids and Proteins. (3) I.**

Mr. Dunn

Lectures, three hours. Prerequisite: courses 6A, 8 and 9, or 6A, 112A-112B. A detailed treatment of the chemistry and metabolism of amino acids, polypeptides and proteins.

**108A-108B. General Biochemistry. (4-4) I, II.**

Mr. Dunn

Lectures, two hours; laboratory and quiz, six hours. Prerequisite: courses 6A, 8 and 9, or 6A, 112A-112B.

This course is designed to meet the needs of majors both in chemistry and the life sciences.

**109A-109B. General Physical Chemistry. (2-2) Yr.**

Mr. Garner

Lectures and demonstrations. Prerequisite: course 6A, Physics 2A-2B, Mathematics 1; 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) I, 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.

\* Permission of the department adviser required.



**110H. Physical Chemistry. (3) I, 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, II.**

Laboratory, six hours. Prerequisite or concurrent: course 110A. Required of chemistry majors.

Physicochemical problems and measurements.

**111B. Physical Chemistry Laboratory. (2) I, II.****Mr. McMillan**

Laboratory, six hours. Prerequisite: course 110A; concurrent: course 110B. Required of chemistry majors.

A continuation of course 111A.

**112A-112B. Organic Chemistry. (5-5) Yr. (Beginning either semester)****Mr. Winstein, Mr. Geissman**

Lectures, three hours; laboratory and quiz, six hours. Prerequisite: course 1A-1B. Recommended: course 6A. This course is required of chemistry majors who start organic chemistry after August, 1947. It is open to other students who desire a more comprehensive course than Chemistry 8 and 9.

**115. Advanced Organic Synthesis. (3) I, II.****Mr. Robertson**

Prerequisite: courses 112A and 112B, and the ability to read scientific German. Quiz, one hour; laboratory, seven hours.

Advanced organic preparations; introduction to research methods.

**121. Advanced Inorganic Chemistry. (3) I.****Mr. Stone**

Lecture, one hour; laboratory, six hours. Prerequisite: course 6B.

Equilibrium and reaction rate; periodic classification. Laboratory work principally synthetic and analytic, involving special techniques.

**131. Absorption Spectra and Photochemical Reactions. (2) II.****Mr. Blacet**

Prerequisite or concurrent: course 110A.

**132. X Rays and Crystal Structure. (2) I.****Mr. McCullough**

Prerequisite: course 110A.

Symmetry of crystals; use of X rays in the investigation of crystal structure.

**140. Industrial Chemistry. (2) II.**

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.

**GRADUATE COURSES****203. Chemical Thermodynamics. (3) II.****Mr. Ramsey****204. The Chemical Bond and Molecular Structure. (3) I.****Mr. Garner**

\*\* To be given only if laboratory space is available.

**221A-221B. Physical Aspects of Organic Chemistry. (2-2) Yr.**

Mr. Winstein, Mr. Young

A course stressing mechanism. Electronic interpretations, kinetics, and stereochemistry of organic reactions are treated. The emphasis in this course is, in some years, on ionic situations and, other years, on free radical reactions.

**222A-B-C-D°. Organic Chemistry. (2, 2) I, II. Mr. Jacobs, Mr. Geissman**

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 subject. Among the topics considered are the following: stereochemistry, the Grignard reagent, natural products, aromatic compounds, condensation reactions, and unsaturated compounds.

**231. Nuclear Chemistry. (3) II.**

Mr. Garner

Introduction to natural and artificial radioactivity, detection of radiations, methods for the preparation, concentration, isolation, and application of radioisotopes to chemical problems.

**233. Statistical Mechanics. (3) II.**

Mr. McMillan

Prerequisite: courses 110A, 110B; Mathematics 4B. Recommended: course 203; Physics 105; Mathematics 119A, 122A-B.

Derivation of the laws of molecular assemblies from the properties of the individual molecules, including: elementary kinetic theory of gases; thermodynamic functions for monatomic, diatomic, and polyatomic gases; chemical equilibrium; the crystalline state; theory of the general imperfect gas; condensation, and related topics.

**260. Seminar in Chemistry. (1) I, II. The Staff (Mr. Jacobs in charge)**

Oral reports by graduate students on important topics from 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

**280A-B-C-D. Research in Chemistry. (3 to 6) I, II.**

The Staff (Mr. Young in charge)

**281A-B-C-D. Advanced Research in Chemistry. (3 to 6) I, II.**

The Staff (Mr. Young in charge)

\* Not to be given, 1948-1949. Given in alternate years with parts A and B.

## 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.

ALBERT HARTMAN TRAVIS, 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 69.

The student may take the major in Classics either in Latin or 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. A 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.

*Requirements for Master's Degree.*

For the general requirements, see page 134. 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

Required of all candidates for the master's degree in Latin.

## LATIN

## LOWER DIVISION COURSES

## 1. Beginning Latin. (4) I, II.

Sections meet five hours weekly.

## 2. Latin Readings. (4) I, II.

Miss Caldwell

Prerequisite: course 1, or two years of high school Latin.

Sections meet five hours weekly.

## GA. Latin Prose Composition. (1) I.

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.

Miss Caldwell

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. Hoffeit

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

A knowledge of Latin is 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. Travis  
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. \_\_\_\_\_  
Prerequisite: course 102.
154. **Tacitus: Annals.** (3) II. Mr. Hoffleit  
Prerequisite: course 102.
157. **Roman Satire.** (3) II. Mr. Carey  
Prerequisite: course 102.
- †165A-165B. **Latin Composition.** (1-1) Yr. \_\_\_\_\_  
Prerequisite: course 9A-9B.  
Ciceronian prose.
- 165C-165D. **Latin Composition.** (1-1) Yr. Mr. Carey  
Prerequisite: courses 9A, 9B.  
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. Travis  
A study of the literature of Rome from Ennius to Apuleius with reading  
in English.
191. **Cicero: Selections.** (3) I. Mr. Hoffleit  
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, 1948-1949; to be given, 1949-1950.

\*\* Not to be given, 1948-1949. Latin 180A-180B is ordinarily given in alternation with Greek 180A-180B.

\* Not to be given, 1948-1949.

- \*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.** Mr. Travis  
Sections meet five hours weekly.
- 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. Travis  
Prerequisite: course 1-2.
- 100C-100D. Prose Composition. (1-1) Yr.** Mr. Friedlander  
Prerequisite: course 1-2.
- 101. Homer: Odyssey; Herodotus: Selections. (3) I.** Mr. Travis  
Prerequisite: course 1-2.
- 102. Plato: Apology and Crito; Lyric Poets. (3) II.** Mr. Hoffleit  
Prerequisite: course 101.
- \*103. Greek Drama: Euripides and Aristophanes. (3) II.** Mr. Hoffleit  
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. Carey  
Prerequisite: courses 101, 102.
- \*114. Plato: Republic. (3) I.** Mr. Hoffleit  
Prerequisite: courses 101, 102.

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\* Not to be given, 1948-1949.

\* Not to be given, 1948-1949. 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. Brown
- History 111B. Roman History to the Accession of Augustus. (3) II.** Mr. Brown
- History 111C. The Roman Empire from Augustus to Constantine. (3) I.** Mr. Brown
- Philosophy 152. Plato and His Predecessors. (3) I.** ———
- Philosophy 153. Aristotle and Later Greek Philosophy. (3) II.** ———

\* Not to be given, 1948-1949.

## ECONOMICS

- BENJAMIN M. ANDERSON, Ph.D., Professor of Economics.  
 PAUL A. DODD, Ph.D., Professor of Economics.  
 EARL JOYCE MILLER, Ph.D., LL.D., Professor of Economics (Chairman of the Department).  
<sup>1</sup> DUDLEY F. PEGEUM, Ph.D., Professor of Economics.  
<sup>1</sup> ROY G. BLAKEY, Ph.D., Visiting Professor of Economics.  
 GORDON S. WATKINS, Ph.D., LL.D., Professor of Economics.  
<sup>1</sup> MARVEL M. STOCKWELL, Ph.D., Associate Professor of Economics.  
<sup>\*</sup> WARREN C. SCOVILLE, Ph.D., Associate Professor of Economics.  
 ARMEN A. ALOHIAN, Ph.D., Assistant Professor of Economics.  
 GEORGE H. HILDEBRAND, Assistant Professor of Economics.  
 KENNETH D. ROOSE, Ph.D., Assistant Professor of Economics.  
 WILLIAM J. J. SMITH, A.B., Assistant Professor of Economics.  
 BENJAMIN AARON, A.B., LL.B., Lecturer in Economics.  
 WYTZE GORTER, A.B., Lecturer in Economics.  
 WILMA MAYERS, A.B., Lecturer in Economics.  
 DONALD C. MILLER, M.A., Lecturer in Economics.  
 FRANK C. PIERSON, Ph.D., 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 69.

*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 140 or Statistics 131A may be substituted for Economics 40.

*The Major.*—Twenty-four upper division units including 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 Agricultural Economics 101A and 104; or 6 upper division units in any social science. The 6 units must be in one department. Courses numbered 101 are not acceptable.

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.

<sup>1</sup> In residence first semester only, 1948-1949.

<sup>2</sup> In residence second semester only, 1948-1949.

<sup>\*</sup> Absent on leave, 1948-1949.



Public Finance: 131A-131B, 133.

Money and Banking: 135, 136A-136B.

Statistics: 140, 141.

Labor Economics: 150, 152, 155, 156, 158.

Government and Industry: 170, 171, 173, 174.

International Economics: 195, 196, 197.

Unclassified: 151, 176, 177, 101.

**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).

#### LOWER DIVISION COURSES

**1A-1B. Principles of Economics.** (8-3) Yr. Beginning either semester.

Mr. E. J. Miller, Mr. Stockwell, Mr. Scoville, Mr. D. C. Miller,

Mr. Gorter, Mr. Roose, Mrs. Mayers

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. Introduction to Statistical Methods.** (3) I, II.

Mr. Alchian

Lectures, two hours; laboratory, one two-hour period. Statistics 131A may be substituted for this course in meeting the requirements for the major in economics. Prerequisite: high school algebra.

Principles and methods of utilizing statistical data; scientific method; presentation and statistics of a given set of data; probability; methods of statistical inference with economic applications; bivariate correlation, time series and index numbers.

#### 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. Smith

Modern theories of price determination and evolution of ideas concerning wages, rent, and interest.

**100B. Value and Distribution. (3) II.**

Mr. Smith

Study of the principles of value and distribution under competition, monopoly, and monopolistic competition.

**101. Economic Principles and Problems. (3) I, II.**

Mr. Miller, Mr. Scoville, Mr. Smith, Mrs. Mayers, Mr. Roose

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.

**103. Development of Economic Thought. (3) I, II.**

Mr. Watkins

A study of the development of economic ideas and systems of economic doctrine, with particular emphasis on modern schools of economic thought.

**106. Programs of Economic Reform. (3) II.**

Mr. Hildebrand

An examination of the economic assumptions and implications of the literature of socialism, communism, and anarchism, from classical antiquity to the present, with special attention to conceptions of economic reform and organization, and to the place of the state in the economic scheme.

**107. Comparative Economic Systems. (3) I.**

Mr. Hildebrand, Mr. D. C. Miller

An analysis of the rival economic doctrines of capitalism, socialism, communism, and fascism, as applied in the United States, Great Britain, the Soviet Union, and Nazi Germany, with emphasis upon the problems and implications of systems of economic planning.

**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) I, II.**

Mr. Stockwell, Mr. Blakey

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, Mrs. Mayers, Mr. D. C. Miller

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. (2-2) Yr.**

Mr. Anderson

Prerequisite: course 135.

Monetary and financial history of the United States and leading foreign countries, 1914-1929; 1929 to date.

**138. Business Cycles. (3) I.**

Mr. Smith

The measurement, causes, and possible control of economic fluctuations.

**140. Statistical Methods. (3) I.**

Mr. Alchian

Prerequisite: course 40, or the equivalent.

Economics 40 resurveyed; emphasis on ability to perform statistical studies with reference to the specific economic applicability of the results.

Probability, analysis of variance, multisamples, time, correlation, and sampling procedures with reference to statistical inference.

Especially useful for students contemplating employment as economists or statisticians with industry or government.

**141. Quantitative Economic Analysis. (3) II.**

Mr. Alchian

Prerequisite: courses 100A and 40, or the equivalent.

Examination of American economic structure. Analysis of prerequisite courses is basis of study of quantitative aspects of the main economic magnitudes and their relationships. Attention is given to implications of extent of quantitative knowledge on current economic theory and policy.

Consumer and investor demand; costs; profits; wage-price patterns; income variations and distributions; money demand and flows; business-cycle patterns; acceleration- and multiplier-principle; resource allocation.

**150. Labor Economics. (3) I, II.**

Mr. Hildebrand, Mr. Pierson

Not open for credit to students who have had or are taking course 155, 156A-156B, or 158.

The problems of labor; the rise of modern industrialism; the principal causes of industrial strife, and the basis of industrial peace.

**151. Economics of Consumption. (3) II.**

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.**

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. (3) I.**

Mr. Watkins

Prerequisite: course 150, or consent of the instructor.

The origin and development of trade-unionism in the United States; theory of collective bargaining, methods and practices of contemporary unionism; the legal status of unionism.

**156A-156B. Labor Law and Legislation. (3-3) Yr.**

Mr. Aaron

Prerequisite: course 150, or consent of the instructor.

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; administrative agencies.

**158. Collective Bargaining. (3) II.**

Mr. Watkins

Prerequisite: course 150, or consent of the instructor.

Theory and practice of collective bargaining; collective bargaining systems in basic American industries; wage determination; grievance procedures and arbitration of industrial disputes.

**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) I.**

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; coördination of facilities. The current transportation problem.

**174. Ocean Transportation. (3) II.**

Historical development of ships and shipping; trade routes; principles of ocean transportation; rates and documentation; ports and terminals; subsidies; American Merchant Marine; coördination of transportation.

**176. Postwar Financial Reconstruction. (2) II.**

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 control; proposals for reconstruction.

**195. Principles of International Trade. (3) I.**

Mr. Gorter

Characteristics of international trade. Comparative costs. The exchange of goods and services and the gain from trade. Foreign exchange. Tariffs and their effects upon trade. United States and British tariff policies.

**196. International Trade Policies. (3) I.**

Mr. Gorter

Prerequisite: course 195.

Governmental regulation of international transactions. Bilateral and multilateral trade agreements. Import quotas. Dumping and international cartels. International commodity agreements. The international trade of planned economies. The development of United States foreign trade policy and its impact upon the world economy.

**197. International Finance. (3) II.**

Mr. Gorter

Prerequisite: course 195.

Exchange control. Analysis of the operation of gold and other standards. The mechanics of international capital movements. International investment and national welfare. The problem of loan repayment. The International Monetary Fund, the Export-Import Bank, and the International Bank.

**199. Special Problems in Economics. (2-3) I, II.**

The Staff

Admission by special arrangement with the chairman of the department.

**GRADUATE COURSES****250A-250B. History of Economic Doctrine. (3-3) Yr.**

Mr. Watkins

**251A-251B. Contemporary Economic Theory. (3-3) Yr.**

Mr. Smith

**252. Evolution of Economic Institutions. (3) I.**

Mr. Scoville

**253. Economic Theory. (3) I.**

Mr. Anderson

**\*254. Economics of Production. (3)**

Mr. Pegrum

**\*255. Value and Distribution; Seminar. (3)**

Mr. Anderson

Prerequisite: the consent of the instructor.

**256. Monetary Theory. (3) II.**

Mr. Anderson

\* Not to be given, 1948-1949.

- \*257. **Studies in Contemporary Banking.** (2) Mr. Anderson
258. **Economic Fluctuations.** (3) I. Mr. Alchian
259. **Analytic Concepts and Methods of Economic Theory.** (3) II. Mr. Alchian
- 260A-260B. **The Relations of Government to Economic Life.** (3-3) Yr. Mr. Pegrum
261. **Studies in Public Finance.** (2) Mr. Stockwell, Mr. Blakey
262. **Theories and Problems of Economic Planning.** (3) II. Mr. Hildebrand
264. **Social Insurance.** (2) I. Mr. Dodd
- \*270A-270B. **Studies in the History and Problems of Organized Labor.**  
(2-2) Yr. Mr. Watkins
271. **Wage Theory.** (3) I. Mr. Hildebrand
272. **Studies in Industrial Relations.** (3) II. Mr. Dodd
- \*274. **Seminar in Labor Law.** (3) I. \_\_\_\_\_
290. **Special Problems.** (1-6) II. The Staff (Mr. Anderson in charge)

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\* Not to be given, 1948-1949.

## EDUCATION

\*JOHN A. HOCKETT, Ph.D., Professor of Education and Associate Director of Training.

DAVID F. JACKEY, Ph.D., Professor of Vocational Education.

EDWIN A. LEE, Ph.D., Professor of Education (Chairman of the Department).

KATHERINE L. McLAUGHLIN, Ph.D., Professor of Education.

MALCOLM S. MACLEAN, Ph.D., Professor of Education.

LLOYD N. MORRISETT, 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.

DAVID G. RYANS, Ph.D., Associate Professor of Education.

FLAUD C. WOOTON, Ph.D., Professor of Education.

JUNIUS L. MERIAM, Ph.D., Professor of Education, Emeritus.

ERNEST CARROLL MOORE, Ph.D., LL.D., Professor of Education and Philosophy, Emeritus.

CHARLES WILKEN WADDELL, Ph.D., Professor of Education, Emeritus.

JESSE A. BOND, Ed.D., Associate Professor of Education and Director of Training.

F. DEAN McCLUSKY, Ph.D., Associate Professor of Education.

ETHEL I. SALISBURY, M.A., Associate Professor of Elementary Education and Supervisor of Training.

MAY V. SEAGOE, Ph.D., Associate Professor of Education.

CORINNE A. SEEDS, M.A., Associate Professor of Elementary Education and Principal of the University Elementary School.

PAUL H. SHEATS, Ph.D., Associate Professor of Education.

SAMUEL J. WANOUS, Ph.D., Associate Professor of Business Education and Office Management.

CLARENCE FIELSTRA, Ph.D., Associate Professor of Education.

HARVEY L. EBY, Ph.D., Associate Professor of Education, Emeritus.

CLARENCE HALL ROBISON, Ph.D., Associate Professor of Education, Emeritus.

EVAN R. KEISLAR, Ph.D., Assistant Professor of Education.

AUBREY L. BERRY, Ed.D., Assistant Professor of Education and Educational Counselor.

WILBUR H. DUTTON, Ed.D., Assistant Professor of Education and Associate Director of Training.

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\*FRANCIS L. BACON, M.A., LL.D., Lecturer in Education.

HOWARD A. CAMPION, Ed.D., Lecturer in Education.

HELEN CHRISTIANSON, Ph.D., Lecturer in Education and Supervisor of Early Childhood Education.

PERCY R. DAVIS, Ed.D., Lecturer in Education.

CLARENCE S. MARSH, Ph.D., Lecturer in Education.

<sup>1</sup> In residence fall semester only, 1948-1949.

<sup>2</sup> In residence spring semester only, 1948-1949.

\* Absent on leave, 1948-1949.

*Training*

JESSE A. BOND, Ed.D., Director of Training.

JOHN A. HOCKETT, Ph.D., Associate Director of Elementary Training.

WILBUR H. DUTTON, Ed.D., Associate Director of Secondary Training.

*Departmental Supervisors*

ROBERT S. HILPERT, M.A., Associate Professor of Art Education.

HELEN CHUTE DILL, M.A., Supervisor of Training, Music.

MARGARET D. GREENE, M.A., Assistant Professor of Physical Education for Women.

DONALD T. HANDY, M.A., Associate Supervisor of Physical Education for Men.

## UNIVERSITY ELEMENTARY SCHOOL

CORINNE A. SEEDS, M.A., Principal of the University Elementary School.

HELEN CHRISTIANSON, Ph.D., Supervisor of Early Childhood Education.

INA K. DILLON, Ed.D., School Counselor.

DIANA W. ANDERSON, M.A., Supervisor of Training, Physical Education.

LAVERNA L. LOSSING, M.A., Supervisor of Training, Music.

NATALIE WHITE, M.A., Supervisor of Training, Art.

GERTRUDE C. MALONEY, M.A., 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.

MARGARET F. TOUGAW, B.Ed., Training Teacher, Second Grade.

CYNTHIANA BROWN, B.A., Training Teacher, First Grade.

HELEN SUE READ, B.S., Training Teacher, Ungraded.

JANE BERNHARDT STRYKER, M.A., Training Teacher, Kindergarten.

BEATRICE NAN MOORE, B.Ed., Training Teacher, Kindergarten.

BLANCHE LUDLUM, M.A., Training Teacher, Nursery School.

RUTH M. HADACEK, B.S., Training Teacher, Nursery School.

PHOEBE JAMES, Assistant in the Elementary School.

*City Training Schools*

## NORA STERRY ELEMENTARY TRAINING SCHOOL

GEORGE F. GRIMES, B.S., 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.

Observation in the classes of specially selected teachers from the Los Angeles school system is available to University students.

## JUNIOR AND SENIOR HIGH SCHOOLS

———, Principal, University High School.

HELEN M. DARSIE, M.A., Vice-Principal, University High School.

JAMES W. LLOYD, 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.

LOWELL M. MCGINNIS, M.A., Vice-Principal, Emerson Junior High School.

FRANCES C. BROOKS, A.B., Counselor, University High School.

MARGARET A. RUENTZ, M.A., Counselor, Emerson Junior High School.

*Supervisors of Secondary Training*

FREEMAN AMBROSE, M.A., Social Science.

ATTILIO BISSIRI, Ed.D., Mathematics and Science.

LUZERNE W. CRANDALL, M.A., English.

ETHEL S. MARTIN, Ed.B., Homemaking.

RALPH A. MASTELLER, M.A., Business Education.

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.

*Letters and Science List.*—Courses 101, 102, 106, 110, 111, 112, 114, 117A–117B, 119, 170, 180, 185 are included in the Letters and Science List of Courses. For regulations governing this list, see page 69.

*The Major.*—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.

## UPPER DIVISION COURSES

Junior standing is prerequisite to all courses in education except course 106, which is open to high sophomores.

*History and Theory of Education*

101. *History of Education.* (3) I.

Mr. Wooton

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. Wooton

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, 11.

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.**

Miss Seagoe

Speech, writing, number, literature, science considered as social institutions evolved through coöperative 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. Keislar

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. Ryans

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.

**117A-117B. Principles of Guidance. (3-3) Yr.**

Mr. MacLean

The philosophy, techniques, and present practices of guidance as applied to the problems of pupil personnel and counseling in the public schools.

The emphasis will be upon educational guidance in 117A; upon vocational guidance in 117B.

**119. Educational Measurement. (3) I, II.**

Mr. Keislar

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.**

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. (2) I, II.**

Mr. Davis

The principles of efficient school administration as exemplified in the practices of progressive cities.

**142. State and County School Administration. (2) II.**

Mr. Berry

Prerequisite: 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, II.

Mr. Davis

Prerequisite: 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.**

Mr. McClusky

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) I.**

Mr. Berry

Prerequisite: 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, II.**

Mr. Jackey

An attempt to develop an understanding and appreciation of the economic and social significance of vocational education in a democracy.

**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. Bacon, 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.

\* Not to be given, 1948-1949.

*Social and Adult Education*

- 180. Social Foundations of Education.** (3) I, II. Mr. Marsh  
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. Marsh  
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, II. Mr. Wootton  
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. Bacon, Mr. Fielstra, 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. Lee, Mr. MacLean
- 199G. Studies in Elementary School Supervision.** (2-4) I, II.  
Mr. Dutton, Mr. Hockett
- 199H. Studies in Audio-Visual Education.** (2-4) I, II. Mr. McClusky
- 199I. Studies in Adult Education.** (2-4) I, II. Mr. Sheats
- 199J. Studies of Nursery-Kindergarten Education.** (2-4) I, II.  
Miss Christianson

## GRADUATE COURSES\*

- 201. History of Education.** (2) I. Mr. Wootton  
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. Wootton  
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.

**210A-210B. Advanced Educational Psychology. (2-2) Yr. Mr. Keislar**

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) I, II.**

Mr. Ryans

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) I, II. Mr. Davis****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 the 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) I, II.**

Mr. Dutton, 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.

**247A-247B. Audio-Visual Education. Advanced Course. (2-2) Yr.**

Mr. McClusky

For supervisors and administrators dealing with the problems involved in developing programs of visual education on the various levels in public education.

**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, 1948-1949.

**251A-251B. Supervision of Instruction and Curriculum. Seminar. (2-2) Yr.** Mr. Fielstra

For graduate students whose major interest is in elementary or secondary supervision.

**253A-253B. Early Childhood Education. Seminar. (2-2) Yr.** Miss McLaughlin

**254A-254B. Experimental Education. Seminar. (2-2) Yr.** Mr. Ryans

A critical review of the use of the scientific method in the solution of educational problems, using research literature and original data.

**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.

**257A-257B. Audio-Visual Education. Seminar. (2-2) Yr.** Mr. McClusky

Prerequisite: course 147 or its equivalent.

Limited to candidates for advanced degrees whose major interest is audio-visual education and to students desiring to carry on research in this area.

**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.**

Mr. Dutton, Mr. Hockett

Admission on consultation with the instructor.

**266A-266B. Vocational Education and Guidance. Seminar. (2-2) Yr.**

Mr. Campion

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. Bacon, Mr. Smith

**275A-275B. The Secondary School Curriculum. Seminar. (2-2) Yr.**

Mr. Fielstra

For graduate students who are interested in studies and research in the curricula of secondary schools.

**276A-276B. Research in Curriculum. (1-4; 1-4) Yr.** Mr. Fielstra

For graduate students who desire to pursue independent research in the curriculum.

**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.**

Mr. Ryans

Limited to candidates for advanced degrees in the field of education; admission by consent of the instructor.

**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 101, 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 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 filed in the Office of the Director of Training. Except by special arrangement, these applications are received at a meeting held either in January or May of the semester preceding that in which teaching is to be done. The exact date of this meeting is announced through official University channels.

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.

*Preparation for Nursery School Teaching*

Students wishing to prepare for nursery school teaching may enroll in the courses listed below for kindergarten-primary credential candidates, and teach under supervision in the University Nursery School. In addition, Education 123 and 124 are recommended.

*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 6). 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 6). 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 6). 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.

**M375 (3 or 4) and M376 (1 to 6). 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 6). 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. (1 to 6) I, II.**

Prerequisite: course 170.

Supplementary teaching in any secondary field.

*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 Credential:**

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).

JOHN LANDES BARNES, Ph.D., Professor of Engineering.

BALDWIN M. WOODS, Ph.D., Professor of Engineering.

MORRIS ASIMOW, Ph.D., Associate Professor of Engineering.

HARRY W. CASE, Ph.D., Associate Professor of Engineering.

WENDELL E. MASON, M.S., M.E., Associate Professor of Engineering.

WESLEY L. ORR, B.S., Associate Professor of Engineering.

LOUIS A. PIPES, Ph.D., Associate Professor of Engineering.

THOMAS A. ROGERS, Ph.D., Associate Professor of Engineering.

DANIEL ROSENTHAL, Ph.D., Associate Professor of Engineering.

CRAIG L. TAYLOR, Ph.D., Associate Professor of Engineering.

C. MARTIN DUKE, JR., M.S., Assistant Professor of Engineering.

ALAN E. FLANIGAN, Ph.D., Assistant Professor of Engineering.

JOSEPH F. MANILDI, Ph.D., 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.

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JOHN C. DILLON, B.A., Lecturer in Engineering.

WARREN A. HALL, B.S., Lecturer in Engineering.

WALTER C. HUETTY, B.S., Lecturer in Engineering.

ADRIAN DEBOE KELLER, M.A., Lecturer in Engineering.

ELLIS F. KING, M.S., Lecturer in Engineering.

JOHN H. MATHEWSON, M.S., Lecturer in Engineering.

JOSEPH W. MCCUTCHAN, B.S., Lecturer in Engineering.

RUSSELL R. O'NEILL, M.S., Lecturer in Engineering.

ALLEN B. ROSENSTEIN, B.S., Lecturer in Engineering.

MICHAEL V. SMIRNOFF, B.S., Lecturer in Engineering.

ALBERT L. STANLY, B.S., Lecturer in Engineering.

GEORGE J. TAUXE, M.S., Lecturer in Engineering.

MYRON TRIBUS, B.S., Lecturer in Engineering.

ROBERT TUCKER, A.B., Lecturer in Engineering.

WILLIAM D. VAN VORST, M.S., Lecturer in Engineering.

WALTER P. WALLACE, B.S., Lecturer in Engineering.

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ADIN E. MATHEWS, M.S., Associate in Engineering.

HARRY C. SHOWMAN, B.S., Associate in Engineering.

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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.

## LOWER DIVISION COURSES

**11A-11B. Surveying Lectures.** (2-2) Yr. Beginning either semester.

Mr. Smirnoff 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.

**11A-11B. Surveying Field Practice.** (1-1) Yr. Beginning either semester.

Field work, three hours per week.

Mr. Smirnoff in charge

Prerequisite or concurrent: course 11A-11B.

**2. Descriptive Geometry.** (3) I, II.

Mr. Mansfield and Staff

Lecture, one hour; laboratory, five hours.

Prerequisite: engineering drawing or one year high-school mechanical drawing, plane geometry. Recommended: solid geometry.

The fundamental principles of descriptive geometry and their application to the solution of engineering problems.

**6. Engineering Drawing.** (3) I, II.

Mr. Mansfield and Staff

Lecture, one hour; laboratory, five hours.

Prerequisite: course 2.

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. Properties of Materials.** (2) I, II.

Mr. Flanigan

Prerequisite: Chemistry 1A and sophomore standing.

The properties of materials; their significance to the engineer; applications to engineering systems; dependency of properties on internal structure; structures and properties of metals and alloys and their response to thermal and mechanical treatments; structures and properties of nonmetallic materials.

**10B. Processing of Engineering Materials.** (2) I, II.

Mr. Asimow

Lecture, one hour; laboratory, three hours.

Prerequisite: course 8.

Study of modern manufacturing processes; casting, cutting, plastic working, fastening (welding, riveting, mechanical methods), finishing, gaging, introductory quality-control, production analysis; emphasis in laboratory on mechanical and physical properties involved in various processes. Arranged field trips.

**12. Survey and Problems in Agricultural Engineering.** (2) I.

Prerequisite: sophomore standing.

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.

Lecture, two hours; laboratory, three hours.

Mr. Orr in charge

This is a unified course covering elementary topics of analytical mechanics and strength of materials (equivalent to courses 102A and 108A).

15A, prerequisite: course 8 (may be taken concurrently), Physics 1A, Mathematics 4A or 6A (may be taken concurrently).

Composition and resolution of coplanar force systems, equilibrium of coplanar force systems, states of stress, simple stress calculations, frames, continuously distributed loads, moments of areas, torsion, beam stresses. Analytical and graphical methods will be employed.

15B, prerequisite: course 15A, Mathematics 4B or 6B (may be taken concurrently).

Composition and resolution of noncoplanar force systems, equilibrium of noncoplanar force systems, friction, deflection of beams, statically indeterminate beams, combined axial and bending loads, eccentric loads, columns, cables.

#### 15AB. Elementary Mechanics. (6) I, II.

Mr. Orr in charge

Prerequisite: course 8 (may be taken concurrently), Physics 1A, Mathematics 4B or 6B (may be taken concurrently).

Combination of courses 15A and 15B.

Lecture, three hours; laboratory, six hours.

#### 30. The Biotechnology of Human Work. (3) I, II.

Prerequisite: Chemistry 1A, Physics 1A. Mr. Case, Mr. C. L. Taylor

The human body with special reference to structure and materials, processes for transformation of energy and performance of physical work; rational and emotional components in the performance of mental work.

#### 48. The Anatomy of Engineering. (1) I, II.

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

Senior courses will be offered only if there is sufficient demand.

#### 100A. Circuit Analysis. (3) I, II.

Mr. Rogers in charge

Prerequisite: Mathematics 4B or 6B, Physics 1C.

Elements of electrical circuit analysis with emphasis on solutions of single phase circuit problems; applications of steady state and transient analysis to linear electrical, mechanical, and thermal systems will be included.

#### 100B. Electrical Machines. (3) I, II.

Mr. Rogers in charge

Prerequisite: course 100A.

Principles and applications of industrially important electrical machines and equipment.

#### 101. Irrigation Institutions and Economics. (2) II.

Mr. Huberty

Prerequisite: junior standing.

Water rights, irrigation institutions and organizations.

#### 102B. Engineering Dynamics. (3) I, II.

Mr. Orr in charge

Prerequisite: course 15B (or 102A), Mathematics 4B or 6B, Physics 1A, 1D-1C; Mathematics 110A recommended concurrently.

Kinematics and kinetics of a particle and of rigid bodies with emphasis on engineering applications.

**102C. Advanced Engineering Dynamics.** (3) I or II.

Prerequisite: courses 102B, 108A or 15B, Mathematics 110B (may be taken concurrently).

Continuation of Engineering 102B, with special reference to the dynamics of rigid bodies such as the gyroscope, vibrations of systems having several degrees of freedom, use of Lagrange's equations, vibration of elastic systems.

**102D Non-linear Mechanics****103. Fluid Mechanics.** (3) I, II.

Mr. E. H. Taylor

Prerequisite: course 102B (may be taken concurrently), course 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. Engineering Circuits Laboratory.** (2) I, II. Mr. Rogers in charge

Laboratory, six hours per week.

Prerequisite: course 100A (may be taken concurrently).

Electrical measurements and instrumentations of mechanical and electrical systems; introductory experiments illustrating the applications of electrical-circuit theory to electrical, mechanical, thermal, acoustical, and fluid systems.

**104B. Engineering Applications of Electrical Machines.** (2) I, II.

Laboratory, six hours per week.

Mr. Rogers in charge

Prerequisite: course 100B (may be taken concurrently), course 104A.

Introductory experiments illustrating the principles of operation and the application of electrical machinery and equipment.

**105A-105B. Heat Transfer and Thermodynamics.** (3-3) Yr. Beginning either semester.

Mr. Boelter in charge

Prerequisite: Mathematics 4B or 6B, Chemistry 1B, Physics 1A, 1C-1D, and full junior standing in the College of Engineering.

The principles of thermodynamics and heat transfer as applied to engines, chemical systems, and various methods for the production or absorption of power, psychrometry, vapors, gases, gas dynamics, theoretical cycles, nonisothermal electrical equipment, and practical problems concerning economic factors.

**106A. Machine Design.** (4) II.

Two lectures and two three-hour laboratory periods per week.

Prerequisite: courses 15B and 102B.

Application of the principles of mechanics, physical properties of materials, and shop processes to the design of machine parts; empirical and rational methods are employed; lectures and problems.

**106B. Product Design.** (3) I.

Mr. Hilpert, Mr. Mason

Lecture, one hour; laboratory, six hours.

Prerequisite: senior standing in engineering, or consent of the instructors.

Engineering and economic calculations involved in the design and manufacture of industrial products; design for function, safety, and appearance.

**107A. Structural Analysis.** (3) II.

Mr. Orr

Prerequisite: courses 102B and 108B, or equivalent.

Statically determinate and indeterminate theory with applications to frame works of machines and structures.

**107G. Analysis of Airplane Structures. (3) I.**

Prerequisite: courses 102B, 107A, 108B, or equivalent.

Solution of typical stress analysis problems, load requirements, thin web beams, monocoque construction, plate-stringer combinations, beam columns, space frames.

**107H. Elasticity and Plasticity. (3) I or II.**

Mr. Rosenthal

Prerequisite: course 108B, Mathematics 110B (may be taken concurrently).

The applications of the theories of elasticity and plasticity to materials (including single crystals). Numerical, analytical, and experimental solutions of various systems, including analogous systems. Criteria of plastic flow and fracture.

**108B. Strength of Materials. (2) I, II.**

Mr. Orr in charge

Prerequisite: course 15B (courses 102A and 108A may be substituted for 15B).

Elastic energy methods, special beam topics, reinforced concrete analysis and design, stress-analysis problems.

**108F. Engineering Materials Laboratory. (1) I, II.**

Mr. Mason in charge

Laboratory, three hours per week.

Prerequisite: courses 10B and 15B.

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.

**110. Route Surveying. (3) II.**

Mr. Smirnoff

Lecture, two hours; field work, three hours.

Prerequisite: courses 11B and 1FB.

Simple, compound, and transition curves; reconnaissance, preliminary, and location surveys; calculations of earthwork and other quantities; field work.

**112. Basic Electronics. (3) I.**

Prerequisite: Physics 1C, Mathematics 4B or 6B, courses 100A and 104A (may be taken concurrently). Not open for credit to those who have credit for Physics 116.

Atomic structure of solids, work function, thermionic and photoelectric emission, secondary emission. Motion of charges in electromagnetic fields. Physical structure of electron tubes. Characteristic curves. Equivalent circuits, methods of analysis of circuits employing electron tubes. Theory of operation of rectifiers, amplifiers, and oscillators. Application of electron tubes to engineering devices and 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 emphasis on the socio-humanistic periphery of engineering. Class meetings will

\* 113A to be given fall and spring semesters; 113B to be given when there is sufficient demand.

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.

**120. Principles of Engineering Investment and Economy. (3) I, II.**

Mr. Manildi

Prerequisite: senior standing in an engineering program of study.

Derivation of formulas used in the theory of investment; studies in economy applied to original and alternative investments in engineering enterprise; replacement problems, relation of personnel and quality-control factors to engineering economy; studies in the economy of governmental projects.

**121. Engineering Aerodynamics. (3) I.**

Prerequisite: course 103.

Wing characteristics, performance determination, loading conditions, static and dynamic stability and control of airplanes.

**125. Building Services. (2) I.**

Mr. Orr

Prerequisite: senior standing in engineering.

Basic principles underlying the lighting, ventilation, and acoustics of buildings, water supply, sewage disposal, traffic, and safety within buildings.

**130. The Biotechnology of the Human Environment. (3) I, II.**

Mr. Case, Mr. C. L. Taylor

Prerequisite: junior standing in engineering.

Physical, physiological, and psychological components of the interaction between man and the environment created by machines, processes, structures, circuits, including bacterial and socio-economic vectors. Not open for credit to students who have credit for course 30B.

**145. Tool Engineering. (3) II.**

Lecture, two hours; laboratory, two hours.

Prerequisite: senior standing in an engineering program of study and course 106 (may be taken concurrently).

The selection of tooling for production; design of tools, jigs, fixtures, dies, and production-type gauges; design and tooling of automatic machines.

**153. Thermal and Luminous Radiation. (3) I or II.**

Mr. Bromberg

Prerequisite: course 105B.

The spectral characteristics of sources of thermal radiation and the spectral behavior of transmitters, reflectors, and absorbers. Emphasis will be placed upon illumination, fired heat exchangers, and radiant heating devices.

**165. Design of Servomechanisms. (3) I or II.**

Mr. Rogers

Prerequisite: Mathematics 110B or Engineering 181 or 100A; course 121 recommended.

The fundamentals of servomechanisms including: the oscillatory behavior of linear systems; the theory of dynamic stability, the analysis of servomechanisms with the aid of the frequency-response approach, the design of servocomponents, the dynamic behavior of airplanes, the design analysis of certain existing autopilots, nonlinear systems.

**170. Sales Engineering. (3) I.**

Mr. Case

Two class hours and field trips.

Prerequisite: senior standing in engineering.

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.

**171. Engineering Organization and Administration. (3) II. Mr. Case**

Prerequisite: senior standing in engineering.

The principles of organization and administration as applied to engineering in industry will be considered. Special problems pertaining to the use of organizational charts, the assignment of administrative responsibility, the engineering use of job descriptions, job evaluation, job analysis, and efficiency surveys as well as problems pertaining to the selection, training, and supervision of technical employees will be discussed.

**172. Principles of Industrial Safety. (3) I or II. Mr. Mathewson**

Prerequisite: senior standing in engineering.

Delineation of the industrial accident-prevention problem. Analysis and synthesis of all major elements in safety engineering, e.g., plant layout, machine and process control devices and safeguards, applicable laws and codes, occupational health-hazards, medical controls, explosion- and fire-prevention and protection, industrial traffic, organizational and functional responsibility.

**173. Fire Protection and Control. (3) I. Mr. Mathewson**

Prerequisite: senior standing in engineering.

Relationship between fire losses and national economy, conservation of national resources and sociological progress. Generation of fires, rates of propagation and properties of elements involved, application of anticomcombustibles, elimination or deactivation of sources, precautionary measures, fire extinguishing systems, building and fire codes and ordinances.

**180. Advanced Kinematics of Mechanisms. (3) II. ———**

Prerequisite: courses 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, servomechanisms, calculating machines, conveyors, and printing presses.

**181. Mechanical and Electrical Dynamical Systems. (3) I or II. Mr. Pipes**  
Prerequisite: course 15B, 100A, 102B, or equivalents; Mathematics 110B or 119.

Formulation and solution of equations of motion for dynamic systems in engineering; studies of selected instrumentation principles by application of the method of analogy to electrical and mechanical systems.

**182. Engineering System Solutions by Operational Methods. (3) I or II. Mr. Barnes**  
Prerequisite: Mathematics 110B.  
Analysis of acoustical, electrical, mechanical, and thermal systems by means of operational techniques, with emphasis on the Laplace transform.

**183A-183B. Engineering Statistics. (3-3) I or II. ———**

Prerequisite: junior standing in engineering.

Fundamental concepts and laws of probability. Statistical methods of decision and their operating characteristics. Illustrations and examples of engineering interest. Applications to production control, design, experimentation.

**198. Directed Group Studies for Upper Division Students. (1-5) I, II.**

Prerequisite: senior standing in engineering. Mr. Boelter in charge

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.**

Prerequisite: senior standing in engineering. Mr. Boelter in charge

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****229. Advanced Theory of Servomechanisms. (3) I, II. Mr. Rogers and Staff**

Prerequisite: course 165 or 182.

Analysis of lumped and distributed parameter linear invariant closed-loop systems with special emphasis on stability and transmission characteristics; synthesis of linear invariant systems; analysis of nonlinear systems including on-off types; signal-to-noise ratio considerations.

**277. Compressible Fluids. (3) I.**

Prerequisite: graduate standing.

Fundamentals of subsonic and supersonic flow, shock waves, different theoretical methods, laboratory equipment, and procedures for supersonic investigations.

**298. Seminar in Engineering. (1-5) I, II.**

Mr. Boelter in charge

Seminars may be organized in advanced technical fields. Course may be repeated provided no duplication exists.

**299. Research in Engineering. (1-5) I, II.**

Mr. Boelter in charge

Investigation of advanced technical problems.

**INSTITUTE FOR NUMERICAL ANALYSIS**

Attention is directed to the Institute for Numerical Analysis whose activities are described on page 272.



## ENGLISH

LILY BESS CAMPBELL, Ph.D., Professor of English.

EARL LESLIE GRIGGS, Ph.D., Professor of English.

EDWARD NILES HOOKER, Ph.D., Professor of English.

SIGURD BERNHARD HUSTVEDT, Ph.D., Professor of English.

ALFRED EDWIN LONGUEIL, Ph.D., Professor of English.

WILLIAM MATTHEWS, Ph.D., Professor of English.

FRANKLIN PRESCOTT ROLFE, Ph.D., Professor of English.

<sup>1</sup>DIXON WECTER, Ph.D., Professor of English.

BRADFORD ALLEN BOOTH, Ph.D., Associate Professor of English.

LLEWELLYN MORGAN BUELL, Ph.D., Associate Professor of English.

HUGH GILCHRIST DICK, Ph.D., Associate Professor of English.

CARL SAWYER DOWNES, Ph.D., Associate Professor of English.

MAJL EWING, Ph.D., Associate Professor of English (Chairman of the Department).

<sup>1</sup>CLAUDE JONES, Ph.D., Associate Professor of English.

HARRISON MANLY KARR, Ph.D., Associate Professor of Speech.

<sup>2</sup>WESLEY LEWIS, Ph.D., Associate Professor of Speech.

<sup>2</sup>JOHN FREDERIC ROSS, Ph.D., Associate Professor of English.

HUGH THOMAS SWEDENBERG, JR., Ph.D., Associate Professor of English.

HERBERT FRANCIS ALLEN, Ph.D., Associate Professor of English, Emeritus.

MARGARET SPRAGUE CARHART, Ph.D., Associate Professor of English, Emeritus.

HARRIET MARGARET MACKENZIE, Ph.D., Associate Professor of English, Emeritus.

MARTIN PERRY ANDERSEN, Ph.D., Assistant Professor of Speech.

JOHN JENKINS ESPEY, B.Litt., M.A. (Oxon.), Assistant Professor of English.

RICHARD GORDON LILLARD, Ph.D., Assistant Professor of English.

CHARLES WYATT LOMAS, Ph.D., Assistant Professor of Speech.

<sup>\*</sup>ADA BLANCHE NISBET, Ph.D., Assistant Professor of English.

JAMES EMERSON PHILLIPS, JR., Ph.D., Assistant Professor of English.

CLIFFORD HOLMES PRATOR, Ph.D., Assistant Professor of English.

WILLIAM WARTHIN TAYLOR, Ph.D., Assistant Professor of English.

JAMES LEMUEL WORTHAM, Ph.D., Assistant Professor of English.

ARTHUR STUART DALEY, Ph.D., Instructor in English.

ELISE STEARNS HAHN, Ph.D., Instructor in Speech.

DONALD ERWIN HARGIS, Ph.D., Instructor in Speech.

PAUL ALFRED JORGENSEN, Ph.D., Instructor in English.

BLAKE REYNOLDS NEVIUS, Ph.D., Instructor in English.

<sup>1</sup> In residence first semester only, 1948-1949.

<sup>2</sup> In residence second semester only, 1948-1949.

<sup>\*</sup> Absent on leave, 1948-1949.

ARNOLD JOHN STAFFORD, Ph.D., Instructor in English.

JOHN LINCOLN STEWART, Ph.D., Instructor in English.

ANN LOUISE HIRT, Ph.D., Lecturer in Speech.

MORRIS VAL JONES, M.A., Lecturer in Speech.

ROBERT STARR KINSMAN, M.A., Lecturer in English.

JOHN CLYDE LOFTIS, JR., M.A., Lecturer in English.

JAMES KING LOWERS, M.A., Lecturer in English.

JAMES TIPTON MERRIN, JR., M.A., Lecturer in English.

GILBERT STUART MOORE, M.A., Lecturer in English.

JAMES MURRAY, Ed.D., Lecturer in Speech.

RALPH RICHARDSON, M.A., Lecturer in Speech.

LAWRENCE WYNN, M.A., Lecturer in English.

Students must have passed Subject A (either examination or course) before taking any course in English. Regulations concerning Subject A will be found on page 35 of this catalogue.

*Letters and Science List.*—All undergraduate courses in English and Speech are included in the Letters and Science List of Courses. For regulations governing this list, see page 69.

*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 (6 units); (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.

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 (6 units); (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 complete 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.

#### 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) Speech 3A; 1A or 3B; (3) English 106 or 31 (preferably 106L); 117J; 130A-130B or 190A-190B; 115 or 153; (4) 6 units from Eng-

lish 114A-114B, 122A-122B, 125C-125D, 125G-125H; (5) 6 units from English 156, 157, 158, 167, 177, 187; (6) 6 units from Speech 106, 107, 110A, 122, 140, and Theater Arts 103; (7) English 370, to be taken in the first semester of graduate residence; (8) 6 units from English 221, 222, 223, 224, 225, 226, or their equivalent.

(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 Speech 1A, 3A; (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.*

The requirement is ordinarily the undergraduate major in English or its equivalent. No graduate student may take a graduate course in English who has 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 134. The department follows Plan II, as described on page 136. The Master's Comprehensive Examination consists of a three-hour written examination and a one-hour oral examination, which are given each semester at the same time as the Senior Comprehensive Examination.

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 complete the following courses in English: course 200; one course chosen from 110, 111, 208, 211, 212; four courses chosen from 221, 222, 223, 224, 225, 226; one graduate seminar (250-270); elective units, chosen from upper division or graduate courses, sufficient to complete the total of 24 units required for the degree.

### *D. Requirements for the Doctor's Degree.*

1. For the general requirements, see page 137.

2. Departmental requirements: (a) On entering the department the candidate will present to the chairman a written statement of his preparation in French, German, and Latin. He 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 is necessary. (b) In the first year (normally two semesters) of graduate study, the candidate will complete the requirements for the master's degree. At the end of that year, however, he will take, not the Master's Comprehensive Examination, but Part I of the Qualifying Examinations for the doctor's degree, passing which will entitle him to the master's degree. Part I of the Qualifying Examinations will consist of two three-hour written examinations and a one-hour oral examination. If the candidate does well in these examinations, he will be encouraged to proceed further with graduate study. (c) Normally the candidate will devote a second year to the completion of the language requirement (208, 211, 212) and the taking of graduate seminars in English or suitable courses in other departments, after which he will take Part II of the Qualifying Examinations and be advanced to candidacy. Of course

this period may be curtailed or extended according to circumstances. Part II of the Qualifying Examinations will consist of three three-hour written examinations and a two-hour oral examination in the candidate's special field and in two other fields to be chosen in consultation with his adviser. No special examination in linguistics is required, but questions on the language will appear at appropriate points in the examinations on literature. (d) A final year (which under the university rules may not be curtailed) will normally be devoted by the candidate chiefly to the preparation of his dissertation, after which he will take his final oral examination. During this year the candidate may satisfy the residence requirement either by taking additional seminars or by registering in English 290.

### 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.
- 3A. English for Foreign Students.** (4) I, II. Mr. Jones  
For foreign students only. Pronunciation, speaking, grammar, reading, and writing of English. Required for those who fail to pass the examination in English and who are not qualified to take course 3B.
- 3B. English for Foreign Students.** (4) I, II. Mr. Prator  
Continuation of course 3A. Required of those who complete course 3A.
- \*4A. World Literature: Dramatic Comedy.** (1) I. \_\_\_\_\_
- \*4B. World Literature: Dramatic Tragedy.** (1) II. \_\_\_\_\_
- \*4C. World Literature: the Novel.** (1) I. Mr. Ewing in charge
- \*4D. World Literature: the Novel.** (1) II. Mr. Ewing in charge
- 4E. World Literature: Lyric Poetry.** (1) I. Mr. Ewing in charge
- 4F. World Literature: Narrative Poetry.** (1) II. Mr. Ewing in charge
- \*5A-5B. Great Books.** (1-1) Yr. Mr. Ewing in charge

#### *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

Course 1A-1B is prerequisite to all sophomore courses in English, except 110, 111, 115, 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.

\* Not to be given, 1948-1949.

**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 year 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, II.

Mr. Espey, Mr. Lillard

**106B. Verse Writing.** (3) II.

Mr. Jones

Prerequisite: course 153 or consent of the instructor.

**106C. Critical Writing.** (2) I, II.

Mr. Wortham

**106D-106E. Fundamentals of Dramatic Writing.** (3-3) Yr. Mr. Macgowan

For admission to this course, candidates should submit to the instructor an original one-act play or one act of a full length play by August 1, 1948.

**106F. Exposition.** (2) I, II.

Mr. Espey, Mr. Lillard, Mr. Stewart

**106G. Special Projects in Writing.** (3) II.

Mr. Lillard

Prerequisite: an A grade in another 106 course, submission of evidence of a satisfactory project, and consent of the instructor.

**106L. Advanced Composition for Teachers.** (2) I, II.

Mr. Taylor

Designed primarily for candidates for the General Secondary Teaching Credential.

**110. Introduction to the English Language.** (3) I.

Mr. Matthews

**111. The English Language in America.** (3) II.

Mr. Matthews

**114A-114B. English Drama from the Beginning to the Present.** (3-3) Yr.

Miss Campbell, Mr. Dick

**114C. Contemporary Drama.** (2) II.

Miss Campbell

**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.

**117J. Shakespeare.** (3) I, II.

The Staff

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. Longuell

**125C-125D. The English Novel from the Beginning to the Present.** (3-3) Yr.

Mr. Jones, Mr. Booth

**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. Lillard

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. Prerequisite: course 130A or consent of the instructor. Mr. Booth

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) I. Mr. Lillard  
The main currents of thought in American life as reflected in literature.

**135. American Fiction.** (3) II. Mr. Booth  
The history of the American novel and short story from the beginning to the present day.

**136. American Humor and Satire.** (3) II. 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, Mr. Espey

**155. Literary Criticism.** (3) II. Mr. Griggs

**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, Mr. Swedenberg

**167. The Age of Pope and Johnson.** (3) I, II. Mr. Hooker, Mr. Swedenberg

**177. The Romantic Age: 1784-1832.** (3) I, II. Mr. Longueil, Mr. Griggs

**187. The Victorian Age: 1832-1892.** (3) I, II. Mr. Rolfe, Mr. Griggs

**190A. Literature in English from 1900.** (2) I. Mr. Ewing  
Criticism; the novel; biography.

**190B. Literature in English from 1900.** (2) II. Mr. Ewing  
Poetry.

**197. Senior Survey.** (3) 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.

\* Not to be given, 1948-1949.

## COMPREHENSIVE FINAL EXAMINATION

The Comprehensive Final Examination is taken at the end of the senior year by majors working under Plan II and by English and Speech majors. 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 42-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. Longueil in charge

## GRADUATE COURSES

200. Bibliography. (3) I, II.	Mr. Dick
208. The Development of Modern English. (3) I.	Mr. Matthews
211. Old English. (3) I.	Mr. Matthews
212. Middle English. (3) II.	Mr. Matthews
221. Medievalism. (3) I.	Mr. Matthews
222. The Renaissance. (3) II.	Miss Campbell
223. Neo-Classicism. (3) I.	Mr. Hooker
224. Romanticism. (3) I.	Mr. Griggs
225. Victorianism. (3) II.	Mr. Rolfe
226. American Literature. (3) II.	Mr. Lillard
*250. History of the English Language. Seminar. (3)	Mr. Matthews
*251A-251B. The Ballad. Seminar. (3-3) Yr.	Mr. Hustvedt
252A-252B. History of Literary Criticism. Seminar. (3-3) Yr.	Mr. Griggs
260A, B, C. Studies in Old and Middle English. Seminar.	
260A. Old English Poetry. (3) II.	Mr. Matthews
260B. Early English Metrical Romances. (3) I.	Mr. Hustvedt
*260C. Chaucer. (3) II.	Mr. Matthews
262A, B, C, D. Studies in Elizabethan Literature. Seminar.	
*262A. Shakespeare. (3) I.	Miss Campbell
*262B. Shakespeare. (3) II.	Miss Campbell
262C. Spenser. (3) II.	Miss Campbell
*262D. Studies in Elizabethan Drama. (3) I.	Miss Campbell
263A, B, C, D, E, F. Studies in Seventeenth-Century Literature. Seminar.	
*263A. Trends in Seventeenth-Century Prose. (3) I.	Mr. Hooker
*263B. Trends in Seventeenth-Century Poetry. (3) II.	Mr. Hooker

\* Not to be given, 1948-1949.

- \*263C. *Studies in Drama, 1660-1790.* (3) II. Miss Campbell  
 \*263D. *The Theory of Fiction, 1600-1700.* (3) I. \_\_\_\_\_  
 263E. *Milton.* (3) II. Mr. Hustvedt  
 263F. *Dryden and His Contemporaries.* (3) I. Mr. Hooker
- 264A, B, C, D. *Studies in Eighteenth-Century Literature. Seminar.*  
 264A. *Pope and His Contemporaries.* (3) II. Mr. Hooker  
 \*264B. *The English Novel, 1700-1750.* (3) I. \_\_\_\_\_  
 \*264C. *The English Novel, 1750-1800.* (3) II. \_\_\_\_\_
- 265A, B, C. *Studies in Nineteenth-Century Literature. Seminar.*  
 \*265A. *Coleridge and His Contemporaries.* (3) II. Mr. Griggs  
 265B. *Studies in Victorian Prose.* (3) II. Mr. Griggs  
 \*265C. *Studies in Victorian Poetry.* (3) I. Mr. Griggs
- 270A, B, C, D, E, F, G. *Studies in American Literature. Seminar.*  
 \*270A. *Colonial America: Letters and Ideas.* (3) II. \_\_\_\_\_  
 \*270B. *Literature of the Atlantic Seaboard.* (3) I. Mr. Weeter  
 \*270C. *Literature of the Westward Expansion.* (3) II. \_\_\_\_\_  
 \*270D. *Literature of Conflict, 1850-1890.* (3) I. Mr. Weeter  
 270E. *Modern American Literature (since 1900).* (3) I. Mr. Weeter  
 \*270F. *Backgrounds of American Literature Through the Civil War.*  
 (3) I. Mr. Weeter  
 \*270G. *Backgrounds of American Literature Since the Civil War.* (3) II. Mr. Weeter
290. *Special Problems.* (1-6 units each semester) I, II. The Staff

#### PROFESSIONAL COURSE IN METHOD

370. *The Teaching of English.* (3) I, II. Mr. Moore  
 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.

#### SPEECH

Students must have passed Subject A (either examination or course) before taking any course in speech. Regulations concerning Subject A will be found on page 35 of this catalogue.

*Preparation for the Major.*—Speech 1A, 1B, 3A, 3B with an average grade of C or higher; English 1A-1B, 36A-36B; History 7A-7B or 8A-8B; Psychology 21, 22.

*The Major.*—Plan I. For the general undergraduate: the program must include (a) Speech 106, 107, 110A, 111A; 135 or 137; (b) 9 units of electives in upper division courses in speech; (c) 6 units of electives in upper division courses in each of two of the Departments of Anthropology-Sociology, Economics, English, Linguistics and General Philology (170 and 171), History, Philosophy, Political Science, and Psychology, the courses to be approved by the departmental adviser.

Plan II. For prospective teachers of speech who are not candidates for the General Secondary Credential: the program must include (a) Speech 110A, 111A, 122, 140; 135 or 137; (b) Theater Arts 103; (c) Linguistics and General Philology 170 and 171; (d) 6 units of electives in upper division courses in speech; (e) 6 units of electives in upper division courses in one of

\* Not to be given, 1948-1949.



the Departments of Anthropology-Sociology, Education, English, History, Political Science, Psychology, and Theater Arts, the courses to be approved by the departmental adviser.

*Requirements for the General Secondary Credential.*—For the field major and the field minor in English and Speech, see page 216.

#### LOWER DIVISION COURSES

- 1A. Elements of Public Speaking.** (3) I, II. The Staff  
The principles and practice of effective speech composition and delivery.
- 1B. Elements of Public Speaking.** (3) I, II. The Staff  
Prerequisite: course 1A.  
Application of the principles of effective speech composition and delivery to group discussion and public address.
- 3A. Basic Voice Training.** (3) I, II. The Staff  
Voice physiology, phonetics, and voice drills.
- 3B. Elementary Interpretation.** (3) II. The Staff  
Prerequisite: course 3A.  
Development of the student's ability to communicate prose and poetry orally with understanding and appreciation.

#### UPPER DIVISION COURSES

- 106. Principles and Types of Public Discussion.** (3) I. Mr. Andersen  
Prerequisite: course 1B or consent of the instructor.  
Analysis of the purposes, principles, and types of public discussion. Practice in organizing group discussion.
- 107. Principles of Argumentation.** (3) II. Mr. Lewis  
Prerequisite: 6 units of lower division speech courses.  
Analysis of propositions, tests of evidence, briefing. Study of hindrances to clear thinking, of ambiguity of terms, of prejudice.
- 110A-110B. Advanced Public Speaking.** (3-3) Yr. Mr. Lewis, Mr. Lomas  
Prerequisite: courses 1A-1B.  
Practice in extemporaneous speaking; preparation of the occasional address.
- 111A. Theories and Techniques of Interpretation.** (3) I. Mr. Hargis  
Prerequisite: courses 3A-3B or the equivalent.  
A study of the schools, principles, and techniques of oral interpretation.
- 111B. Oral Interpretation of Literature.** (3) II. ———  
Prerequisite: course 111A and consent of the instructor.  
The understanding and appreciation of literature through training in the oral communication of various literary forms.
- 122. Diction and Voice.** (3) I, II. Mr. Karr  
Prerequisite: courses 1A and 3A, or the equivalent.  
Advanced studies in breath control, tone production, voice projection, articulation, and pronunciation.
- 135. History of British Public Address.** (3) I. Mr. Lomas  
Critical study of speeches by leading British orators from the eighteenth century to the present time. Relationship of speakers to issues and social movements of their day.

- 137. History of American Public Address. (3) II.** Mr. Lomas  
Critical study of speeches by leading American orators from the colonial period to the present time. Relationship of speakers to issues and social movements of their day.
- 140. Principles of Speech Correction. (3) I.** Mrs. Hahn  
Problems and methods of correcting speech defects.
- 141. Speech Correction for the Deaf. (2) II.** Mr. Lewis  
Experiments with techniques calculated to promote in the deaf intelligible and natural vocal control.
- 142. Clinical Methods of Speech Correction. (2) II.** Mrs. Hahn  
Prerequisite: course 140.  
Observation and practice of clinical methods of speech correction.
- \*170. Introduction to Oratory. (3)** Mr. Lewis
- 190A-190B. Forensics. (1-1) Yr.** Mr. Lewis, Mr. Murray  
Prerequisite: consent of the instructor.

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\* Not to be given, 1948-1949.

## ENTOMOLOGY

A Division of the Department of Agriculture

ROLAND N. JEFFERSON, Ph.D., Assistant Professor of Entomology.

ROGER F. ANDERSON, Ph.D., Assistant Professor of Entomology.

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. Weekly field trips during the last half of the course. 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.

**144. Insects Affecting Ornamental Plants and Flower Crops. (4) II.**

Mr. Jefferson, Mr. Anderson

Lectures, three hours; laboratory, three hours. Recommended preparation: Zoölogy 1, Entomology 1. Offered in alternate years.

Biology, economic importance, and control of insects affecting field flower crops, greenhouse and nursery plants, and ornamental trees and shrubs. Insecticides; spraying, dusting, and fumigating methods and equipment; life history and control methods for specific crop pests.

**199A-199B. Special Study for Advanced Undergraduates. (2-4; 2-4) Yr.**

Mr. Ebeling

Prerequisite: senior standing and consent of the instructor.

\* Not to be given, 1948-1949.

## FOLKLORE

WAYLAND D. HAND, Ph.D., Associate Professor of German.

*Letters and Science List.*—All courses.

## UPPER DIVISION COURSE

**145. Introduction to Folklore. (3) I.**

Mr. Hand

Prerequisite: 6 units of upper division work in anthropology, English, French, German, Italian, or Spanish. A reading knowledge of a foreign language is desirable, but not prerequisite to the course.

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.

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\* Not to be given 1948-1949.

## FRENCH

ROBERT V. MERRILL, Ph.D., Professor of French (Chairman of the Department).

\*PAUL PÉRIORD, Ph.D., Professor of French Civilization.

WILLIAM A. NITZE, Ph.D., L.H.D., Professor of French, Emeritus.

MYRON IRVING BARKER, Ph.D., Associate Professor of French.

FRANCIS J. CROWLEY, Ph.D., Associate Professor of French.

ALEXANDER GREEN FITE, Ph.D., Associate Professor of French.

CLINTON C. HUMISTON, Ph.D., Associate Professor of French.

MARIUS IGNACE BIENCOURT, Docteur de l'Université de Paris, Assistant Professor of French.

\*L. GARDNER MILLER, Docteur de l'Université de Strasbourg, Assistant Professor of French.

Oreste F. PUCCIANI, Ph.D., Assistant Professor of French.

HARRY F. WILLIAMS, Ph.D., Assistant Professor of French.

PAUL BONNET, Lic. ès-Lettres, Associate in French.

MADELEINE LETESSIER, A.B., Associate 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 69.

*Preparation for the Major.*—French 1, 2, 3, 4, 42A–42B, or their equivalents. Prospective candidates for the M.A. or for a teaching credential must have completed Latin 2 or its equivalent before receiving the B.A. Courses in European history, literature, and philosophy, and in an additional foreign language, are strongly recommended.

*The Major.*—Required: 24 units of upper division French, including courses 101A–101B, 109A–109B, 112A–112B (or 113A–113B), and at least one other year-course in literature (except 112A–112B and 113A–113B).

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 Thursday in January and on the third Thursday in May.

Students intending majors in French must consult a departmental counselor before registering for French courses in the upper division.

## 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.

\* Absent on leave, 1948–1949.

- 1. Elementary French. (4) I, II.** Miss Letessier in charge  
Sections meet five hours weekly.
- 1G. Reading Course for Graduate Students. (No credit) I, II.** Mr. Williams in charge
- 2. Elementary French. (4) I, II.** Miss Letessier in charge  
Sections meet five hours weekly.  
Prerequisite: course 1 or two years of high school French.
- 3. Intermediate French. (4) I, II.** Mr. Bonnet in charge  
Sections meet five hours weekly.  
Prerequisite: course 2 or three years of high school French.
- 4. Intermediate French. (4) I, II.** Mr. Bonnet in charge  
Sections meet four hours weekly.  
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.** \_\_\_\_\_  
Prerequisite: course 4.
- 25A-25B. Advanced French. (3-3) Yr.** Miss Letessier  
Prerequisite: course 4.
- 42A-42B. French Civilization. (2-2) Yr.** Mr. Pucciani  
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; but a student whose major is not French may be admitted to any upper division course by permission of the instructor.

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 each semester.** Mr. Biencourt in charge
- 109A. Survey of French Literature and Culture. (3) I.** Mr. Merrill  
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. Merrill  
Prerequisite: course 109A.  
The eighteenth, nineteenth, and twentieth centuries.

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\* Not to be given, 1948-1949.

**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.

**109N. A Survey of French Literature and Culture. (3) II.** Mr. Humiston  
Prerequisite: course 109M.

The eighteenth, nineteenth, and twentieth centuries.

**\*112A-112B. The Nineteenth Century. (2-2) Yr.** Mr. Barker  
Lyric poetry, the short story, literary criticism, social movements, and philosophy in the nineteenth century.

**113A. The Nineteenth-Century French Theater. (2) I.** Mr. Barker

**113B. The Nineteenth-Century French Novel. (2) II.** Mr. Barker

**114A\*-114B. Contemporary French Literature. (2-2) Yr.** Mr. Pucciani  
The French novel, poetry, and essay since 1920. Romain, Maurois, Mauriac, Giraudoux, Malraux, Gide, Martin du Gard, Valéry, Aragon, and others.

**115A-115B. Modern French Drama. (2-2) Yr.** Mr. Fite  
Outstanding plays of the last half-century. Le Théâtre d'idées en France, Porto-Riche, Maeterlinck, Claudel, Romain, Lenormand, Raynal, Sarment, Sartre, and others.

**118A-118B. The Sixteenth Century. (2-2) Yr.** Mr. Humiston  
Evolution of thought in the Renaissance as represented by Rabelais, Marot, Calvin, Marguerite de Navarre, the Pléiade, Montaigne, and others.

**120A-120B. The Seventeenth Century. (2-2) Yr.** Mr. Merrill  
Le grand siècle de Louis XIV. Raison, volonté, passions; l'idéal classique de la nature humaine. Théâtre, roman, les moralistes.

**121A-121B. The Eighteenth Century. (2-2)** Mr. Crowley  
121A. Readings and discussions of the outstanding works of the literature and thought of the period (1680-1789) omitting Voltaire and Rousseau.  
121B. Limited to study of Voltaire and Rousseau.

**130A-130B. Grammar, Composition, and Style. (2-2) 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.

Cours de Style. Study of phonetics, morphology, and syntax of the modern French language. Historical development of modern grammar. Original composition and oral practice.

**199A-199B. Special Studies in French. (2-2) Yr.** The Staff  
Prerequisite: consent of the instructor. Guided readings and reports.

#### GRADUATE COURSES

Prerequisite for candidates for the M.A. or a teaching credential: the bachelor's degree in French, including a year of college Latin, or their equivalent.

\* Not to be given, 1948-1949.

- 204A-204B. Studies in Voltaire.** (2-2) Yr. Mr. Crowley  
A study of various phases of Voltaire—the dramatist, the poet, the social reformer, the thinker, the historian, the iconoclast, etc. Investigation of related problems.
- 206A-206B. Old French Readings.** (2-2) Yr. Mr. Merrill  
*Roland*, Marie de France, Chrétien de Troyes, lyrics.
- \*214A-214B. French Versification.** (2-2) Yr. Mr. Biencourt
- 219A. Romanticism.** (2) I. Mr. Barker  
Studies in the origins and development of Romanticism from 1789 to 1830.
- \*219B. Romanticism.** (2) I. Mr. Barker  
Studies in the decline of Romanticism and rise of Realism and other contemporary literary movements, 1830-1854.
- 219C. Romanticism.** (2) II. Mr. Barker  
Studies in literary movements during the second Empire, 1854-1870.
- \*219D. Romanticism.** (2) II. Mr. Barker  
Stendhal. Studies in his works and influence.
- 257A-257B. The Sources of French Tragedy.** (2-2) Yr. Mr. Humiston  
Greek, Latin, and Italian theoreticians of tragedy and their influence on the writers of tragedy in the sixteenth century.
- 290. Research in French.** (1-6) I, II. The Staff  
Prerequisite: consent of the instructor.
- 298A-298B. Problems of Literary Criticism.** (2-2) Yr. Mr. Fite  
Intensive study and analysis of a single author in the modern field of French literature.

#### PROFESSIONAL COURSE IN METHOD

- 370. The Teaching of French.** (2) I. Mr. Pucciani  
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 343)

- Romance Languages and Literature 201A-201B. French Historical Grammar and Methodology of Romance Linguistics.** (2-2) Yr. Mr. Williams
- \*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.
- \*Romance Languages and Literatures 252. Methodology of Romance Philology.** (2) II. Mr. Zeitlin

\* Not to be given, 1948-1949.



## GEOGRAPHY

CLIFFORD M. ZIERER, Ph.D., Professor of Geography (Chairman of the Department).

GEORGE MCCUTCHEEN MCBRIDE, Ph.D., Professor of Geography, Emeritus.

RUTH EMILY BAUGH, Ph.D., Associate Professor of Geography.

ROBERT M. GLENDINNING, Ph.D., Associate Professor of Geography.

\* JOSEPH E. SPENCER, Ph.D., Associate Professor of Geography.

HENRY J. BRUMAN, Ph.D., Assistant Professor of Geography.

H. LOUIS KOSTANICK, Ph.D., Assistant Professor of Geography.

CLIFFORD H. MCFADDEN, Ph.D., Assistant Professor of Geography.

MYRTA L. MCCLELLAN, M.A., Assistant Professor of Geography, Emeritus.

———, Assistant Professor of Geography.

BENJAMIN E. THOMAS, Ph.D., Instructor in Geography.

W. GLENN CUNNINGHAM, M.A., Lecturer in Geography.

RICHARD F. LOGAN, M.A., 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 69.

Two principal objectives may be recognized for those who select geography as a major: (1) *professional* training in the subject and preparation for graduate study, and (2) *nonprofessional* training for the student who wishes to gain a broad understanding of the world and its people. Most courses in the department are designed to meet the needs of both groups of students but some are offered primarily to meet the special requirements of students who plan to make professional use of geography.

*Preparation for the Major.*—Geography 1A-B, 3, and 4 are required of all majors. In addition, Geology 2, or 5, or 101 is required of professional majors. Introductory courses in anthropology, botany, economics, geology, history, political science, and the modern foreign languages are recommended for all majors.

*The Major.*—The minimum requirement for all majors is 30 units of upper division work in geography.

*Professional majors* are required to take as Group I: Geography 101, 105, 115, 175; and three courses from Group II: Geography 121, 122A, 122B, 123A, 123B, 124A, 124B, 125, 131; plus three courses from Group III: Geography 113, 118, 142, 155, 161, 165, 171, 173, 181.

*Nonprofessional majors* are required to take as Group I: Geography 115 and 175; and normally four courses from Group II: Geography 121, 122A, 122B, 123A, 123B, 124A, 124B, 125, 131; plus four courses from Group III: Geography 101, 105, 113, 118, 142, 155, 161, 165, 171, 173, 181.

A list of upper division courses from other departments recommended for geography majors may be secured from the departmental advisers. The development of some competence in an allied subject is recommended for professional majors.

\* In residence spring semester only, 1948-1949.

## LOWER DIVISION COURSES

**1A. Elements of Geography. (3) I, II.**

Mr. Glendinning, Mr. Logan, Mr. Thomas

Students who have had course 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. Bruman, Mr. Spencer

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. Delimitation of the major geographic regions of the world.

**3. Introduction to Climate and Weather. (3) I.**

Mr. Logan

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. (2) I, II.**

Mr. McFadden

Lecture, one hour; laboratory, two 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. Cunningham, Mr. Kostanick, Mr. McFadden

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 course 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. Cunningham, Mr. Kostanick, Mr. McFadden

Prerequisite: course 1A, or 5A, or 100. Students who have credit for course 1B will receive only half credit for course 5B.

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. Thomas

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.

*Technique Courses*

- 101. Fundamentals of Geographic Field Work.** (3) II. Mr. Logan  
Saturdays. Prerequisite: course 1A-1B or 5A-5B, and 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) I, II. Mr. MacFadden  
Prerequisite: course 4 and one of the following: 1A-1B, or 5A-5B, or 100, or consent of the instructor.  
Practical map drawing and graphic representation of geographic data.

*Physical Geography*

- 113. General Climatology.** (3) II. Mr. Logan  
Prerequisite: course 3 and one of the following: 1A-1B or 5A-5B, or 100, or 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) I, 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) I. ———  
Prerequisite: course 1A-1B, or 5A-5B, or 100.  
Character, distribution, and environmental relationships of the principal vegetation regions of the world.

*Regional Courses*

- 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.

\* Not to be given, 1948-1949.

- 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, Mr. Kostanick  
 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).
- 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.

*Cultural Geography*

- 142. Industrial Geography. (3) II.** Mr. Cunningham  
 Prerequisite: course 1A-1B, or 5A-5B, or 100.  
 Analysis of the distribution of the manufacturing industries.
- 155. Urban Geography. (3) I.** Mr. Ballert  
 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 consent of the instructor.  
 Normally limited to ten students.  
 A study of the role of geographic discipline in land planning activities.

\* Not to be given, 1948-1949.

- 171. Historical Geography of Anglo-America.** (3) II. Mr. Zierer  
Prerequisite: course 1A-1B, or 5A-5B, or 100.  
The geography of the major divisions of the United States and Canada at selected times in the past.
- 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, II. Mr. Bruman, Mr. Spencer  
Prerequisite: course 1A-1B, or 5A-5B, or 100.  
The geographic factor in the evolution of primitive cultures and of advanced civilizations.
- 181. Political Geography.** (3) I, II. Mr. Kostanick  
Prerequisite: course 1A-1B, or 5A-5B, or 100, or 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.

*Research*

- 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) II. 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) II. 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.

† 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 at least three courses (one from each of three of the following groups): 250; 255 or 256 or 257 or 258 or 259; 261 or 262; 275 or 280 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 at least four courses (normally one from each of the following groups): 250; 255 or 256 or 257 or 258 or 259; 261 or 262; 275 or 280 or 290; and a comprehensive examination.

The general requirements for the Ph.D. degree in geography are described on page 137 of this bulletin.

\* Not to be given, 1948-1949.

**\*261. Seminar in Climatology. (3) I.**

Prerequisite: course 113 or the equivalent.

**262. Land Forms and Their Geographic Significance: Seminar. (3) II.**

Prerequisite: course 115 or the equivalent. Mr. Glendinning

**275. Advanced Field Problems in Local Geography. (3) I.**

Prerequisite: course 101 or the equivalent. Mr. Bruman, Mr. Logan

**280. Geographic Writing—Research Techniques and Reports. (3) I.**

Miss Baugh

**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.

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\* Not to be given, 1948-1949.

## GEOLOGY

M. N. BRAMLETTE, Ph.D., Professor of Geology.

JAMES GILLULY, Ph.D., Professor of Geology.

U. S. GRANT, Ph.D., Professor of Geology.

WILLIAM C. PUTNAM, Ph.D., Professor of Geology.

WILLIAM JOHN MILLER, Ph.D., Sc.D., Professor of Geology, Emeritus.

CORDELL DURRELL, Ph.D., Associate Professor of Geology (Chairman of the Department).

ANDERS KVALE, Ph.D., Visiting Associate Professor of Geology.

JOSEPH MURDOCH, Ph.D., Associate Professor of Geology.

WILLIS P. POPENOE, Ph.D., Associate Professor of Geology.

GEORGE TUNELL, Ph.D., Associate Professor of Geology.

DANIEL I. AXELROD, Ph.D., Assistant Professor of Geology.

JOHN C. CROWELL, Ph.D., Instructor in Geology.

———, Instructor in Geology.

LOUIS B. SLICHTER, Ph.D., Professor of Geophysics, and Director of the Institute of Geophysics.

———, Assistant Professor of Geophysics.

## GEOLOGY

*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 69.

*Preparation for the Major.*—Geology 5, 3, 10 or Engineering 1LA-1FA; Mineralogy 6; Chemistry 1A-1B; Physics 2A-2B; Mathematics D or 1, C, and 3A; a reading knowledge of any modern foreign language.

*The Major.*—At least 26 units of upper division courses, including Geology 102A-102B, 103, 107, 116 and 118 or 199 (4 units), and Paleontology 111. A C grade in Geology 102B and 103 is required for graduation. Each major program must be approved by the department.

Differential and integral calculus, physical chemistry, and analytic mechanics are recommended for students whose chief interest is physical geology. Advanced zoölogy courses are recommended for students concerned chiefly with paleontology and stratigraphy.

*Fee.*—Geology 118, \$42.

## GEOPHYSICS

For the interdepartmental curriculum in Geophysics, see page 76.

## GEOLOGY

## LOWER DIVISION COURSES

2. General Geology. (3) I, II. Mr. Crowell, Mr. Grant, Mr. Putnam  
Not open to students who have taken or are taking Geology 5.  
An elementary course in the principles of physical geology.

**3. Historical Geology. (3) I, II.**

Prerequisite: course 2 or 5.

The geologic history of the earth and its inhabitants.

**5. Physical Geology. (4) I, II.**

Mr. Axelrod

Lectures, three hours; laboratory, three hours. Field trips are taken during laboratory period. Prerequisite: elementary chemistry. Not open to students who have taken or are taking Geology 2.

*A beginning course in physical geology for science majors and engineers.*

**\*10. Geologic Surveying. (3) I, II.**

Lectures, two hours; laboratory, three hours. Prerequisite: course 5, or consent of the instructor.

Topographic and geologic surveying with emphasis on the use of the plane table.

## UPPER DIVISION COURSES

**101. Principles of Geology. (3) I, II.**

Mr. Putnam

Prerequisite: junior standing. Not open to students who have taken Geology 2, 3, or 5.

A survey of the principles of physical and historical geology.

**102A-102B. Field Geology. (3-3) Yr. Mr. Axelrod, Mr. Crowell, Mr. Kvale**

Lecture, one hour; field work, Saturday. Prerequisites: course 3, 10 or Engineering 1LA-1FA, 103 (may be taken concurrently).

Principles and methods of geologic mapping.

**103. Petrology. (4) I.**

Mr. Durrell

Lectures, two hours; laboratory, six hours. Prerequisites: Mineralogy 6 and Chemistry 1B (may be taken concurrently).

Origins and characteristics of rocks. Laboratory determination with the hand lens.

**107. Geology of North America. (2) II.**

Prerequisite: course 3.

A regional study of North American geology.

**110. Economic Geology. (3) I.**

Mr. Tunell

Prerequisite: course 103.

Origin and occurrence of the important metallic and nonmetallic mineral deposits.

**111. Petroleum Geology. (3) II.**

Mr. Crowell

Prerequisite: courses 102A, 116.

Geology applied to the exploration and production of petroleum; techniques of surface and subsurface geology; petroleum engineering problems of concern to geologists.

**116. Structural Geology. (3) II.**

Mr. Gilluly

Lectures, two hours; laboratory, three hours.

Prerequisite: courses 102A and 103. A knowledge of descriptive geometry is desirable.

Fracture, folding, and flow of rocks. Graphic solution of structural problems.

\* Not to be given, 1948-1949.



- \*117. Geomorphology. (3) I.** Mr. Putnam  
Prerequisite: course 2, or 5, or 101.  
Principles of geomorphology; map studies of selected regions.
- 118. Advanced Field Geology. (4)** The Staff  
Six weeks, commencing with first Summer Session. Fee \$42; camp and commissary fee about \$65. Prerequisite: Geology 102B, or equivalent.  
Preparation of a map and report concerning the detailed geology of a region.
- 199. Special Studies in Geology. (1 to 4) I, II.**  
Open only to seniors. The Staff (Mr. Crowell in charge)

## GRADUATE COURSES

- \*214A-214B. Advanced Petrographic Laboratory. (2-5; 2-5) Yr.** ———  
Prerequisite: Mineralogy 109B.  
Igneous rocks.
- 215A-215B. Advanced Petrographic Laboratory. (2-5; 2-5) Yr.**  
Prerequisite: Mineralogy 109B. Mr. Gilluly, Mr. Kvale  
Metamorphic rocks.
- 236. Physical Geology of California. (3) I.** ———
- \*251. Seminar in Petrology. (3) II.** ———
- \*252. Seminar in Geomorphology. (3) II.** Mr. Putnam
- 258. Seminar in Stratigraphy. (3) I.** Mr. Bramlette
- 260A-260B. Seminar in Structural Geology. (3-3) Yr.** Mr. Kvale  
The second semester of this course may be taken without the first.
- \*263. Seminar in Economic Geology. (3) II.** ———
- 299. Research in Geology. (1 to 6) I, II.** The Staff (Mr. Gilluly in charge)

## MINERALOGY

## LOWER DIVISION COURSE

- 6. Introduction to Mineralogy. (4) I, II.** Mr. Murdoch, Mr. Tunell  
Lectures, two hours; laboratory, six hours. Prerequisite: elementary chemistry.  
Determination of common rock-forming minerals; origin, relationships, and properties; study of simple crystals; use of blowpipe and chemical tests for minerals.

## UPPER DIVISION COURSES

- 101. Paragenesis of Minerals. (2) I.** Mr. Murdoch  
Prerequisite: course 6, one year of college chemistry.
- 102. Advanced Mineralogy. (3) II.** Mr. Murdoch, Mr. Tunell  
Lecture, one hour; laboratory, six hours. Prerequisite: course 6 or equivalent.  
Crystallography with study of models and natural crystals; determination with fuller treatment of nonsilicate minerals.

\* Not to be given, 1948-1949.

**109A. Optical Mineralogy and Petrography. (2) I.** Mr. Tunell  
Laboratory, six hours. Prerequisite: course 6; Geology 103 (may be taken concurrently).

Optical properties of minerals; determination of minerals and rocks with the petrographic microscope.

**109B. Optical Mineralogy and Petrography. (4) II.** Mr. Durrell  
Lecture, one hour; laboratory, nine hours. Prerequisite: course 109A.  
A continuation of course 109A.

**110. Petrology of Sedimentary Rocks. (3) II.** Mr. Bramlette  
Lecture, one hour; laboratory, six hours. Prerequisite: course 109B (may be taken concurrently).

Characteristics and origin of sedimentary rocks, physical and mineralogical analysis of sediments, determination of minerals by 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. Tunell

#### PALEONTOLOGY

##### UPPER DIVISION COURSES

**101. Principles of Paleontology. (3) II.** Mr. Popenoe  
Prerequisite: junior standing and consent of the instructor.  
A survey of the principles of paleontology.

**111. Systematic Invertebrate Paleontology. (4) I, II.** Mr. Popenoe  
Lectures, two hours; laboratory, six hours. Prerequisite: Geology 3.  
The study of invertebrate fossils.

**114. Micropaleontology. (3) I.** Mr. Bramlette  
Lecture, two hours; laboratory, six hours. Prerequisite: course 111 and Geology 102B.  
Study of micro-fossils important in stratigraphic work.

**120. Paleobotany. (3) II.** Mr. Axelrod  
Laboratory, 6 hours. Prerequisite: Geology 3, Botany 1A-1B; or consent of the instructor.  
Vegetation of the earth during geologic time.

**136. Paleontology and Stratigraphy of the Paleozoic and Mesozoic. (3) I.** Mr. Popenoe  
Lecture, two hours; laboratory, three hours. Prerequisite: course 111 and Geology 102A.

**137. Paleontology and Stratigraphy of the Cenozoic. (3) II.** Mr. Grant  
Lecture, two hours; laboratory, three hours. Prerequisite: course 111 and Geology 102A.

**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 111.  
Classification of west-American 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

## GEOPHYSICS

## UPPER DIVISION COURSE

122. **Geophysical Prospecting.** (3) II. 

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Prerequisite: consent of the instructor.  
The principles of geophysical prospecting for ores, petroleum and other economic minerals.

## GRADUATE COURSE

250. **Seminar in Geophysics.** (3) I. Mr. Slichter  
Fundamental problems in physics of the solid earth.  
The content will vary from year to year.

## GERMANIC LANGUAGES

- <sup>1</sup> 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.  
 WAYLAND D. HAND, Ph.D., Associate Professor of German (Chairman of the Department).  
 WILLIAM J. MULLOY, Ph.D., Assistant Professor of German.  
 CARL WILLIAM HAGGE, Ph.D., Assistant Professor of German.  
 WILLIAM MELNITZ, Ph.D., Assistant Professor of German and Theater Arts.  
 VICTOR A. OSWALD, JR., Ph.D., Assistant Professor of German.  
 VERN W. ROBINSON, Ph.D., Assistant Professor of German.  
 ERIK WAHLGREN, Ph.D., Assistant Professor of Scandinavian and German.  
 CHESTEL B. SCHOMAKER, M.A., Assistant Professor of German, Emeritus.  
 FRANCIS ANDREW BROWN, Ph.D., Instructor in German.  
 ELI SOBEL, Ph.D., Instructor in German.

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KURT BERGEL, Lecturer in German.

EDITH A. SCHULZ, M.A., Associate 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 69.

*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, 107A, 107B, 109B, 117, 118A, 118B, and one course from each of the following groups: (1) 105, 108, 109A, 119, 147; (2) 104A, 104B, 110, 111; (3) 114A, 114B. 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.

All entering graduate students must take a placement examination in German language and literature before enrolling in courses.

*Requirements for the Master's Degree.*

For the general requirements, see page 134. The Department of Germanic Languages favors the Comprehensive Examination Plan. For specific depart-

<sup>1</sup> In residence fall semester only, 1948–1949.

mental requirements see the ANNOUNCEMENT OF THE GRADUATE DIVISION, SOUTHERN SECTION.

*Requirements for the Ph.D. Degree.*

For the general requirements, see page 136. 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 on recommendation of the instructor.

1. **Elementary German.** (4) I, II. Mr. Oswald in charge  
This course corresponds to the first two years of high school German.
- 1-2. **Elementary German. Intensive Course.** (8) I, II. Mr. Oswald  
Two hours daily, four times a week.  
This course stresses the oral-aural approach, and is equivalent to German 1 and German 2.
- 1G. **Elementary German for Graduate Students.** (No credit.) I, II.  
Four hours a week. Mr. Reinsch in charge
2. **Elementary German.** (4) I, II. Mr. Oswald in charge  
Prerequisite: course 1 or two years of high school German.
- ‡3. **Intermediate German.** (4) I. Mr. Robinson in charge  
Prerequisite: course 2 or three years of high school German.  
Readings in literary German.
- ‡3L. **Intermediate German.** (4) I, II. Mr. Sobel in charge  
Prerequisite: course 2 or three years of high school German.  
Readings in the biological sciences.
- ‡3P. **Intermediate German.** (4) I, II. Mr. Sobel in charge  
Prerequisite: course 2 or three years of high school German.  
Readings in the physical sciences.
- ‡3S. **Intermediate German.** (4) I, II. Mr. Hand in charge  
Prerequisite: course 2 or three years of high school German.  
Readings in the social sciences.
4. **Intermediate German.** (4) I, II. Mr. Robinson in charge  
Prerequisite: any one of courses 3, 3L, 3P, or 3S, or four years of high school German.  
Advanced readings in literary German.
- 4H. **Readings in the Humanities.** (4) II. \_\_\_\_\_  
Prerequisite: course 3, 3S, or four years of high school German.  
Reading of representative selections in philosophy, music, art, literary criticism, etc.

‡ Any two of the courses numbered 3, 3L, 3P, 3S, may be taken for credit.

**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.**

Prerequisite: course 4 or the equivalent. Mr. Reinsch in charge

**8A-8B. German Conversation. (1-1) Beginning each semester.**

Mr. Mulloy in charge

The class meets two hours weekly. Open to students who have completed course 2 or its equivalent. Course 8A is normally prerequisite to 8B.

**42A-42B. German Civilization. (2-2) Yr.**

Mr. Sobel

Lectures and reports. Conducted in English. No knowledge of German required.

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 student are also required to take courses 6 and 7.

**104A-104B. Readings in the Drama of the Nineteenth Century. (3-3) Yr.**

Selected readings from nineteenth-century authors. Mr. Robinson

**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.**

Prerequisite: course 106A-106B.

Mr. Dolch

**107A-107B. Phonetics of the German Language. (1-1) Yr.**

Mr. Oswald

Prerequisite: course 4 or equivalent.

Lecture, one hour; laboratory, two hours.

107A. Articulatory and acoustic basis of German phonetics; training in transcription and reading of transcriptions.

107B. Applied phonetics; relation of Bühnenaussprache to general problems of orthoöpy.

**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 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 consent of the instructor.  
A survey from 1750 to 1880, with special reference to the *Novelle*.
- 114A-114B. German Literature from 1875 to the Present. (3-3) Yr.** Mr. Hand  
Prerequisite: 6 units of upper division German, or consent of the instructor.  
114A. Dramatic literature.  
114B. Prose and poetry.
- 117. History of the German Language. (3) I.** Mr. Dolch  
Prerequisite: course 106A-106B, 107A-107B, or consent of the instructor.
- 118A. History of German Literature. (3) I.** Mr. Arlt  
Prerequisite: 6 units of upper division German, or consent of the instructor. Lectures in German.  
The Middle Ages.
- 118B. History of German Literature. (3) II.** Mr. Arlt  
Prerequisite: 6 units of upper division German, or consent of the instructor. Lectures in German.  
From the Reformation to 1850.
- 119. Middle High German. (3) II.** Mr. Dolch  
Prerequisite: courses 117 and 118A.  
Outline of grammar; selections from Middle High German poetry.
- 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.
- \*147. The German Folk Song. (2) II.** Mr. Arlt  
A survey of German folk song from its beginnings to the present.
- 199A-199B. Special Study for Advanced Undergraduates. (1 to 3) I. II.** The Staff  
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  
Required for the M.A. and Ph.D. degrees.
- \*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

\* Not to be given, 1948-1949.

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) II. Mr. Dolch
231. *Gothic*. (3) I. Mr. Dolch
- \*232. *Old High German*. (3) I. Mr. Dolch
233. *Old Saxon*. (3) II. Mr. Oswald
239. *Readings in Middle High German Literature*. (3) I. Mr. Dolch  
Prerequisite: course 119 or the equivalent.  
Required for the M.A. degree.
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
- \*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) I. 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

- 141A. *Scandinavian Literature in English Translation*. (2) I. Mr. Wahlgren  
No prerequisite; open to all upper division students.  
From earliest times to 1750.

\* Not to be given, 1948-1949.



**141B. Scandinavian Literature in English Translation. (2) II.**

No prerequisite; open to all upper division students. Mr. Wahlgren  
From 1750 to the present.

**GRADUATE COURSES****243. Old Icelandic. (3) I.****Mr. Wahlgren****244. Old Norse-Icelandic Prose and Poetry. (2) II.****Mr. Wahlgren****RELATED COURSES (See page 226)****Folklore****145. Introduction to Folklore. (3) I.****Mr. Hand****\*245. The Folk Tale. (2) II.****Mr. Hand**

## HISTORY

DAVID K. BJORK, Ph.D., Professor of History.

JOHN W. CAUGHEY, Ph.D., Professor of History.

BRAINERD DYER, 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.

RAYMOND H. FISHER, Ph.D., Associate Professor of History.

YU-SHAN HAN, Ph.D., Associate Professor of History.

CLINTON N. HOWARD, Ph.D., Associate Professor of History.

CHARLES L. MOWAT, Ph.D., Associate Professor of History.

JOHN W. OLMSTED, Ph.D., Associate Professor of History.

RICHARD O. CUMMINGS, Ph.D., Assistant Professor of History.

JOHN S. GALBRAITH, Ph.D., Assistant Professor of History.

JERE C. KING, 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.

JOHN HIGHAM, M.A., Instructor in History.

TRUESDELL S. BROWN, M.A., Lecturer in History.

ROBERT N. BURR, M.A., Lecturer in History.

WILLIAM R. HITCHCOCK, M.A., 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 69.

*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 Continental 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 1, 2, 10, 34, Economics 1A-1B, 10, 11, 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.*

(1) Twenty-four units of upper division work in history, including

a. A 6-unit combination of broad scope in Old World history. Approved combinations are courses 162A-162B; 171, 172; 172, 173; 173, 131B; 140A-140B; 142, 143; 143, 144; 144, 145; 145, 147; 149A-149B;

152A-152B; 153A-153B; 154, 155; 155, 156; 156, 157; 158A-158B.

b. A 6-unit combination of broad scope in New World history. Approved combinations are courses 162A-162B; 171, 172; 172, 173; 173, 174; 175, 176; 176, 178; 176, 179; 177, 178; 177, 179; 178, 179; 178, 181; 181, 188.

c. Course 197 or 198.

d. Course 199 in a field for which preparation has been made in the junior year.

(2) Six units of approved upper division courses in an allied field. Allied fields include anthropology, economics, geography, philosophy, political science, sociology, and a national literature of the field of the student's emphasis, e.g., English literature in combination with an English history emphasis.

*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.

Lectures, two hours; quiz section, one hour. Mr. Bjork, Mr. Fisher

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, Mr. Salouts

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, Mr. Hussey

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

\* Not to be given, 1948-1949.

**\*9D. Great Personalities: Ancient and Medieval Continental Europe.**

(2) I.

**\*39. Pacific Coast History. (2) I, II.**

Mr. Caughey

## 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. (2) I, II. Mr. Dyer, Mr. Higham**

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-111B. History of the Ancient Mediterranean World. (3-3) Yr.**

Mr. Brown

A survey of the history of the ancient Mediterranean world from earliest times to the reign of Constantine. The work of the first semester ends with the death of Alexander.

**112A-112B. History of Ancient Greece. (3-3) Yr.**

Mr. Brown

112A. The Greek City-State. The emphasis will be on the period between the Persian Wars and the rise of Macedon.

112B. The Hellenistic Period. A consideration of the new patterns in government, social life, science, and the arts that appeared between the Macedonian conquest and the decisive intervention of Rome.

**\*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 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 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.

**140A-140B. History of Modern Europe, 1500-1914. (3-3) Yr. Mr. Fisher**

Not open to students who have credit for History 4B. Students who have

\* Not to be given, 1948-1949.

credit for History 142 or 143 will not receive credit for 140A; those who have credit for History 144 or 145 will not receive credit for 140B.

A general course emphasizing the political and economic development of continental Europe.

**141A-141B. Europe in Transition, 1450-1610. (2-2) Yr.**

141A. The Renaissance.

Mr. Olmsted, Mr. Hitchcock

141B. The Reformation.

**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.

Students who have credit for History 140A may not take this course for credit.

**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.

Students who have credit for History 140A may not take this course for credit.

**144. Europe, 1815-1870. (3) I.**

Mr. King

The history of Europe from the decline of Napoleon to the end of the Franco-Prussian War; a survey covering international relations and internal conditions of the major European countries, with special stress on the rise of nationalism and liberalism.

Students who have credit for History 140B may not take this course for credit.

**145. Europe, 1870-1914. (3) I, II.**

Mr. Fisher, Mr. King

The history of Europe from the end of the Franco-Prussian War to the eve of the First World War. A survey covering internal conditions of the major European countries, nationalism, neoimperialism, the rise of socialism, the spread of the industrial revolution, and the diplomatic background of the First World War.

Students who have credit for History 140B may not take this course for credit.

**147. Europe Since 1914. (3) II.**

Mr. King

Political, economic, and cultural developments since the outbreak of the First World War.

**148A-148B. European Diplomacy and Imperialism. (3-3) Yr.**

Mr. Hitchcock

A study of European international rivalries primarily in the nineteenth and twentieth centuries.

**149A-149B. History of Russia. (3-3) Yr.**

Mr. Fisher

149A. History of Russia to 1856.

Political, economic, and social developments and foreign relations of Russia in the Kievan, Muscovite, and imperial periods.

149B. History of Russia since 1856.

The great reforms, the revolutions of 1905 and 1917, and the Soviet state; Russia in international politics.

**149C. France Since the Founding of the Third Republic. (3) I.** Mr. King  
Recommended preparation: course 4A-4B.

An intensive study of modern France, emphasizing the nation's search for political and economic stability and for military security in the twentieth century.

**\*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.

**156. Great Britain in the Nineteenth Century. (3) I.**  
Mr. Klingberg, Mr. Mowat  
Not open to students who have had History 153B.  
British culture, institutions, and politics in the Great Century from the French Revolution to the death of Victoria.

**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.

**158A-158B. The British Empire since 1783. (3-3) Yr.**  
Mr. Mowat, Mr. Galbraith  
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. Galbraith  
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.**  
Mr. Hussey

\* Not to be given, 1948-1949.

**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) I.**

Mr. Burr

**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.

**175. Economic History of the United States since the Civil War. (3) I.**

Mr. Saloutos

Recommended preparation: courses 7A-7B and Economics 11.

A study of the rise of capitalism and industrialism and of the resultant problems in agriculture, labor, business, and government.

**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.

**177. Intellectual History of the United States since 1776. (3) I.**

A study of American cultural activities in the eras of rationalism, romanticism, and modernism.

**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

Prerequisite: 6 units of United States History or Government, or consent of the instructor.

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.

**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. History of India Prior to 1526. (3) I.**

Mr. Han

A survey of the literature and civilization of the Vedic and the Brahmanic periods; the rise of Jainism and Buddhism; the Magadha and the Kushan Empires; the Gupta period; Mohammedan invasions and conquest to the establishment of the Mogul Empire.

**196B. India and the Indies since 1505. (3) II.**

Mr. Han

A survey of European expansion into India and the Indies, the decline of the Mogul Empire, and the rise of native leadership. Special attention will be given to India under British administration, including the rise of nationalism and the establishment of the Dominions of Pakistan and Hindustan.

**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.

Mr. Brown

Section 2. Medieval History.

Mr. Bjork

Section 3. European History.

Mr. Westergaard, Mr. Hitchcock

Section 4. European History.

Mr. Olmsted, Mr. King

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, Mr. Saloutos

Section 9. Hispanic-American History.

Mr. Burr

Section 10. Pacific Coast History.

Mr. Caughey

Section 11. The British Empire.

Mr. Galbraith

\* Not to be given, 1948-1949.



## GRADUATE COURSES

- \*201. Historiography and Bibliography.** (3) I. Mr. Hussey
- 254A-254B. Seminar in Medieval History.** (3-3) Yr. Mr. Bjork
- 256A-256B. Seminar in Modern European History.** (3-3) Yr.  
Studies in continental European history prior to 1789. Mr. Westergaard
- 257A-257B. Seminar in Modern European History.** (3-3) Yr. Mr. Fisher  
Studies in continental European history since 1789.
- 258A-258B. Seminar in European Intellectual History.** (3-3) Yr.  
Mr. Olmsted  
Readings in the intellectual history of the seventeenth and eighteenth centuries.
- 259A-259B. Seminar in Slavic History.** (3-3) Yr. Mr. Fisher  
Prerequisite: the student should have a reading knowledge of at least one European language.  
Studies in the history of Russia and other Slavic countries.
- 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. Mr. Hussey  
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.
- \*270A. Seminar in United States History.** (3) I. ———  
Studies in colonial history.
- 271A-271B. Seminar in United States History.** (3-3) Yr. Mr. Cummings  
Studies in recent United States history.
- 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 American History.** (3-3) Yr. Mr. Caughey  
Studies of the American West.
- 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.

\* Not to be given, 1948-1949.

## 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, 1948-1949.

## HOME ECONOMICS

DAVID F. JACKEY, Ph.D., Professor of Vocational Education (Acting Chairman of the Department).

HELEN B. THOMPSON, Ph.D., Professor of Home Economics, Emeritus.

VERZ R. GODDARD, Ph.D., Associate Professor of Home Economics.

GRETA GRAY, Ph.D., Associate Professor of Home Economics.

MARGARET HARRIS, Ph.D., Associate Professor of Home Economics.

DOROTHY LEAHY, Ed.D., Associate Professor of Home Economics.

MARGUERITE G. MALLON, Ph.D., Assistant Professor of Home Economics.

THEODORA COREY, M.A., Associate in Home Economics.

ELIZABETH LATHROP, M.A., Associate in Home Economics.

CLARICE H. LINDSEY, M.S., Associate in Home Economics.

FLORENCE C. MCGUCKEN, M.S., Associate in Home Economics.

NORMA N. SHENK, Ed.B., Associate in Home Economics.

FLORENCE A. WILSON, M.A., Associate in Home Economics.

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ETHEL M. MARTIN, Ed.B., Lecturer in Home Economics.

DOROTHY WEST STONE, M.A., 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, 7, 11A–11B, 32, Art 21A, 42, Chemistry 2A.

*The Major.*—Courses 130, 150, 161, 164, 168; 11 or 12 units selected from other home economics courses; and additional courses to total 36 units selected from courses offered by other departments that are closely related to home economics.

B. *The Major for Prospective Home Economics Teachers.*

*Preparation for the Major.*—Courses 1A, 7, 11A–11B, 12; Art 2A or 42, 21A; Chemistry 1A–1B, 8 or 10; Psychology 21, 22; human physiology (at least 3 units).

*The Major.*—Courses 118 (4 units), 120, 130, 131, 150, 162A–162B, 164, 167, 168, 175; 6 units chosen from other home economics courses or from 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 Speech 1A–1B; Psychology 21, 22; human physiology (at least 3 units).

*The Major.*—Courses 100, 110, 118 (4 units), 120, 136A–136B, 159, 370 (or Psychology 110); Business Administration 153, 180A (or Agricultural Economics 101A); and additional units chosen from other home economics courses, Economics 150, Public Health 105, 145, Psychology 112, 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, 8 or 10; Economics 1A–1B; English 1A; Speech 1A; Physics 10; human physiology (at least 3 units).

**The Major.**—Courses 100, 110, 118 (4 units), 120, 136A–136B, 162A–162B; Business Administration 140, 180A (or Agricultural Economics 101A); and additional units selected from other home economics courses, Business Administration 185A, 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 equivalent), 3A–3B; Physics 2A–2B; human physiology (at least 3 units).

**The Major.**—Courses 100, 110, 118 (4 units), 120, 159; the remainder of the 36 units of the major to be selected from other home economics courses, Bacteriology 103, Physics 107, 113, Chemistry 109A–109B, Public Health 163A, Statistics 131A.

The minor should be in chemistry and should include Chemistry 6A and 9.

**F. The Major in Clothing.**

**Preparation for the Major.**—Courses 1A, 7, 12; Art 2A–2B, 21A, 32A; Chemistry 1A–1B, 8 or 10; Economics 1A–1B.

**The Major.**—Courses 161, 167, 169, 170, 175, 176A–176B, 177A–177B; Art 101B, 183A–183B; and additional units chosen from courses 130, 131, 162A–162B, 168, 179A–179B, 199, and upper division courses in art to make a total of 36.

For courses required in the Curriculum of Apparel Merchandising and in the Curriculum of Apparel Design, see pages 128 and 129.

### College of Letters and Science

**Letters and Science List.**—All undergraduate courses except 150, 161, 175, 176A–176B, 177A–177B, 179A and 179B are included in the Letters and Science List of Courses. For regulations governing this list, see page 69.

### LOWER DIVISION COURSES

#### 1A. Elementary Clothing. (3) I, II.

Miss Corey and the Staff

Lecture, one hour; laboratory, six hours. Prerequisite: course 7; Art 21A.

Fundamental problems of clothing construction, including the use of commercial patterns and the selection, care, and use of equipment.

#### 7. Elementary Textiles. (3) I, II.

Miss Wilson, Mrs. Lindsey, Mrs. Harris

Lecture, two hours; laboratory, three hours.

A study of the sources and characteristics of textile fibers and the processes used in the manufacture of textile materials, as a background for intelligent selection, use, and care.

#### 11A–11B. Elementary Experimental Food Study. (3–3) Yr.

Mrs. Stone

Lecture, one hour; laboratory, six hours. Prerequisite: high school chemistry or Chemistry 1A or 2A.

8. Introduction to Home Economics 2 un

The composition, selection, and preparation of standard food products; experience with factors affecting cookery procedures; meal planning and serving.

**\*12. Selection of House Furnishings. (3) I, II.**

A study of domestic architecture, floor plans, furniture selection and arrangement. Suitable materials for floor coverings, wall decorations, curtains, draperies, and upholstery. Table linens, china, glass, and silver.

**32. 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.

UPPER DIVISION COURSES

**100. Food Economics. (3) I.**

Mrs. McGucken

Lecture, one hour; laboratory, six hours. Prerequisite: course 11B. Recommended: Economics 1A, 1B.

The production and distribution of food; grades and standards; legal controls; the cost to consumers and the relations to nutritive values.

**110. Food Analysis. (3) I.**

Miss Goddard

Lecture, one hour; laboratory, six hours. Prerequisite or concurrent: course 118.

The application of quantitative methods to the study of foods. Detection of preservatives and adulterants.

**118. Advanced Nutrition. (3 or 4) I, II.**

Miss Mallon, Miss Goddard

Lecture, three hours; laboratory, three hours. Prerequisite: Chemistry 8 or 10, human physiology (at least 3 units). (The lectures may be taken separately with credit value of 3 units.)

A chemical study of carbohydrates, fats, proteins, minerals, and vitamins in relation to human nutrition. Qualitative laboratory studies upon the components of foods and of tissues, and upon the products of digestion.

**120. Diet in Health and Disease. (3) I, II.**

Miss Mallon

Lecture, two hours; laboratory, three hours. Prerequisite: courses 11B, 118.

Human requirements for dietary essentials for infancy, childhood, adult life; dietary calculations; modification of normal diet for specific diseases.

**130. Child Care and Guidance. (3) I.**

Prerequisite: Psychology 21, 22. Not open for credit to students who have credit for course 143.

Physical and social development of children in the home.

**131. Child Development. (3) I, II.**

Mrs. Stone

Lecture, one hour; laboratory, six hours. Prerequisite: course 130.

Factors involved in the physical, mental, social, and emotional development of children of preschool age, with discussion of home problems. Observation and participation in nursery school.

\* Not to be given, 1948-1949.

**136A-136B. Institution Economics. (4-4) Yr.**

Mrs. McGucken

Lecture, three hours; laboratory, four hours. Prerequisite: course 11B and Economics 1A-1B.

A study of economic principles and problems involved in the purchase and preparation of foods; organization and administration as applied to institution households such as residence halls, hotels, hospitals, and school cafeterias.

**150. Family Food Service and Household Equipment Study. (3) II.**

Mrs. McGucken

Lecture, one hour; laboratory, six hours. Prerequisite: courses 11B, 32 or 118, Art 2A or 42.

Organization and management of family food service at different economic levels. Emphasis is placed on standard products, meal service, efficient kitchen planning, use and care of kitchen and dining equipment.

**159. Metabolism Methods. (4) II.**

Miss Goddard

Lecture, two hours; laboratory, six hours. Prerequisite: course 110 or the equivalent.

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.

**161. Decorative Textiles. (2) I, II.**

Miss Lathrop

Prerequisite: course 7.

Studies in the appreciation of the construction and historical background of woven, printed, and embroidered textiles; hand-made laces; the damasks, brocades and prints of China, Persia, and India; French tapestries; oriental rugs; French and English prints, and early American textiles.

**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) I, II.**

Miss Gray

Methods of payment for goods, budgeting, property laws, investments, and insurance; the business cycle as a factor in financial planning.

**164. Housing. (3) I, II.**

Miss Gray

The contemporary housing situation, essentials of healthful housing, improvement in housing, and municipal, state, and federal activities.

**165. Houseplanning. (2) II.**

Miss Gray

Lecture, one hour; laboratory, three hours. Prerequisite: course 164.

Planning the home with reference to livability, selection of furnishings and equipment, arrangements for minimizing work and adaptation to the needs of families of varying positions and incomes.

**167. Textiles. (2) I.**

Mrs. Lindsey

Laboratory, six hours. Prerequisite: course 7, Chemistry 8 or 10.

A study of chemical and physical properties of textile materials with opportunity to apply textile analysis to problems in retail buying.

**168. Family Relationships. (2) II.**

Miss Leahy

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.

**169. Advanced Textiles. (3) II.**

Mrs. Harris

Lecture, two hours; laboratory, three hours. Prerequisite: courses 7, 167; Chemistry 1A-1B, 10.

An intensive study of textile materials with special emphasis on the nature of the raw material and quantitative methods in textile analysis.

**170. History and Development of the Clothing Industry. (3) I, II.**

Miss Lathrop

A study of the ready-to-wear industry in the United States. Important inventions in the field of textiles; fashion in relation to clothing; French and American designers; distribution through wholesale and retail establishments.

**175. Tailoring Problems. (3) I, II.**

Miss Wilson, Miss Corey, Mrs. Lindsey

Lecture, one hour; laboratory, six hours. Prerequisite: course 1A.

The design, fashion, construction, and economic factors involved in selecting and in making tailored garments.

**176A-176B. Advanced Dress Design. (3-3) Yr. Beginning either semester.**

Mrs. Harris, Miss Shenk

Lecture, one hour; laboratory, six hours. Prerequisite: course 175.

French draping; selection and manipulation of fabrics; creation of original designs.

**177A-177B. Pattern Analysis. (3-3) Yr. Beginning either semester.**

Miss Shenk

Lecture, one hour; laboratory, six hours. Prerequisite: course 1A.

A study of drafting and grading of patterns in relation to the problems of design with consideration of personal and industrial needs.

**179A-179B. Millinery. (2-2) Yr.**

Lecture, one hour; laboratory, three hours. Prerequisite: course 1A.

The development of head covering as a part of apparel design. Study of design and construction of the modern hat and its relation to various types of individuals and styles of clothing. Experience in construction of hats.

**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; section 2, laboratory.

Assigned problems for individual investigation, to be directed by the instructor in whose field of work 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.**

Study and evaluation of experimental cookery methods, procedures, and results.

**262. Personal and Family Economics Seminar. (2) I, II.**

Miss Gray

Review of budget studies representative of various levels of living and of those based on quantity budgets.

**279. Food and Nutrition Research Methods. (3) II.**

Miss Goddard

Conference, one hour; laboratory, six hours.

Review of research techniques applicable to the study of foods and nutrition. Individual guidance in laboratory practice in one or more selected techniques.

**282A-282B. Selected Problems. (2-4; 2-4) Yr.**

Miss Gray, Miss Goddard, Mrs. Harris, Miss Malon,  
Miss Leahy, Mrs. Lindsey

Laboratory or field investigation in nutrition, foods, household economics, or textiles.

**PROFESSIONAL COURSE IN METHOD****370. Principles of Home Economics Teaching. (3) II.**

Mrs. Martin

Prerequisite: courses 1A, 7, 11B, 130, 168.

The development of home economics as an educational movement; home-making courses and their presentation in high schools; critical review of texts and references in relation to curriculum requirements in different types of schools.

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**HORTICULTURE**

For courses in Horticulture, see under Ornamental Horticulture, page 299, and Subtropical Horticulture, page 354.



**IRRIGATION AND SOILS**

A Division of the Department of Agriculture.

**MARTIN R. HUBERTY**, Engr., Professor of Irrigation (Chairman of the Division).

**DAVID APPLEMAN**, Ph.D., Associate Professor of Plant Nutrition.

**ARTHUR F. PILLSBURY**, Engr., Assistant Professor of Irrigation.

\_\_\_\_\_, Assistant Professor of Soils.

*The Major.*—The major in Irrigation is offered only on the Davis campus and the Soil Science curriculum only on the Berkeley campus. See the PROSPECTUS OF THE COLLEGE OF AGRICULTURE and consult the appropriate advisers.

**UPPER DIVISION COURSES****105. Principles of Irrigation. (4) II.**

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.

**110A. The Soil as a Medium for Plant Growth. (3) II.**

Mr. Appleman

Lectures, three hours. Prerequisite: Chemistry 1A-1B and 8, or the equivalent.

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

Lectures, three hours. 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.**

Prerequisite: senior standing and consent of the instructor. The Staff

**GRADUATE COURSE****280A-280B. Research in Irrigation and Soils. (2-4; 2-4) Yr.**

The Staff (Mr. Huberty in charge)

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**ITALIAN**

For courses in Italian, see under Department of Spanish and Italian.

**LINGUISTICS AND GENERAL PHILOLOGY**

HARRY HOIJER, Ph.D., Associate Professor of Anthropology.

**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) I.**

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) II.**

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.****RELATED COURSES IN OTHER DEPARTMENTS****LOWER DIVISION COURSES****Greek 40. The Greek Element in English. (2) I.**

Mr. Hoffleit

**Latin 40. The Latin Element in English. (2) II.**

Mr. Hoffleit

**UPPER DIVISION COURSES****English 110. Introduction to English Language. (3) II.**

Mr. Matthews

**English 111. The English Language in America. (3) I.**

Mr. Matthews

**German 107A-107B. Phonetics of the German Language. (1)**

Mr. Oswald

**German 117. History of the German Language. (3) I.**

Mr. Dolch

**German 119. Middle High German. (3) II.**

Mr. Dolch

**GRADUATE COURSES****Anthropology 271A-271B. Linguistic Analysis. (3) Yr.**

Mr. Hoijer

**Anthropology 272A-272B. American Indian Languages Seminar. (2-2) Yr.**

Mr. Hoijer

**English 208. The Development of Modern English. (3) I.**

Mr. Matthews

**English 211. Old English. (3) I.**

Mr. Matthews

**English 212. Middle English. (3) II.**

Mr. Matthews

**English 250. History of the English Language; Seminar. (3).**

Mr. Matthews

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\* Not to be given, 1948-1949.

- English 260. Old English Poetry. (3) I.** Mr. Matthews
- German 230. Survey of Germanic Philology. (3) I.** Mr. Dolch
- German 231. Gothic. (3) I.** Mr. Dolch
- German 232. Old High German. (3) II.** Mr. Dolch
- German 233. Old Saxon. (3) II.** Mr. Dolch
- German 259. Seminar in Germanic Linguistics. (1 to 3) I, II.** Mr. Dolch
- Romance Languages 201A-201B. French Historical Grammar and Methodology of Romance Linguistics. (2-2) Yr.** Mr. Williams
- Romance Languages 203A-203B. Old Provençal: Reading Texts. (2-2) Yr.** Mr. Templin
- Romance Languages 252. Methodology of Romance Philology. (2) II.** Mr. Zeitlin
- Scandinavian 243. Old Icelandic. (3) I.** ———
- Scandinavian 244. Old Norse-Icelandic Prose and Poetry. (2) II.** ———
- Spanish 212A-212B. Historical Grammar and Old Spanish Readings. (2-2) Yr.** Mr. Zeitlin

## MATHEMATICS

EDWIN F. BECKENBACH, Ph.D., Professor of Mathematics.

PAUL H. DAUS, Ph.D., Professor of Mathematics (Chairman of the Department).

MAGNUS R. HESTENES, Ph.D., Professor of Mathematics.

PAUL G. HOEL, Ph.D., Professor of Mathematics.

GEORGE E. F. SHERWOOD, Ph.D., Professor of Mathematics.

I. S. SOKOLNIKOFF, Ph.D., Professor of Mathematics.

ANGUS E. TAYLOR, Ph.D., Professor of Mathematics.

<sup>1</sup> CLIFFORD BELL, Ph.D., Associate Professor of Mathematics.

JOHN W. GREEN, Ph.D., Associate Professor of Mathematics.

GLENN JAMES, Ph.D., Associate Professor of Mathematics.

\* WILLIAM T. PUCKETT, JR., Ph.D., Associate Professor of Mathematics.

RICHARD ARENS, Ph.D., Assistant Professor of Mathematics.

\* LEONARD GREENSTONE, Ph.D., Assistant Professor of Mathematics.

ALFRED HORN, 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.

HARRIET E. GLAZIER, M.A., Assistant Professor of Mathematics, Emeritus.

GUY H. HUNT, C.E., Assistant Professor of Applied Mathematics, Emeritus.

LOWELL J. PAIGE, Ph.D., Instructor in Mathematics.

J. DEAN SWIFT, Ph.D., Instructor in Mathematics.

MARGARET B. LEHMAN, M.A., Lecturer 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 69.

*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 and 370.

Students who expect to continue with graduate study are advised to elect courses 111A and 122A-122B.

*Teaching Minor.*—Not less than 20 units in the Department of Mathematics, of which 6 units are in the upper division, including 100 or 108.

\* Absent on leave, 1948-1949.

<sup>1</sup> In residence fall semester only, 1948-1949.

**Business Administration.**—Freshman in this College are required to take courses E and 2 or course 2E.

**Engineering.**—Lower division students in this College are required to take courses 5A, 5B, 6A, 6B.

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. (5) I, II.**

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 courses D, E, or 1 will receive only 3 units of credit for this course.

**2. Mathematics of Finance and Business. (3) I, II.**

Mr. James in charge

Prerequisite: courses 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 Tuesday afternoon before the start of classes. Applicants for this examination must 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.

**2E. Commercial Algebra and Mathematics of Finance. (5) I, II.**

Mr. Bell in charge

Prerequisite: at least one and one-half years of high school algebra.

A combination of courses E and 2. Students who have received credit in courses D, E, or 1 will receive only 3 units of credit for this course.

**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 Tuesday afternoon before the start of classes. Applicants for this examination must 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.

**4A. Second Course in Calculus. (3) I, II.**

Mr. Sherwood in charge

Prerequisite: course 3B.

Integration with applications; infinite series.

This course may be replaced by course 6A.

**4B. Third Course in Calculus. (3) I, II.**

Mr. Sherwood in charge

Prerequisite: course 4A.

Solid analytic geometry, partial differentiation, multiple integration with applications.

This course may be replaced by course 6B.

Upper division credit will be allowed to students who are not majors in mathematics or engineering, who take the course while in the upper division.

**5A. Analytic Geometry and Calculus. (5) I, II.**

Mr. Bell in charge

Prerequisite: two years of high school algebra and trigonometry; admission to the College of Engineering. Prescribed in the College of Engineering. Nonengineering students will be admitted by special examination as prescribed under course 3A.

A unified course in analytic geometry and calculus. Coördinate systems, geometry of a line and circle, systems of linear equations, determinants, topics from theory of equations, derivatives, maxima and minima, rectilinear motion, rates, introduction to integration, area under a curve.

**5B. Analytic Geometry and Calculus. (3) I, II.**

Mr. Bell in charge

Prerequisite: course 5A.

Curve tracing, conic sections, differentiation of trigonometric and exponential functions, curvilinear motion, simple differential equations with physical applications.

**6A. Differential and Integral Calculus. (3) I, II.**

Mr. Sherwood in charge

Prerequisite: course 5B.

Indefinite and definite integrals, technique of integration, applications, infinite series.

**6B. Differential and Integral Calculus. (3) I, II.**

Mr. Sherwood in charge

Prerequisite: course 6A.

Solid analytic geometry, partial differentiation, multiple integrals, centers of gravity, moments of inertia, ordinary differential equations with applications.

**7. Mathematics for Social and Life Sciences. (3) II.**

Mr. Bell

Prerequisite: course D or I.

This course gives in brief form an introduction to analytic geometry and 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. Daus  
 Prerequisite: course 4A.  
 Selected topics in geometry with particular emphasis on recent developments.
- 108. Theory of Algebraic Equations.** (3) I, II. Mr. James  
 Prerequisite: course 4A.
- 110A-110B. Advanced Engineering Mathematics.** (2-2) Yr. Mr. Sokolnikoff  
 Prerequisite: course 6B. Prescribed for students in the 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. Mr. Swift  
 Prerequisite: course 108.  
 Selected topics in algebra, with particular reference to modern points of view.
- 112A. Introduction to Higher Geometry.** (3) I, II. Mr. Bell  
 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) II. Mr. James  
 Prerequisite: course 119A, or consent of the instructor.
- 113. Synthetic Projective Geometry.** (3) I. Mr. Bell  
 Prerequisite: course 112A, or consent of the instructor.
- 115A. Theory of Numbers.** (3) II. Mr. Sherwood  
 Prerequisite: course 108, or consent of the 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.
- 119B. Differential Equations.** (3) II. Mr. Hestenes  
 Prerequisite: course 119A.  
 Numerical methods, special equations and functions, and partial differential equations.
- 122A-122B. Advanced Calculus.** (3-3) Yr. Mr. Sherwood  
 Prerequisite: course 110A or 119A.
- 124. Vector Analysis.** (3) I. Mr. Green  
 Prerequisite: course 119A or 110AB.  
 Vector algebra, vector functions and vector calculus, linear vector functions, field theory, transformations of integrals.
- 125. Analytic Mechanics.** (3) I. Mr. Valentine  
 Prerequisite: course 119A or 110A-110B, and Physics 105.

- 126. Potential Theory. (3) II.** Mr. Taylor  
Prerequisite: course 4B and one year of college physics. Recommended: course 110A or 119A.
- 135. Numerical Mathematical Analysis. (3) II.** Mr. Hoel  
Prerequisite: course 4A.
- 199. Special Problems in Mathematics. (3) I, II.** The Staff  
Prerequisite: consent of the department.

## GRADUATE COURSES

(Open only to students who have regular graduate status.)

- \*208. Foundations of Geometry. (3) I.** Mr. Daus
- \*211. Higher Plane Curves. (3) II.** Mr. Bell
- 215. Non-Euclidean Geometry. (3) II.** Mr. Daus  
Prerequisite: consent of the instructor. Recommended: course 113 or 208.
- \*216. Differential Geometry. (3) II.** \_\_\_\_\_
- 221A-221B. Higher Algebra. (3-3) Yr.** Mr. Paige  
Prerequisite: course 111A.
- 224A-224B. Functions of a Complex Variable. (3-3) Yr.** Mr. Green  
Prerequisite: course 122A-122B.
- \*225A-225B. Theory of Elasticity. (3-3) Yr.** Mr. Sokolnikoff  
Prerequisite: course 122A-122B or consent of the instructor.  
Course 225A deals with the theory of mechanics of deformable media, analysis of stress, analysis of strain, stress-strain relations, energy theorems, fundamental boundary value problems of mechanics of continua.  
Course 225B deals with the variational methods of solution of problems of elasticity, uses of the analytic function theory in two-dimensional problems, theory of plates and shells.
- 226A-226B. Topology. (3-3) Yr.** Mr. Sorgenfrey  
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.
- 236. Topological Groups. (3) I.** Mr. Arens  
Prerequisite: course 224A and 226A, or consent of the instructor.  
Invariant integration, group algebras, representation of abelian and compact groups.
- 237A-237B. Calculus of Variations. (3-3) Yr.** Mr. Hestenes  
Prerequisite: course 122A-122B or consent of the instructor.  
The differential equation of a curve minimizing a definite integral. Other

\* Not to be given, 1948-1949.



properties of a minimizing curve analogous to those deduced by Legendre, Weierstrass, and Jacobi. Conditions which insure the existence of a minimum, extensions to multiple integrals.

**242A-242B. Functions of a Real Variable.** (3-3) Yr. Beginning second semester. Mr. Hestenes

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. \_\_\_\_\_

**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 consent of the instructor.

247A. Vectors in  $n$ -dimensional and infinitely dimensional manifolds. Linear transformations. Algebra and calculus of tensors. Applications to geometry.

247B. Applications to differential geometry of curves and surfaces. First and second differential forms, geodesics in Riemannian manifolds. Equations of Gauss and Codazzi. Applications 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, and algebra, 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) I. \_\_\_\_\_

Prerequisite: course 4A.

A critical inquiry into present-day tendencies in the teaching of mathematics.

#### STATISTICS

##### LOWER DIVISION COURSE

**1. Elementary Statistics.** (2) I, II.

Mr. Hoel

For students without the mathematical background for course 131A. 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 correlation.

\* Not to be given, 1948-1949.

## UPPER DIVISION COURSE

131A-131B. Statistics. (3-3) Yr.

Mr. Hoel

Prerequisite: Mathematics 4A.

A basic introductory course in the theory and applications of statistical methods.

## GRADUATE COURSES

231. Mathematical Statistics. (3) I.

Mr. Hoel

Prerequisite: Statistics 131A-131B.

The mathematical theory of certain portions of multivariate normal analysis, analysis of variance, linear regression, and estimation.

260. Seminar in Statistics. (3) II.

Mr. Hoel

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INSTITUTE FOR NUMERICAL ANALYSIS

The Institute for Numerical Analysis, a section of the National Bureau of Standards, is housed on the Los Angeles campus of the University of California. The Institute carries on basic research pertinent to the efficient exploitation and further development of high speed automatic digital computing equipment, and training in the use of computing machines. The Institute also provides a computing service for the Southern California area and gives assistance in the formulation and analytical solution of problems in applied mathematics. The Institute is equipped with desk calculators and with punched-card machinery. It will be supplied with a general purpose automatic electronic digital computing machine as soon as the construction of a planned machine is completed.

The research program of the Institute has been underwritten for the period 1947-1949 by the Office of Naval Research. The principal sponsor of the computing service is the Air Matériel Command of the United States Air Force. Further information may be obtained by consulting the Executive Officer, Mr. Albert S. Cahn, Jr., Room 119, Temporary Building 3U.

# METEOROLOGY

JAKOB BJERKNES, Ph.D., Professor of Meteorology (Chairman of the Department).

\* JÖRGEN HOLMBOE, M.Sc., Professor of Meteorology.

ZDENEK SEKERA, Ph.D., Visiting Associate Professor of Meteorology.

MORRIS NEIBURGER, Ph.D., Assistant Professor of Meteorology.

FRANCIS N. BUCK, M.A., Lecturer in Meteorology.

J. Y. GILBERT, S.M., Lecturer in Meteorology.

YALE MINTZ, M.A., Lecturer in Meteorology.

AYLMER Y. THOMPSON, M.A., Lecturer in Meteorology.

ROBERT E. HOLZER, Ph.D., Professor of Geophysics.

JOSEPH KAPLAN, Ph.D., Professor of Physics.

WALTER H. MUNK, Ph.D., Assistant Professor of Geophysics, 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 69.

*Preparation for the Major.*—Physics 2A–2B, or 1A, 1B, 1C, 1D, or 1A, 1B, 2B. 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.

## LOWER DIVISION COURSES

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.

5. Weather Observations. (3) I.

Mr. Gilbert

Lecture, two hours; laboratory, three hours.

Prerequisite or concurrent: course 3.

Technique of synoptic and airways observations; upper-air wind observations; theory and care of the common meteorological instruments; weather codes.

## UPPER DIVISION COURSES

100A. Synoptic Meteorology. (3) I.

Mr. Neiburger

Prerequisite: course 3; prerequisite or concurrent: course 107.

Three dimensional structure of atmosphere; world-wide survey of weather; fundamentals of weather map analysis and weather forecasting.

\* In residence spring semester only, 1948–1949.

**100B. Synoptic Meteorology. (3) II.**

Mr. Neiburger

Prerequisite: course 100A.

Theory of 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) II.**

Mr. Kaplan

Prerequisite: course 104, or Physics 113, or consent of the instructor. Not open to students having credit for Astronomy 127.

Constitution of the atmosphere at various levels; the ozone layer; the ionosphere; cosmic rays; optical phenomena.

**\*103. Oceanography. (3) II.**

Mr. Munk

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.**

Mr. Sekera

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.

The general circulation of the atmosphere and its influence on the mean fields of cloudiness, precipitation, and temperature over the earth.

**108B. Regional Climatology. (2) II.**

Mr. Mintz

Prerequisite: course 3 or 108A, or 100A.

Selected regional studies, with interpretation of the climatic data in terms of atmospheric circulation. Special emphasis on the climate of the Los Angeles area.

**110. Meteorological Laboratory. (3) I.**

Mr. Buck, Mr. Thompson

Prerequisite or concurrent: course 100A.

Weather codes and weather map plotting. Exercises in analysis of the surface weather map; introduction to weather forecasting.

**111. Modern Meteorological Instruments. (3) II.**

Mr. Gilbert

Lecture, two hours; laboratory, three hours.

Prerequisite: course 5; prerequisite or concurrent, course 100B.

A survey course designed to increase the meteorologist's understanding of modern instruments, their uses and limitations. Meteorological instrumentation with emphasis on accuracy and applicability of various techniques; measurement of special meteorological elements; upper-air sounding methods; radar storm detection, apheres; rawins.

**115. Meteorological Laboratory. (5) II.**

Mr. Neiburger in charge

Prerequisite: course 110; prerequisite or concurrent, course 100B.

Practice in weather map analysis and forecasting; use of upper air data.

\* Not to be given, 1948-1949.

- 120. Dynamic Meteorology. (3) II.** Mr. Sekera  
 Prerequisite: course 107.  
 Equations of atmospheric motion. Gradient wind. Thermal wind. Fronts. Stability of hydrostatic equilibrium.
- 121. Dynamic Meteorology. (3) I.** Mr. Sekera  
 Prerequisite: course 120.  
 Theory of pressure changes. Circulation and vorticity. Frictional effects.
- 130. Numerical Methods in Meteorology. (3) II.** \_\_\_\_\_  
 Prerequisite: course 107, 120.  
 Application of numerical mathematics and statistics to selected meteorological problems.
- 199A-199B. Special Problems in Meteorology. (1-3; 1-3) Yr.**  
 Mr. Neiburger, Mr. Holmboe

GRADUATE COURSES

- Prerequisite to all graduate courses: courses 100AB, 107, 110, 115, 120.
- 201A-201B. Advanced Synoptic Meteorology. (2-2) Yr.** Mr. Bjerknes
- \*203. Advanced Oceanography. (2)** \_\_\_\_\_  
 Prerequisite: course 103.
- 210A-210B. Meteorological Laboratory. (5-4) Yr.**  
 Mr. Bjerknes, Mr. Neiburger
- 217. Meteorological Hydrodynamics. (3) II.** Mr. Holmboe
- \*220. Advanced Dynamic Meteorology. (3) I.** Mr. Holmboe
- 260. Seminar in Meteorology. (2) I, II,** Mr. Bjerknes in charge
- 290A-290B. Research in Meteorology. (1-6; 1-6) Yr.**  
 Mr. Bjerknes in charge

\* Not to be given, 1948-1949.

**MILITARY SCIENCE AND TACTICS**

**JOHN L. MCKEE**, Brigadier-General, Infantry, Professor of Military Science and Tactics (Chairman of the Department).

**FRANK H. MEARS**, Colonel, Air Force, Assistant Professor of Military Science and Tactics (for Air).

**ANDREW J. BING**, Lt. Colonel, Air Force, Assistant Professor of Military Science and Tactics (for Air).

**HOWARD E. FERGUSON**, Lt. Colonel, Assistant Professor of Military Science and Tactics (for Air).

**HERBERT B. HEYER**, Lt. Colonel, Infantry, Assistant Professor of Military Science and Tactics.

**PAUL A. JOHNSON**, Lt. Colonel, Air Force, Assistant Professor of Military Science and Tactics (for Air).

**MARTIN MOSHBERGER**, Lt. Colonel, Field Artillery, Assistant Professor of Military Science and Tactics.

**EDWARD M. GEARY**, Major, Field Artillery, Assistant Professor of Military Science and Tactics.

**ALLEN T. SMITH**, Major, Infantry, Assistant Professor of Military Science and Tactics.

**HERMAN M. VOLHEIM**, Major, Infantry, Assistant Professor of Military Science and Tactics.

**CARROL F. GATES**, Captain, Infantry, Assistant Professor of Military Science and Tactics.

**RICHARD G. MCEWAN**, Captain, Coast Artillery Corps, Assistant Professor of Military Science and Tactics.

**JACK F. RIGGINS**, Captain, Infantry, Assistant Professor of Military Science and Tactics.

**LAVERNE E. BLOUNT**, Captain, Field Artillery, Assistant Professor of Military Science and Tactics.

**KERMIT J. SILVERWOOD**, Captain, Quartermaster Corps, Assistant Professor of 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 69. The courses in Military Science and Tactics are those prescribed by the Department of the Army and Department of the Air Force 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.

*Mission.*—The mission of the Senior Division, R.O.T.C., is to produce junior officers who have the qualities and attributes essential to their progressive and continued development as officers in a component of the Army of the United States. The major mission is the training of officers to serve with the Reserve Components of the Army of the United States, i.e., the Organized Reserve Corps and the National Guard. In addition, the Senior R.O.T.C. will provide the principal source of procurement of junior officers for the Regular Army through selection of a required number of distinguished military graduates

of Senior R.O.T.C. units for direct Regular Army appointment, and through extended active duty-tours of volunteer officers from which will be selected additional personnel for Regular Army appointments.

#### **BASIC COURSES**

The purpose of these courses 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 basic 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 two years of credit in the basic course for prior active 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 basic 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.

#### **1A-1B. Basic Military Training, Branch Immaterial. (1½-1½) 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.

#### **2A-2B. Basic Military Training, Branch Immaterial. (1½-1½) 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 1A-1B, and to instill a theoretical and practical knowledge of military tactics as applied to the individual and small groups.

#### **ADVANCED COURSES**

The purpose of these courses is to fulfill the above stated mission.

The advanced course is offered for regularly enrolled students who are graduates of the basic course, physically fit, and not 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. Advanced-course students receive from

the government commutation of subsistence equivalent to the value of the Army ration (\$24.50 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 \$75 per month). Students who attend camp receive one-half unit of credit for each week of the duration of the camp.

Acceptance by the student of the monetary allowances listed above will make the completion of the advanced course a prerequisite to graduation from the University.

**103A-103B. Advanced Military Training, Infantry, Artillery, Quartermaster Corps, Air Force. (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, Artillery, Quartermaster Corps or Air Force as elected by the student.

**104A-104B. Advanced Military Training, Infantry, Artillery, Quartermaster Corps, Air Force. (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, Antiaircraft, Quartermaster Corps, and Air Force.

*Pending Legislation.*—Legislation now pending would provide that students of the advanced course be paid an allowance at the rate of the commuted ration (now 79 cents per day) 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

\*LAURENCE A. PETRAN, Mus.M., Ph.D., F.A.G.O., Professor of Music and University Organist.

JOHN N. VINCENT, JR., Ph.D., Professor of Music (Chairman of the Department).

ARNOLD SCHOENBERG, Professor of Music, Emeritus.

LEROY W. ALLEN, M.A., Associate Professor of Music.

ROBERT U. NELSON, Ph.D., Associate Professor of Music.

FRANCES WRIGHT, Associate Professor of Music, Emeritus.

RAYMOND MOREMEN, M.S.M., Assistant Professor of Music.

WALTER H. RUBSAMEN, Ph.D., Assistant Professor of Music.

BORIS A. KREMENLIEV, Ph.D., Instructor in Music.

ROBERT E. TURNER, M.F.A., Instructor in Music.

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LAURA C. BOULTON, A.B., Lecturer in Music.

HENRY L. CLARKE, Ph.D., Lecturer in Music.

F. TRUMAN HUTTON, M.A., Lecturer in Music.

BERNICE JONES, M.A., Lecturer in Music.

FERI ROTH, Lecturer in Music.

LINCOLN B. SPIESS, Ph.D., Lecturer in Music.

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CHARLES B. HUNT, JR., M.A., Assistant in Music.

PATTON C. MCNAUGHTON, M.A., Assistant in Music.

WALDO WINGER, A.B., Assistant 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 concerning teaching credentials, consult the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION, LOS ANGELES.

## College of Letters and Science

*Letters and Science List.*—All undergraduate courses, but not more than 8 units from 9, 10, 11, 37, and 46, are included in the Letters and Science List of Courses. For regulations governing this list, see page 69.

*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 10.

*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, 132, 134, 136, 138, 142, 151, 168, 199; 4 units chosen from courses 102A-102B, 103A-103B, 105A-105B, 106A-106B, 114A-114B, 122A-122B; and (d) 4 units chosen from courses 110A-110B, 116A-116B, 117A-117B, 118, 119A-119B, 120A-120B, 159, 160, 161, 166; and 6 additional units in upper division courses in music.

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\* Absent on leave, 1948-1949.

## 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 10.

*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, 132, 134, 136, 138, 142, 151, 168, 199; (c) 4 units chosen from courses 102A-102B, 103A-103B, 105A-105B, 106A-106B, 114A-114B, 122A-122B; and (d) 4 units chosen from courses 110A-110B, 116A-116B, 117A-117B, 118, 119A-119B, 120A-120B, 159, 160, 161, 166; and 18 additional units in upper division courses in music.

*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 10.

*The Major.*—Thirty-six units of upper division courses, including (a) courses 104A-104B, 105A, 109A-109B, 114A; (b) 8 units chosen from courses 108A-108B, 115A-115B-115C-115D; (c) 6 units chosen from courses 111A-111B, 124, 125, 126, 127, 128, 129, 130, 131, 132, 134, 136, 138, 142, 151, 168, 199; (d) 4 units chosen from courses 110A-110B, 116A-116B, 117A-117B, 118, 119A-119B, 120A-120B, 159, 160, 161, 166; together with 6 additional units in upper division courses in music.

*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 10, and 46. 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, 109A-109B, 114A; 8 units chosen from courses 108A-108B, 115A-115B-115C-115D; 6 units chosen from courses 111A-111B, 124, 125, 126, 127, 128, 129, 130, 131, 132, 134, 136, 138, 142, 151, 168, 199, and 4 units chosen from courses 110A-110B, 116A-116B, 117A-117B, 118, 119A-119B, 120A-120B, 159, 160, 161, 166. It is recommended that course 370B be taken in the junior 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.

*C. Requirements for the Master's Degree.*—For the general requirements, see page 134. The Department of Music favors the Thesis Plan (Plan I).

## LOWER DIVISION COURSES

The piano requirement for music majors, *prerequisite to junior standing*, is the ability to play such music as the accompaniments to simple folk songs, four-part hymns, 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.

Mr. Vincent in charge

Elementary theory, dictation, and music reading. Basic course for the major in music.

**2A-2B. History and Appreciation of Music.** (2-2) Yr.

Mr. Spiess

The consideration of music from formal, aesthetic, and historical standpoints. 2A is not a prerequisite to 2B.

**7A-7B. Elementary Voice.** (2-2) Yr.

Mr. Winger

Prerequisite: consent of the instructor.

**9. Glee Club.** (1) I, II.

Mr. Moremen

Two one-hour rehearsals each week. May be repeated once without duplication of credit.

Prerequisite: audition for consent of the instructor.

**10. University Symphony Orchestra.** (1-2) I, II.

Mr. Vincent

Two two-hour rehearsals each week. May be repeated once without duplication of credit.

Prerequisite: audition for consent of the instructor.

The study and performance of standard symphonic literature.

**11. University A Capella Choir.** (2) I, II.

Mr. Moremen

Three one-hour rehearsals and one section meeting each week. May be repeated once without duplication of credit.

Prerequisite: audition for consent of the instructor.

The study and performance of standard choral works.

**12. Chorus.** (1) I, II.

**14A-14B. Counterpoint.** (2-2) Yr. Beginning either semester.

Mr. Clarke in charge

Prerequisite: course 35A-35B, or consent of the instructor.

**35A-35B. Harmony.** (3-3) Yr. Beginning either semester.

Mr. Kremenliev in charge

Prerequisite: course 1A-1B or its equivalent; may be taken concurrently with 1A-1B with consent of the instructor.

**37A-37B. Piano, Intermediate.** (2-2) Yr.

Mr. Turner

Prerequisite: audition for consent of the instructor.

**46. University Band.** (2) I, II.

Mr. Hunt, Mr. McNaughton

Two two-hour rehearsals each week. May be repeated once without duplication of credit.

Prerequisite: audition for consent of the instructor.

## UPPER DIVISION COURSES

- 102A-102B. Keyboard Harmony and Score Reading.** (2-2) Yr. \_\_\_\_\_  
Prerequisite: course 35A-35B.
- 103A-103B. Advanced Harmony.** (2-2) Yr. \_\_\_\_\_  
Prerequisite: course 35A-35B.
- 104A-104B. Form and Analysis.** (2-2) Yr. Mr. Clarke, Mr. Spiess  
Prerequisite: course 35A-35B.  
Analysis of homophonic and contrapuntal music.
- 105A-105B. Composition.** (2-2) Yr. Mr. Kremenliev, Mr. Vincent  
Prerequisite: courses 14A-14B, 35A-35B, 104A-104B, and 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 and consent of the instructor.
- 109A. Conducting.** (2) I, II. Mr. Moremen  
Prerequisite: courses 1A-1B, 35A-35B.  
The theory and practice of conducting choral organizations.
- 109B. Conducting.** (2) I, II. Mr. Allen  
Prerequisite: courses 1A-1B, 35A-35B.  
The theory and practice of conducting instrumental organizations.
- 110A-110B. Chamber Music Ensemble.** (2-2) Yr. Mr. Roth  
Prerequisite: consent of the instructor.  
The study and interpretation of chamber music literature.
- 111A-111B. History of Music in Western Civilization.** (3-3) Yr.  
Prerequisite: courses 2A-2B, 35A-35B, or their equivalent. Mr. Spiess  
The stylistic development of music with a background of its relationship to other arts and to culture in general.
- 114A-114B. Instrumentation.** (2-2) Yr. Mr. Allen, Mr. Kremenliev  
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-B-C-D. Instrumental Technique.** Mr. Hutton, Miss Jones  
A theoretical, historical, 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.  
115A. Strings. (2) I, II.  
115B. Woodwind. (2) I, II.  
115C. Brass. (2) I, II.  
115D. Percussion and Ensemble. (2) I, II.
- 116A-116B. Piano, Advanced.** (2-2) Yr. Mr. Turner  
Prerequisite: audition for consent of the instructor.

- 117A-117B. Madrigal Choir.** (2-2) Yr. Mr. Moremen  
Prerequisite: audition for consent of the instructor.  
The study and performance of significant music of the madrigal school.
- 118. Studies in the Art of Accompanying.** (1-2) II. Mr. Turner  
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.
- 119A-119B. Advanced Violin.** (2-2) Yr. Mr. Roth  
Prerequisite: consent of the instructor.
- 120A-120B. Opera Repertoire and Interpretation.** (2-2) Yr. ———  
Prerequisite: consent of the instructor.
- 122A-122B. Advanced Counterpoint.** (2-2) Yr. Mr. Clarke  
Prerequisite: course 14A-14B, and consent of the instructor.  
Invertible counterpoint, choral prelude and fugue.
- 124. Bach.** (2) I. Mr. Rubsamen  
Prerequisite: courses 2A-2B, 35A-35B.
- 125. Beethoven.** (2) II. Mr. Turner  
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. Spiess  
Prerequisite: consent of the instructor.  
A survey of operatic music from its inception to the present day.
- 128. Modern Tendencies in Music.** (2) II. Mr. Roth  
Prerequisite: courses 14A-14B, 35A-35B.  
A study of form, style, and idiom in contemporary music.
- \*129. The Romantic Symphony.** (2) I. Mr. Kremenliev  
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: course 2A-2B.  
A study of the history and development of church music, including worship forms and liturgies.
- \*131. Oratorio Literature.** (2) II. Mr. Petran  
Prerequisite: courses 2A-2B, 35A-35B.  
A survey of oratorio music from its inception until the present day.
- 136. Folk Music.** (2) I. Mrs. Boulton  
Prerequisite: consent of the instructor.  
Origins, types, and illustrations of the folk music of various countries.

\* Not to be given, 1948-1949.

- 138. Music and Political Ideology. (2) I.** Mr. Rubsamen  
Prerequisite: 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. Turner  
Prerequisite: course 2A-2B or 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) II.**  
Prerequisite: consent of the instructor. Mr. Kremenliev  
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.
- 159. Advanced Glee Club. (1) I, II.** Mr. Moremen  
Two one-hour rehearsals each week. May be repeated once without duplication of credit.  
Prerequisite: completion of 2 units of course 9 or its equivalent, and consent of the instructor.
- 160. Advanced University Symphony Orchestra. (1-2) I, II.** Mr. Vincent  
Two two-hour rehearsals each week. May be repeated once without duplication of credit.  
Prerequisite: completion of 4 units of course 10 or its equivalent, and consent of the instructor.  
The study and performance of standard symphonic literature.
- 161. Advanced A Cappella Choir. (2) I, II.** Mr. Moremen  
Three one-hour rehearsals and one section meeting each week. May be repeated once without duplication of credit.  
Prerequisite: completion of 4 units of course 11 or its equivalent, and consent of the instructor.  
The study and performance of standard choral works.
- 166. Advanced University Band. (2) I, II.** Mr. Hunt, Mr. McNaughton  
Two two-hour rehearsals each week. May be repeated once without duplication of credit.  
Prerequisite: completion of 4 units of course 46 or its equivalent, and consent of the instructor.
- 168. Aesthetics of Music. (2) II.** \_\_\_\_\_  
A study of the principles of beauty and standards of evaluation as they relate to musical composition and performance.
- 176A-176B. Musical Composition for the Motion Picture. (3-3) Yr.** Mr. Kremenliev  
Theory and practice in the writing of music for film use.
- \*177. Conducting for the Motion Picture. (2) II.** \_\_\_\_\_  
Theory and practice in the conducting, and study of methods of recording music for the screen.
- 199. Special Studies in Music. (1-4) I, II.** Mrs. Boulton, Mr. Nelson  
Prerequisite: consent of the instructor.

\* Not to be given, 1948-1949.

## GRADUATE COURSES

- 201A-201B. Advanced Composition. (3-3) Yr. \_\_\_\_\_
- 202A-202B. Advanced Orchestration. (2-2) Yr. \_\_\_\_\_
- \*205. History of Pianoforte Style. (2) II. \_\_\_\_\_
- \*206. History of Organ Style. (2) I. Mr. Petran
207. The Variation Forms. (2) I. Mr. Nelson  
Prerequisite: courses 105A-105B and 111A-111B, or their equivalents.
- \*208. Music Criticism. (2) I. \_\_\_\_\_  
A survey of factors involved in critical evaluation.
- \*230. Pianoforte Sonatas of Beethoven. (2) I. \_\_\_\_\_  
Detailed chronological study of the development of Beethoven's sonata style.
- \*231. Wagner's Operas. (2) II. \_\_\_\_\_  
A study of the operatic works with the exception of "The Ring."
- 253A-253B. Seminar in Historical Musicology. (3-3) Yr. Mr. Petran, Mr. Spiess  
Prerequisite: course 111A-111B or the equivalent.
255. Seminar in American Music. (2) II. Mr. Vincent
- \*261. Special Studies for Composers. Seminar. (2) I, II. Mr. Vincent
- \*262. Seminar: Special Studies in Contemporary Music. (2) I. Mr. Nelson
- \*263. Seminar in Music Theory. (2) II. Mr. Petran
264. Seminar in Comparative Musicology. (2) II. \_\_\_\_\_
- \*268. Seminar in Aesthetics. (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. Miss Jones, Mr. Vincent  
Prerequisite: junior standing. Should be taken in the junior year if possible.  
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, 1948-1949.

## NAVAL SCIENCE

LAWRENCE C. GRANNIS, B.S., Captain, U.S. Navy; Professor of Naval Science (Chairman of the Department).

FRANK E. HAYLER, B.S., Comdr., U.S. Navy; Associate Professor of Naval Science.

THOMAS F. SAUNDERS, JR., B.S., Lt. Comdr., U.S. Navy; Associate Professor of Naval Science.

ROBERT B. SATTERFORD, B.S., Lt. Comd., U.S. Navy; Associate Professor of Naval Science.

STANLEY H. LANE, Lt. Comdr., U.S. Navy; Associate Professor of Naval Science.

EDGAR F. CARNEY, JR., Major, U.S. Marine Corps; Associate Professor of Naval Science.

*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 69.

## 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, Naval Reserve, Marine Corps, and Marine Corps 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 herein 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. Upon satisfactory completion of the course, a uniform becomes the property of the student who was enrolled in the Regular or Contract status.



**Types of N.R.O.T.C. Students.**—Officer candidates in the N.R.O.T.C. will be of three types:

(a) **Regular N.R.O.T.C. Students** are appointed Midshipmen, U.S.N.B., and receive retainer pay at a rate of \$600 per year for a maximum period of four years while under instruction at the N.R.O.T.C. 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. Students enrolled in this status are selected by nation-wide examination and selection, conducted during the spring preceding the student's entrance into the University in the fall.

(b) **Contract N.R.O.T.C. 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 N.R.O.T.C. 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, U.S.N., or Second Lieutenants, U.S.M.C., and serve for not less than fifteen months on active duty. Contract N.R.O.T.C. Students are required to make one summer practice cruise.

(c) **Naval Science Students**

(1) With the approval of the academic authorities, and the Bureau of Naval Personnel, students may be permitted to pursue Naval Science courses for college credit only. They are not eligible to make N.R.O.T.C. practice cruises nor to be paid any compensation or benefits.

(2) Naval Science Students may become eligible for enrollment in N.R.O.T.C. as candidates for commissions provided they comply in every respect with the requirements for original enrollment, when vacancies occur in the unit quota.

Credit may be allowed for work completed during practice cruises and summer camps at the rate of one-half unit per each two weeks' duty performed, not to exceed a total of six units.

Naval Aviation Candidate Program students will fulfill the Military requirements of the University by enrolling in the courses offered by the Department of Naval Science.

*Freshman Year*

- |  |           |
|--|-----------|
| 11. <b>Introduction to Naval Science. (3) I.</b>                                       | The Staff |
| Orientation, naval administration, and basic seamanship.<br>(BuPers Curriculum NS101). |           |
| 12. <b>Communications and Tactics. (3) II.</b>   | The Staff |
| Naval communication, system and basic tactics.<br>(BuPers Curriculum NS102).           |           |

*Sophomore Year*

- 21. Ordnance and Fire-Control. (3) I.** The Staff  
 Naval ordnance and gunnery, elementary fire-control.  
 (BuPers Curriculum NS201).
- 22. Fire-Control. (3) I, II.** The Staff  
 Advanced fire-control, sound and electronic devices.  
 (BuPers Curriculum NS202).

*Junior Year*

- 131. Navigation. (3) I.** The Staff  
 Piloting, celestial and aerial navigation.  
 Prerequisite: Mathematics C.  
 (BuPers Curriculum NS301).
- 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 equipment.  
 (BuPers Curriculum NS401).
- 142. Naval Engineering and Damage Control. (3) II.** The Staff  
 A continuation of course 141 followed by principles of 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).

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\* These courses to be pursued by candidates for commissions in the Marine Corps or Marine Corps Reserves in place of courses 132, 141, and 142.

## NURSING

LULU K. WOLF, R.N., M.P.H., Professor of Nursing (Chairman of the Department).

ELINOR LEE BEEBE, R.N., Ph.D., Associate Professor of Public Health Nursing.

CYNTHIA A. DAUCH, R.N., M.A., Assistant Professor of Public Health Nursing.

MARGARET M. ROBERTSON, R.N., M.A., Assistant Professor of Public Health Nursing.

ANNA STEFFEN, R.N., M.A., Assistant Professor of Nursing.

EVELYN T. CRARY, R.N., M.S., Instructor in Nursing.

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JANET NOLAN, M.S.S., Lecturer in Family Case Work.

## COLLEGE OF APPLIED ARTS

Professional requirements for admission to the curricula in 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 Major 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 126, including the following courses:

*Preparation for the Major.*—English 1A-1B or English 1A and Speech 1A or 3A; 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 courses 110, 111, 112, 113, 114, 319, 351; Public Health 105, 145; and 9 units to be selected from Education 111, 151; Psychology 110; Public Health 121; Sociology 120, 142, 181.

For complete plan and additional requirements of the College of Applied Arts, see page 125 in this catalogue, and the ANNOUNCEMENT OF THE COLLEGE OF APPLIED ARTS, LOS ANGELES. Recommended elective: Education 106, 112, 147, 160, 170, 180, 181; English; Home Economics 168; Psychology 112; Spanish.

**B. The General Major in Nursing.**—The degree of Bachelor of Science will be awarded to students meeting requirements for graduation in the College of Applied Arts as listed on page 125, including the following courses:

*Preparation for the Major.*—Psychology 21, 22. Blanket credit of 24 units will be allowed for the basic nurses' training.

*The Major.*—Thirty-six units of upper division courses in nursing and related fields including courses: 130, 132, 134, 333 or 334; Education 106, 117A or 117B; Psychology 110 and electives approved by departmental adviser.

**C. The Certificate Program in Public Health Nursing.**—The Certificate in Public Health Nursing will be awarded upon completion, with at least a C average, of the following courses:

Prerequisite: English 1A-1B or English 1A and Speech 1A or 3A, Home

Economics 32, Psychology 21-22, Sociology 1A-1B. These courses are prerequisite to enrollment in all upper division public health nursing courses and to admission to the curricula 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 courses 110, 111, 112, 113, 114, 319; Public Health 105, 145; and 12 units to be selected from course 351; Education 111, 151; Psychology 110; Public Health 121; Sociology 120, 142, 181. Candidates are required to be enrolled in the College of Applied Arts for at least one semester (12 units) exclusive of 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.

*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.

#### LOWER DIVISION COURSE

##### 11. Mother and Baby Care and Family Health. (2) I, II. Miss Beebe

Lectures and laboratory work dealing with the modern care of mothers and babies. Essentials of maintenance of health and of home care of the sick. Observation of community facilities. American Red Cross certificates will be granted upon satisfactory completion of the course.

#### UPPER DIVISION COURSES

##### *Public Health Nursing*

Course 111 must be taken before, or concurrently with, all other public health nursing courses.

##### 110. Family Case Work as Related to Public Health Nursing. (2) I.

Miss Nolan

Class work, field and observation study. 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.

##### 111. Development and Principles. (2) I, II.

Miss Beebe

The history and development of public health nursing, its scope, functions, and objectives; principles of organization and administration as they apply to public health nursing services under various auspices.

##### 112. Maternal and Child Health. (2) I, II.

Mrs. Robertson

Newer theories and principles of maternal, infant, and child care which are significant to public health nursing; public health nursing functions and responsibilities in the promotion of maternal, infant, and child health.

† Students are urged to complete this course at the earliest possible time. It is offered in Summer Sessions and in University Extension.

**113. Adult Health and Morbidity Services.** (2) I, II. Miss Dauch  
Public health nursing functions and responsibilities in the prevention of disease, the care of the sick, and the promotion of health in the adult with special emphasis on mental health, nutrition, industrial hygiene, heart disease, cancer, diabetes, and the problems of the aged.

**114. Communicable Disease Services.** (2) I, II. Miss Beebe  
The modern treatment of communicable diseases; and the functions and responsibilities of the public health nurse in the prevention, discovery, and care of communicable diseases, including tuberculosis and venereal disease.

**319. Field Experience in Public Health Nursing.** (1-8) I, II. Miss Dauch  
Prerequisite: consent of the instructor. Supervised field assignment with designated affiliating agencies of the Los Angeles area. Field work does not affect the residence requirement. Fee, \$20.

**351. Principles of Teaching in Public Health Nursing.** (3) I, II. Mrs. Robertson  
Adaptation of the fundamental principles of the teaching process to practical problems of public health nursing. Methods and materials of instruction as applied to individual, family, and community needs.

#### *General Major in Nursing*

**130. Principles and Methods of Teaching in Schools of Nursing.** (3) I, II. Miss Crary  
Principles of teaching applied to schools of nursing. Methods used and criteria for evaluation of formal and informal instruction.

**132. Introduction to the Study of Nursing Education.** (3) I, II. Miss Steffen  
A survey of the factors influencing the development of nursing education. Objectives of nursing education; formulation of standards and application of principles of nursing education to nursing schools.

**134. Management and Teaching in the Hospital Nursing Unit.** (3) I. Miss Steffen  
Responsibilities of the junior executive in the management, teaching, and supervision of the hospital nursing unit.

**135. Materials and Methods of Instruction in Nursing Arts.** (3) II. Miss Crary  
Introduction to the content, materials, and the methods of teaching the first course in the basic professional program.

**136. Evaluation and Reconstruction of Nursing Techniques.** (3) I, II. Miss Crary  
Teaches the evaluation of, and reconstruction of nursing techniques by emphasizing objective methods for analyzing, comparing, and applying scientific principles which will improve the practice of nursing.

**\*137. Curriculum Construction.** (3) I.  
Principles of curriculum construction and their application to building and revising nursing curricula.

\* Not to be given, 1948-1949.

**\*138. Supervision in Schools of Nursing. (3) I.**

General principles, methods and functions of supervision including the development of an appreciation of the values of the democratic philosophy in nursing supervision.

**139. Organization and Administration in Schools of Nursing. (3) I.**

Principles of organization and administration as applied to schools of nursing with emphasis on the problems related to the various areas of activity.

**333. Directed Teaching in Schools of Nursing. (6) I, II.**

*Miss Crary, Miss Steffen*

Supervised practice in the teaching of nursing subjects. Fee, \$20.

**334. Field Experience for Management and Teaching in the Hospital Nursing Unit. (6) I, II.**

*Miss Steffen*

Consisting of observation and guided practice to be arranged in coöperation with selected hospitals. Needs of the individual student will be considered in planning the training which will take at least 32 hours a week. Fee, \$20.

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\* Not to be given, 1948-1949.

## OCEANOGRAPHY

- CARL ECKART, Ph.D., Professor of Geophysics and Director of the Scripps Institution of 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 Chemistry.
- HARALD U. SVERDRUP, Ph.D., LL.D., Professor of Oceanography and Director of the Scripps Institution of Oceanography, Emeritus.
- THOMAS WAYLAND VAUGHAN, Ph.D., LL.D., Professor of Oceanography and Director of the Scripps Institution of Oceanography, Emeritus.
- CLAUDE E. ZOBELL, Ph.D., Professor of Marine Microbiology.
- 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 Director and Professor of Oceanography.
- WALTER H. MUNK, Ph.D., Assistant Professor of Geophysics.
- MARSTON C. SARGENT, Ph.D., Assistant Professor of Oceanography.
- DAYTON E. CARBITT, Ph.D., Instructor in Chemistry.
- THEODORE J. WALKER, Ph.D., Instructor in Oceanography.
- STANLEY W. CHAMBERS, A.B., Associate in Physical Oceanography.
- FRANCIS P. SHEPARD, Ph.D., Associate in Oceanography.
- WESLEY R. COE, Ph.D., Sc.D., Research Associate.
- SAM D. HINTON, A.B., Senior Museum Zoölogist.
- RUSSELL W. RAITT, Ph.D., Senior Research Associate.

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 69.

*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 semesters 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 coöperative 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., chemistry, geological sciences, meteorology, microbiology, physical-biological science, plant science, 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, SOUTHERN SECTION. In addition, the student is required to complete at least two of 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. Revelle

111. **Submarine Geology.** (3) I. Mr. Shepard

112. **Biology of the Sea.** (3) I. Mr. Johnson

113. **Chemistry of Sea Water.** (3) I. Mr. Rakestraw

114. **Marine Vertebrates.** (3) I. Mr. Hubbs

\*115. **Differential Equations of Geophysics, Vector Analysis.** (2-4).

116. **Principles of Underwater Sound.** (2) II. Mr. Raitt

Elementary discussion of the propagation of sound in an ideal medium. Differences between the ocean and an ideal medium. Refraction of sound rays by the temperature gradients in the ocean. Experimental results on the transmission of sound in the ocean. Oceanography of temperature gradients. The scattering of sound by the ocean surface, bottom, and volume. Theoretical and experimental results on backward scattering (reverberation).

117. **Chemical Methods.** (1) II. Mr. Rakestraw, Mr. Carritt

Prerequisite: Oceanography 113.

A laboratory course dealing with the chemical methods of analysis in routine use in oceanographic observations and the assembling and correlating of chemical data.

118. **Statistics.** (2) II. Mr. McEwen

Theory of correlation; frequency distribution; interpolation; harmonic analysis.

199. **Special Studies in Marine Sciences.** (2-4) I, II.

Introduction to the observational and experimental methods, research

\* Not to be given, 1948-1949.



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. McEwen
(b) Marine Meteorology	Mr. McEwen
(c) Marine Geology	Mr. Shepard
(d) Chemical Oceanography	Mr. Rakestraw, Mr. Carritt
(e) Marine Microbiology	Mr. ZoBell
(f) Marine Botany	Mr. Sargent
(g) Marine Invertebrates	Mr. Johnson
(h) Marine Biochemistry	Mr. Fox
(i) Fishes and Fisheries	Mr. Hubbs

#### GRADUATE COURSES

##### 210. Physical Oceanography, General. (3) II.

Dynamics of ocean currents; turbulence; wind currents; atmospheric boundary layer; water masses and currents of the ocean; work at sea.

##### 211. Waves. (4) II.

Mr. Munk

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.

##### 217. Hydrodynamics. (3) I.

Mr. Eckart

A systematic exposition of the principles governing the flow of fluids. The various mathematical forms of the conservation principles (matter, momentum, energy) and of the second law of thermodynamics are derived and illustrated by examples and problems.

##### 220. Special Topics in Oceanography. (2) I.

The Staff and Visitors

Lectures and demonstrations by different members of the staff and visitors. Present problems in oceanography; applications of oceanographic knowledge.

##### 250. Seminar in Oceanography. (1) I, II.

Mr. Eckart 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. McEwen

A study of the physical properties of sea water, oceanic circulation and its causes.

\* Not to be given, 1948-1949.

**282. Marine Meteorology. (2-4) I, II.****Mr. McEwen**

Interrelation between the circulation of the oceans and that of the atmosphere.

**283. Marine Geology. (2-4) I, II.****Mr. Shepard**

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.****Mr. Sargent**

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. (2-6) I, II.**

(a) Physical Oceanography

**Mr. Eckart, Mr. McEwen**

(b) Marine Meteorology

**Mr. McEwen**

(c) Marine Geology

**Mr. Shepard**

(d) Chemical Oceanography

**Mr. Rakestraw**

(e) Marine Microbiology

**Mr. ZoBell**

(f) Marine Botany

**Mr. Sargent**

(g) Marine Invertebrates and Zoöplankton

**Mr. Johnson**

(h) Marine Biochemistry

**Mr. Fox**

(i) Ichthyology and Fisheries Research

**Mr. Hubbs**

# ORIENTAL LANGUAGES

**RICHARD C. RUDOLPH, Ph.D.**, Associate Professor of Oriental Languages  
(Chairman of the Department).

**ENSHO ASHIKAGA, M.Litt.**, Instructor in Oriental Languages.

**Y. C. CHU, M.A.**, Lecturer in Chinese.

*Letters and Science List.*—All undergraduate courses in Oriental languages are included in the Letters and Science List of Courses. For regulations covering this list, see page 69 of this catalogue.

*Preparation for the Major.*—Courses 1A-1B or 21A-21B, 9A-9B or 29A-29B, and 13A-13B. Recommended: Anthropology 1B.

*The Major.*—Required: Twenty-four upper division units of Oriental languages of which 16 units must be in language courses, and History 191A. Recommended: History 191B, Geography 124B, Art 161A-161B. A reading knowledge of French and German is highly desirable.

## LOWER DIVISION COURSES

**1A-1B. Elementary Modern Chinese.** (4-4) Yr. Mr. Chu  
Introduction to the standard or "National Language" (Kuo Yü) of China.

Not open to students with previous training. Five hours a week.

**9A-9B. Elementary Modern Japanese.** (4-4) Yr. Mr. Ashikaga  
Not open to students with previous training. Five hours a week.

**13A-13B. Classical Chinese.** (2-2) Yr. Mr. Rudolph  
Prerequisite: Course 1A or consent of the instructor.  
Introduction to the development of Chinese writing and the Classical language in which the bulk of Chinese literature is written.

**21A-21B. Chinese Oral and Written Composition.** (3-3) Yr. Mr. Chu  
An elementary course for those who have had previous training in Chinese.

**29A-29B. Japanese Oral and Written Composition.** (3-3) Yr. Mr. Ashikaga  
An elementary course for those who have had previous training in Japanese.

**42. History of Chinese Civilization.** (2) I. Mr. Rudolph  
Prerequisite: sophomore standing.  
A survey of the development of the outstanding aspects of Chinese culture from prehistoric times to the eighteenth century, with emphasis on the archaeology of China.

## UPPER DIVISION COURSES

**101A-101B. Intermediate Chinese.** (3-3) Yr. Mr. Chu  
A continuation of 1A-1B.

**109A-109B. Intermediate Modern Japanese.** (3-3) Yr. Mr. Ashikaga  
A continuation of 9A-9B.

- 112. Chinese Literature in Translation. (2) II.** Mr. Rudolph  
Lectures and collateral reading of representative works—including classics, histories, belles-lettres, and fiction—in Western translations. Special emphasis will be given to the writings resulting from the literary revolution (1917).
- 113A-113B. Intermediate Classical Chinese. (2-2) Yr.** Mr. Rudolph  
Further readings in the classics.
- 119A-119B. Advanced Modern Japanese. (3-3) Yr.** Mr. Ashikaga  
A continuation of 29A-29B and 109A-109B.
- 121A-121B. Advanced Chinese. (3-3) Yr.** Mr. Chu  
A continuation of 21A-21B and 101A-101B, with practice in newspaper style.
- 129A-129B. Classical Japanese and Kambun. (2-2)** Mr. Ashikaga
- \*163. Readings in Chinese. (3) I.** Mr. Rudolph  
Selections from masters in the *Ku wen* style.
- \*173. Chinese Historical Texts. (2) II.** Mr. Rudolph
- \*195. Methods and Bibliography in Chinese Research. (2) II.** Mr. Rudolph
- \*199. Special Individual Study. (1-4) I, II.** The Staff

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\* Not to be given, 1948-1949.

## ORNAMENTAL HORTICULTURE

A Division of the Department of Agriculture

VERNON T. STOUTEMYER, Ph.D., Professor of Ornamental Horticulture (Chairman of the Division).

B. LENNART JOHNSON, Ph.D., Assistant Professor of Ornamental Horticulture.

\_\_\_\_\_, Assistant Professor of Floriculture.

*Preparation for the Major.*—Subtropical Horticulture 110 or the equivalent, and the requirements in the Plant Science Curriculum (see pages 105–106 of this catalogue, or the PROSPECTUS OF THE COLLEGE OF AGRICULTURE).

*The Major.*—Twelve units of upper division courses, including Ornamental Horticulture 131A–131B and 136.

## UPPER DIVISION COURSES

**131A–131B. Taxonomic Classification and Ecology of Ornamental Plants.** (3–3) Yr. Mr. Stoutemyer

Lectures, two hours; laboratory, three hours; several field trips. Prerequisite: Botany 1, 2.

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) II. Mr. Stoutemyer, \_\_\_\_\_

Lectures, two hours; laboratory, six hours; several field trips. Prerequisite: Subtropical Horticulture 110, or the equivalent.

Principles and practices of general floriculture, with special reference to the more important flower crops grown in California.

**140. Plant Genetics.** (4) I. Mr. Johnson

Lectures, three hours; laboratory, three hours.

Prerequisite: Botany 1, 2, or equivalent.

The fundamentals of genetics with special reference to the breeding of horticultural plants.

**199A–199B. Special Study for Advanced Undergraduates.** (2–4; 2–4) Yr. The Staff

Prerequisite: senior standing and consent of the instructor.

## GRADUATE COURSE

**286A–286B. Research in Ornamental Horticulture.** (2–6; 2–6) Yr. The Staff

## PHILOSOPHY

HUGH MILLER, Ph.D., Professor of Philosophy.

RALPH BARTON PERRY, Ph.D., Litt.D., LL.D., Flint Professor of Philosophy.

DONALD A. PIATT, Ph.D., Professor of Philosophy (Chairman of the Department).

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.

J. WESLEY ROBSON, Ph.D., Associate Professor of Philosophy.

ABRAHAM KAPLAN, Ph.D., Assistant Professor of Philosophy.

ROBERT M. YOST, JR., Ph.D., Instructor in Philosophy.

E. HOLMES BEARDEN, M.A., Associate 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 69.

*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, including:

1. Course 148 (unless course 31 has been taken).
2. Six units from among courses 152, 153, 162, 163, 166.
3. Six units from among courses 104A-B, 121, 147, 183.

Three units of the upper division requirement may be from courses in other departments, provided they are relevant to the major and approved by the departmental adviser.

*Requirements for Regular Graduate Standing.*—In addition to the general university requirements and those for an undergraduate major in this department, the following courses (or their equivalents) are prerequisite to regular graduate standing: course 31, 104A-B, 152 or 153, 162 or 163, 166, and three units from the Systematic Studies group numbered 180 to 189.

*Requirements for the Master's Degree.*—For the general requirements, see page 134. 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 136. 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, theory of value and ethics, social philosophy. (b) An oral examination in the field of the student's special interests.

### LOWER DIVISION COURSES

All lower division courses are introductory and without prerequisite, except as otherwise stated.

**2A-2B. Introduction to Philosophy. (3-3)** Yr. Beginning either semester.

Mr. Piatt, Mr. Yost, Mr. Bearden

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.

Course 2A is a prerequisite to course 2B, and is not open for credit to students who have completed course 4.

**4. Short Introduction to Philosophy. (2)** I, II.

Mr. Bearden

Not open for credit to students who have completed 2A.

**5. Problems of Ethics and Religion. (2)** I.

Human conduct, its rules and natural law; the moral basis of institutions; religion and the moral order.

**6. Logic in Practice. (2)** I.

Mr. Kaplan

Language and its analysis as an instrument of sound thinking in morals, politics, and everyday life.

**20. History of Greek Philosophy. (3)** I, II.

Mr. Robson, Mr. Yost

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.

Mr. Robson, Mr. Yost

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)** I, II.

Mr. Reichenbach, 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, Mr. Reichenbach

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 188), 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

Prerequisite for all courses in this group: 6 units in philosophy or upper division standing, except as otherwise stated.

#### 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. Perry

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.

#### 123. Romanticism and Evolution. (2) II.

Mr. Kaplan

The impact of romanticist and evolutionary philosophies on ethics, politics, and literature, with special reference to Schopenhauer, Nietzsche, and Bergson.

#### 136. Philosophy of Art. (3) II.

Mr. Kaplan

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.

#### 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 historical progress, relating human progress to the natural evolution described by modern science.



**\*148. Philosophy of Nature. (3) I.**

Mr. Reichenbach

The physical universe and man's place in it in the light of modern discoveries.

*Historical Studies*

Prerequisite for all courses in this group: upper division standing in addition to the specific requirements stated.

**152. Plato and His Predecessors. (3) I.**

Mr. Friedlander

Prerequisite: course 20 or consent of the instructor.

**153. Aristotle and Later Greek Philosophy. (3) II.**

Mr. Friedlander

Prerequisite: course 20 or 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) II.**

Mr. Yost

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.**

Mr. Kaplan

Prerequisite: course 162 or 163, or consent of the instructor.

**167. Post-Kantian Idealism. (2) II.**

Prerequisite: course 166.

**168. Development of Scientific Empiricism. (2) I.**

Mr. Robson

Prerequisite: course 21, or consent of the instructor.

Positivism, materialism, and the philosophies of science in the nineteenth and early twentieth centuries, with special reference to Comte, Spencer, Mach, and Russell.

**\*172. Contemporary Philosophy: Idealism. (2) I.**

Prerequisite: course 21.

Idealism in Europe and America, with special reference to Bradley, Royce, Bergson, Croce.

**174. Contemporary Philosophy: Realism. (2) II.**

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: 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.

\* Not to be given, 1948-1949.

**\*176. Naturalism. (2) II.**

Mr. Piatt

Prerequisite: 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*

Prerequisite for all courses in this group: upper division standing in addition to the specific requirements stated.

**\*180. Philosophy of Space and Time. (3) II.**

Mr. Reichenbach

Prerequisite: course 30 or the equivalent.

Euclidean and non-Euclidean geometry; problem of physical space; visualization of geometrical systems; structure of time; philosophical elements of Einstein's theory of relativity; gravitation, matter, geometry.

**181. Theory of Knowledge. (3) I.**

Mr. Yost

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.

**\*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: consent of the instructor, based on preparation in philosophy, psychology, and social science.

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) I.**

Mr. Reichenbach

Prerequisite: course 31 or the equivalent.

Methods of symbolic logic; 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: 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. Piatt in charge

\* Not to be given, 1948-1949.

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. Perry
*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) II.	Mr. Reichenbach
264. Seminar: Logic. (3) I.	Mr. Reichenbach
298A-298B. Special Study: Selected Problems in Philosophy. (2-4; 2-4) Yr.	Mr. Piatt in charge

RELATED COURSE IN ANOTHER DEPARTMENT

*Sociology 169. Ethical Problems of Social Organization. (3) II.	Mr. Selznick, Mr. Kaplan
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\* Not to be given, 1948-1949.

**PHYSICAL EDUCATION**

**ROSALIND CASSIDY, Ed.D.,** Professor of Physical Education.

**CARL HAVEN YOUNG, Ed.D.,** Professor of Physical Education (Chairman of the Department).

**JOHN F. BOVARD, Ph.D.,** Professor of Physical Education, Emeritus.

**MARTHA B. DEANE, B.S.,** Associate Professor of Physical Education and Director of the Women's Division.

**EDWARD B. JOHNS, Ed.D.,** Associate Professor of Physical Education.

**HAZEL J. CUBBERLEY, M.A.,** Associate Professor of Physical Education, Emeritus.

**RUTH E. FULTON, Ph.D.,** Assistant Professor of Physical Education.

**MARGARET D. GREENE, M.A.,** Assistant Professor of Physical Education.

**VALERIE HUNT, Ed.D.,** Assistant Professor of Physical Education.

**WESLEY STATON, M.S.,** Instructor in Physical Education.

**WILLIAM H. SPAULDING, A.B.,** Director of Athletics, Emeritus.

**NORMAN D. DUNCAN, M.A.,** Associate Supervisor of Physical Education and Director of the Men's Division.

\* **PAUL FRAMPTON, M.A.,** Associate Supervisor of Physical Education.

**DONALD T. HANDY, M.A.,** Associate Supervisor of Physical Education.

**CECIL B. HOLLINGSWORTH, M.A.,** Associate Supervisor of Physical Education.

**EDITH I. HYDE, M.A.,** Associate Supervisor of Physical Education.

**DONALD K. PARK, B.S.,** Associate Supervisor of Physical Education.

**ORSIE THOMSON, M.A.,** Associate Supervisor of Physical Education.

**MARJORY ALLEN, Ed.B.,** Assistant Supervisor of Physical Education.

**DIANA W. ANDERSON, M.A.,** Assistant Supervisor of Physical Education and Supervisor of Training, Physical Education.

**WALTER CROWE, B.S.,** Assistant Supervisor in Physical Education.

**EDITH B. HARSHBERGER, M.A.,** Assistant Supervisor of Physical Education.

**M. BRIGGS HUNT, Ed.B.,** Assistant Supervisor in Physical Education.

**JACK E. MONTGOMERY, M.S.,** Assistant Supervisor of Physical Education.

**ELEANOR B. PASTERNAK, B.S.,** Assistant Supervisor of Physical Education.

**WAYNE ROSENOFF, B.S.,** Assistant Supervisor in Physical Education.

**JOHN SELLWOOD, M.S.,** Assistant Supervisor in Physical Education.

**HELEN JEAN SWENSON, M.S.,** Assistant Supervisor of Physical Education.

**JACLYN ALBI, M.A.,** Junior Supervisor in Physical Education.

**MILDRED ANDERSON, M.A.,** Junior Supervisor in Physical Education.

**JUNE BRECK, M.A.,** Junior Supervisor in Physical Education.

**VICTOR L. BROWN, M.S.,** Junior Supervisor in Physical Education.

**HELEN CLARKE, B.S.,** Junior Supervisor in Physical Education.

**HELEN COLEMAN, M.A.,** Junior Supervisor in Physical Education.

**JOSEPHINE DYSON, M.A.,** Junior Supervisor in Physical Education.

**BEN F. FERGUSON, M.S.,** Junior Supervisor in Physical Education.

**WILLIAM FRANTZ, B.S.,** Junior Supervisor in Physical Education.

**STANLEY GABRIELSON, M.A.,** Junior Supervisor in Physical Education.

\* Absent on leave, 1948-1949.

VIRGINIA INGRAM, M.A., Junior Supervisor in Physical Education.  
THAYER R. JORRIS, B.S., Junior Supervisor in Physical Education.  
LILLIAN LITTLE, M.A., Junior Supervisor in Physical Education.  
BARBARA MACK, M.A., Junior Supervisor in Physical Education.  
CARL MICHAEL O'GARA, B.S., Junior Supervisor in Physical Education.  
WILLIAM PATTERSON, M.A., Junior Supervisor in Physical Education.  
JEANNE RILEY, B.A., Junior Supervisor in Physical Education.  
C. ROBERT STICHTER, B.E., Junior Supervisor in Physical Education.  
JOHN THOMPSON, M.S., Junior Supervisor in Physical Education.  
EVELYN STRAUSS LOEWENDAHL, Assistant in Physical Education.  
PIA GILBERT, Assistant and Pianist.  
MIRIAM SHERMAN, Pianist.  
DONALD MCKINNON, M.D., Physician for Men.  
ELIZABETH HARTSHORN, M.A., Lecturer in Physical Education.

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 Registrar 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.

Assignment to men's activities in physical education is elective in that freshmen may choose activity courses from *a-h*, and sophomores may choose activity courses from *a-o*. Swimming is the only required activity for all lower division students. Exemption from swimming is allowed upon passing a competence test. An activity course may be taken for credit once only:

- a. Apparatus and tumbling
- b. Basic fundamentals
- c. Boxing
- d. Developmental physical education
- e. Swimming (elementary)
- f. Swimming (advanced)
- g. Track and field
- h. Wrestling
- i. Games, fall (touch football, soccer, volleyball)
- j. Games, spring (speedball, softball)
- k. Tennis
- l. Golf
- m. Archery
- n. Basketball
- o. Handball

Complete uniform will be furnished by the Physical Education Department, except for gym shoes and rubber bathing caps which are required for swimming and will be furnished by the student.

**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 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

## 1. Major in Physical Education.

## WOMEN

*Preparation for the Major.*—Courses 5, 29, 30, 31, 32, 35, 44; Chemistry 2 or 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 electives selected from 131, 139, 140, 140C, 141, 142, 143, 144, 150, 151, 153A-153B, 154, 155, 160, 183, 199A-199B, Psychology 110.

## MEN

*Preparation for the Major.*—Courses 5, 6, 7, 8, 9, 20, 24, 44; Chemistry 2; Zoölogy 15, 35.

*The Major.*—Thirty-six units of upper division courses in physical education and related fields, including courses 101, 102, 105, 130, 131, 133, 145A-145B, 354, 355A-355B, 356A-356B; and electives selected from 140, 140C, 142, 171, 199A-199B; Psychology 110.

## MEN AND WOMEN

*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.

## 2. Major in Health Education (Men and Women).

## (a) Plan I. School Health Education and Physical Education.

*Preparation for the Major.*—Chemistry 2; Bacteriology 1; Zoölogy 15, 35; Psychology 21, 22; English 1A-1B, or English 1A-Speech 1A, or Speech 1A-1B; Physical Education 5, 44 and 6, 7, 8, 9 (men), or 29, 30, 31, 32 (women).

*The Major.*—Thirty-six units of upper division courses, including Home Economics 168; Sociology 101; Psychology 145A-145B; Education 112; Public Health 105, 145; Physical Education 101, 102, 105, 132 or 133, 145A-145B, 160.

Students completing *Plan I* may proceed with the graduate program as follows:

A. Enter the Graduate Division, Southern Section, to work for the general secondary teaching credential and/or the degree of Master of Science (Specialist, School Health Education).

B. After 3 years of teaching experience, enter the School of Public Health, University of California, Berkeley, to work for the degree of Master of Public Health (Specialist, Public Health Education).

## (b) Plan II. School Health Education and Public Health Education.

**Preparation for the Major.**—Chemistry 2; Bacteriology 1; Zoölogy 15, 35; Psychology 21, 22; English 1A-1B, or English 1A-Speech 1A, or Speech 1A-1B; Physical Education 1 or 26, 5, 44.

**The Major.**—Thirty-six units of upper division courses, including Home Economics 168; Sociology 101; Psychology 145A-145B; Public Health 105, 111, 121, 145, 167; Physical Education 101, 102, 145A-145B, 160.

Students completing *Plan II* may proceed with the graduate program as follows:

A. After apprenticeship in a public health department or teaching experience, enroll in the School of Public Health, University of California, Berkeley, to work for the degree of Master of Public Health (Specialist, Public Health Education).

B. Enter the Graduate Division, Southern Section, to work for general secondary teaching credential and/or the degree of Master of Science (Specialist, School Health Education).

### 3. *Major in Physical Therapy (Men and Women).*

(a) *Affiliation Plan* (leading to degree and certificate). This 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 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 10; 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, orthopaedics, surgery), ethics and administration, elective courses recommended by the American Medical Association and the American Physical Therapy Association, and clinical practice. A maximum of 30 units will be allowed for completion of the Hospital program.

(b) *Four-year Plan* (leading to degree only). Curriculum designed to prepare students to enter schools of physical therapy other than Children's Hospital. Leads to the degree of Bachelor of Science only.

**Preparation for the Major.**—Courses 5, 20, 43, 44; Chemistry 2A; Physics 10 or 2A; Zoölogy 15, 35. Recommended: Art 27A; Psychology 21, 22; Speech 1A, 1B; Sociology 1A-1B.

**The Major.**—Thirty-six units of upper division courses, including 101, 102, 105, 145A-145B, 183, 184, 185, and electives selected from courses 130, 140, 141, 142, 155, 160; Education 110, 111, 112, 160, 180; Psychology 108, 112, 113, 166A-166B, 168.

### 4. *Major in Recreation (Men and Women).*

This major is designed to develop leaders in recreation with a sound general education, and insight into the social responsibilities of community agencies,

\* 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.

and an understanding of the nature and significance of group work as a technique.

**Preparation for the Major.**—Courses 1 or 26, 5, 23, 44; Art 27A–27B; Theater Arts 48A–48B; Astronomy 1; Biology 1; Botany 1A; Speech 3A; Geology 5; Music 2A–2B; Sociology 1A–1B.

**The Major.**—Thirty-six units of upper division courses, including 132, 139, 140, 140C, 140D, 141, 142, 143, 144, 152, 155; Psychology 147; Sociology 143 and 189; Theater Arts 156A.

#### 5. Teaching Minor in Physical Education (Men and Women).

Twenty-four units of coordinated courses (aside from those taken in education), not less than 6 of which are in the upper division. All courses must be approved by an adviser in the Department of Physical Education.

#### 6. Curriculum in Dance. For details concerning this curriculum, see page 129.

### 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 69.

#### LOWER DIVISION COURSES

#### 1. Prescribed Physical Education for Freshmen and Sophomores (Men). (4) 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. Students whose physical condition indicates the need of modified activity are assigned to individual physical education classes.

#### 2. Hygiene and Sanitation. (2) I, II. Mr. McKinnon

A broad elementary course emphasizing the strictly practical aspects of hygiene.

#### 5. Safety Education and First Aid. (2) I, II. Mr. Crowe

Prevention and care of common accidents and emergencies in the home and school. American Red Cross instructor's certificate granted upon satisfactory completion of the course.

#### \*6. Professional Activities (Men). (1½) I. Mr. Frampton

Designed for major and minor students in physical education. Fundamental knowledges and skills in baseball, softball, and volleyball.

#### \*7. Professional Activities (Men). (1½) II. Mr. Montgomery

Designed for major and minor students in physical education. Fundamental knowledges and skills in football and soccer.

#### \*8. Professional Activities (Men). (1½) I. Mr. Montgomery

Designed for major and minor students in physical education. Fundamental knowledges and skills in basketball and speedball.

† 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.

\* This course may be accepted in lieu of the required course, Physical Education 1, with the consent of the adviser.



## *Physical Education*

- \*9. Professional Activities (Men). (1½) II.** Mr. Frampton  
Designed for major and minor students in physical education. Fundamental knowledges and skills in track and field, and tumbling and apparatus.
- \*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. (1) I.** Miss Hunt, Mr. Hollingsworth
- 23. Recreational Activities. (1) I, II.**  
Participation and instruction in a variety of activities of a recreational nature: golf, bowling, badminton, ice-skating, arts, crafts, etc.
- \*24. Advanced Swimming and Life Saving. (2) Men I, II. Women II.** Mr. Montgomery, Miss Fulton  
The Senior Red Cross Life Saving and Instructor's Certificate will be issued to those students who successfully meet the requirements. Qualifying test required.
- 26. Prescribed Physical Education for Freshmen and Sophomores (Women). (½) I, II.** 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.
- \*27. Games for the Elementary School. (1) I, II.** Mrs. Allen, Miss Breck  
Open only to students who are to be candidates for the elementary school credentials and students majoring in recreation.
- \*28. Rhythms for the Elementary School. (1) I, II.** ———, Miss Riley  
Fundamental and creative rhythmic activities, percussion and musical accompaniment, and folk dancing.  
Open only to students who are to be candidates for the elementary school credential, and students majoring in recreation.
- \*29. Professional Activities (Women). (3) I.** The Staff  
Open only to students with a major or minor in physical education.
- \*30. Professional Activities (Women). (3) II.** The Staff  
Open only to students with a major or minor in physical education.
- \*31. Professional Activities (Women). (3) I.** The Staff  
Open only to students with a major or minor in physical education.
- \*32. Professional Activities (Women). (3) II.** The Staff  
Open only to students with a major or minor in physical education.

\* Not to be given, 1948-1949.

\* Students may substitute this course for the required courses, Physical Education 1 or 26, for the semester in which they are enrolled.

\*\* Students may substitute this course for the required course, Physical Education 26, for the semester in which they are enrolled.

**35. Music Analysis for Dance Accompaniment.** (2) I, II. Mrs. Gilbert  
Analysis of musical forms and structure in relation to their use in dance forms. A workshop class in study of rhythms, using piano and percussion instruments.

**43. Recreation for the Handicapped.** (1) II. Miss Hunt  
Play as therapy through provision of normal experiences for the disabled. Includes group organization, teaching techniques, and modification of activities. Designed for social workers, nurses, therapists, recreation leaders, and teachers.

**44. Principles of Healthful Living.** (3) I, II.  
Miss Harshberger, Mr. Johns, Miss Thomson  
Fundamentals of healthful living designed to provide scientific health information, promote desirable attitudes and practices.

#### UPPER DIVISION COURSES

**101. Kinesiology.** (3) I, II. Miss Hunt, Miss Thomson, Mr. Sellwood  
Prerequisite: Zoölogy 35.  
A study of the structure, function, and mechanical principles relating to human motion, and application in the analysis of specific activities.

**102. Developmental Physical Education.** (3) I, II. Miss Hunt, Mr. Sellwood  
Prerequisite: course 101 or consent of the instructor.  
Analysis and evaluation of aims, techniques, and procedures in developmental, preventive, and corrective measures. Special problems, such as survey of the situation, recognition of divergencies, selecting and assigning of students, instructional problems, motivation, follow-up, teacher limitations, and public relations are considered.

**105. Physiology of Exercise.** (3) I, II. Miss Fulton  
Prerequisite: Zoölogy 15.  
Study of the physiological aspects of exercise and training with the purpose of planning and evaluating programs of physical activity.

**120. Professional Orientation in Health, Physical Education, and Recreation. (Women).** (2) I. Miss Hyde  
The scope and significance of health, physical education, and recreation in the modern school program. Open only to students with a major or minor in physical education. Required of all upper division transfers and those not having taken Physical Education 20, 29, and 30.

**130. Principles of Physical Education.** (2) I, II. Miss Deane, Mr. Hollingsworth  
A critical analysis of the assumptions underlying the physical education program.

**131. Organization and Administration of Physical Education.** (3) II. Miss Thomson, Mr. Duncan  
Prerequisite: Physical Education 130.

**132. Conduct of the Program of Sports (Women).** (2) I. Miss Thomson  
Prerequisite: course 130, 326A, and 326B.  
A study of the principles and policies underlying the program of sports for girls in the secondary schools; selection of activities, class management, organization of clubs, athletic associations, tournaments, sports days.

- 133. Organization of the Class (Men). (2) I.** Mr. Handy  
Prerequisite: junior standing.  
One lecture and two laboratory periods.  
Teacher responsibilities in class organization on the secondary school level.  
Practical methods in directed exercises: social dance and folk dancing, games and relays, and social mixers.
- 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. (3) II.** Miss Swenson  
Prerequisite: course 139.
- 140C. Community Recreation Laboratory. (2) I, II.** \_\_\_\_\_  
Prerequisite: courses 139, 140, 141, or consent of the instructor.  
Each student, acting as the leader, through observation and practical experience will plan, organize, and administer a recreation program for a group in the community.
- 140D. Community Recreation Laboratory. (2) I, II.** \_\_\_\_\_  
Prerequisite: courses 139, 140, 141, or consent of the instructor.  
A continuation of course 140C to embody different content, work with new material, or a different age group.
- 141. Club Activities. (2) I.** Miss Riley  
Training course for leaders of organizations interested in physical and social welfare.
- 142. Camp Leadership (Men and Women). (2) II.** Miss Swenson  
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. School Health Education (Men and Women). (3) I, II.** Mr. Johns, Miss Harshberger  
Prerequisite: course 44, or consent of the instructor.  
A study of the school health program as an integral part of the school curriculum; the underlying principles and functions of health instruction, health service, healthful school living; and the contributing community health agencies.
- 145B. School Health Education (Men and Women). (3) I, II.** Mr. Johns, Miss Harshberger  
Prerequisite: course 44, 145A, or consent of the instructor.  
A synthesis of the major areas of health education in the elementary and secondary school program.
- 146. Social Aspects of Health. (2) I, II.** Miss Harshberger  
Not open to majors in physical education or to students who have credit for 145A, 145B.

**147. Health Education in the Elementary School. (3) I, II.**

Miss Harshberger, Miss Thomson

A course for general elementary credential candidates designed to develop an understanding of the functional school and community health program; the responsibility of the teacher in meeting student health needs.

**150. History of Dance and the Related Arts. (2) II.**

Miss Hartshorn

A survey of the historic development of various media of expression, interrelating these arts: dance, music, painting, sculpture, architecture, literature, and poetry.

**151. History of Dance in America. (2) I.**

Mrs. Pasternak

**152. Organization of Public Performances. (2) II.**

Mrs. Pasternak

Consideration of purpose, sources of materials, production procedure for folk festivals, dance recitals, and other special events.

**153A-153B. Dance Composition Workshop. (2-2) Yr.**

Miss Riley

Prerequisite: course 31, 26, or consent of the instructor.

Analysis of the elements and process of dance composition, and practice in individual and group composition and evaluation.

**154. Advanced Music Analysis for Dance. (2) II.**

Mrs. Gilbert

A workshop class with emphasis on piano and percussion improvisation; analysis of music for the dance; the historical development of musical forms used in dance; building an accompanist's repertoire.

**155. Folk Festivals. (2) I.**

Mrs. Pasternak

Study of folk-lore in relation to festivals and pageants. The preparation of an original festival.

**160. Counseling in the Physical Education Program. (2) I.**

Miss Cassidy

A study of present-day principles and procedures used in guiding students through physical education experiences in secondary school and college.

**171. Conditioning of Athletes and Care of Injuries (Men). (2) II.**

Lecture, one hour; laboratory, two hours.

Mr. Montgomery

Prerequisite: course 105.

Anatomical and physiological approach to conditioning as it relates to athletic teams and the prevention of athletic injuries.

**183. Massage. (2) I.**

Mrs. Loewendahl

Massage and techniques of relaxation for athletic injuries, muscle soreness, and tension.

**184. Muscle Reëducation. (3) II.**

Mrs. Loewendahl

Lectures, demonstrations, and clinical practice. For students in the fields of physical, recreational, and occupational therapy.

Muscle reëducation techniques in paralyses, orthopaedic and surgical cases, muscle analyses and techniques of testing.

**185. Physical Activities for Rehabilitation. (2) I.**

Mrs. Loewendahl

Lectures and field trips to rehabilitative centers.

A survey of rehabilitative methods used as therapy in the field of physical and mental disabilities.

**199A-199B. Physical Education Problems (Individual). (1-4; 1-4)**

Beginning either semester.

Miss Deane, Mr. Young

Prerequisite: consent of the instructor.

## GRADUATE COURSES

**201. Secondary School Curriculum in Physical Education. (3) II.**

Miss Cassidy, Mr. Handy

A study of physical education programs based on the needs of boys and girls in American secondary schools. (Primarily for fifth-year students preparing for the General Secondary Credential. Units will count toward the requirement of 6 units in graduate courses necessary for this credential.)

**227. Comparative Study of Materials and Methods in Dance. (3) II.**

Miss Deane

A study of educational ideas and practices as they relate to the various forms of dance, primarily designed for students in the fifth year preparing for the General Secondary Credential.

**235. Evaluation Procedures. Seminar. (2) II.**

Miss Fulton

Prerequisite: consent of the instructor.

Methods in test construction, interpretation, and application.

**245. Curriculum Development in Health Education. (3) I.**

Mr. Johns

Prerequisite: courses 145A-145B or consent of the instructor.

The development of the health instruction program based on the health needs of school-age children. The formulation of objectives, scope and sequence of instruction, the examination of teaching methods, source materials, community resources, and evaluation procedures.

**250. Changing Perspectives in the Profession. Seminar. (2) II.**

The Staff

Prerequisite: consent of the instructor.

A student staff examination of changing perspectives in the field directed toward the formulation of a working professional philosophy.

**255. Administrative Interrelationships in Health Education. Seminar.**

(3) II.

Mr. Johns

Prerequisite: consent of the instructor.

A consideration of the principles, policies, and practices involved in the interrelationships of the school curriculum, the public and private health agencies in the community.

**260. Seminar in Physical Education. (3) I.**

Mr. Young

Prerequisite: consent of the instructor.

The theory of physical education.

**261. Seminar in Physical Education. (3) II.**

Mr. Young

Prerequisite: consent of the instructor.

Physiological background.

**\*265A-265B. Foundations of the Physical Education Curriculum. (2-2) Yr.**

Miss Cassidy

A study of the process of present-day curriculum-making in physical education based on a critical analysis of the areas of individual and group needs in contemporary society. Students may center their individual studies at elementary, secondary, or college level.

\* 265A to be given spring semester only. 265B not to be given, 1948-1949.

- 276. Fundamentals of Research. Seminar. (2) I, II.** Mr. Young  
The application of scientific methods and techniques to aid in the selection and solution of research studies and thesis problems.
- 277. Research in Physical Education. (2) I.** Mr. Young  
Prerequisite: consent of the instructor.  
Research in tests and measurements.
- 285. Developmental Physical Education. Seminar. (3) I.** Mr. Young  
An intensive survey in all aspects of developmental (corrective) physical education, with special emphasis on growth and developmental factors, postural divergencies, debilitating conditions, exercises, class procedures, and ethical practices and limitations.
- 299. Independent Study. (2-6) I, II.** The Staff  
Prerequisite: consent of the instructor.  
Independent study in areas of guidance in physical education; developmental physical education; health education; dance; evaluation procedures.

#### PROFESSIONAL COURSES IN METHOD

- 326A-326B. Principles of Teaching Athletics (Women). (2-2) Yr.**  
Prerequisite: course 32 or the equivalent. Miss Hyde  
Analysis of problems in teaching athletic activities, including techniques and game forms, with special reference to their use in planning teaching units and lesson plans. Advanced practice is provided in team activities, with emphasis on the interpretation of rules and the technique of officiating. Officiating in local schools and recreation centers is required.
- 327A-327B. Principles of Teaching Dance (Women). (2-2) Yr.** ———  
Prerequisite or concurrent: course 31, or course 35 or 154.
- 330. Physical Education in the Elementary School. (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 of 9 A.M. and 3 P.M.
- 354. Teaching Fundamentals (Men). (3) I.** Mr. Handy  
Prerequisite: senior standing.  
A study of the principles involved in the teaching of physical education, together with functional application through observations and laboratory experiences.  
Lectures, two hours; laboratory, three hours. (Laboratory assignment to be made by the instructor.)
- 355A. Technique of Teaching Activities. (2) I.** Mr. Montgomery  
Prerequisite: junior standing, course 8.  
A critical analysis of the methods of teaching and coaching, including strategy, selection of players, rules, and team play.  
Basketball, speedball.
- 355B. Technique of Teaching Activities. (2) II.** Mr. Frampton  
Prerequisite: junior standing, course 6.  
A critical analysis of the methods of teaching and coaching, including strategy, selection of players, rules, and team play.  
Baseball, softball, volleyball.

**356A. Technique of Teaching Activities. (2) II.**

**Mr. Duncan**

Prerequisite: junior standing, course 7.

A critical analysis of the methods of teaching and coaching, including strategy, selection of players, rules, and team play.

Football, touch football, and soccer.

**356B. Technique of Teaching Activities. (2) II.**

Prerequisite: junior standing, course 9. **Mr. Stichter, Mr. Hollingsworth**

A critical analysis of the methods of teaching and coaching, including strategy, selection of players, rules, and team play.

Track and field, tumbling, and apparatus.

## PHYSICS

JOSEPH W. ELLIS, Ph.D., Professor of Physics (Chairman of the Department).

\* JOSEPH KAPLAN, Ph.D., Professor of Physics.

<sup>1</sup> E. LEE KINSEY, Ph.D., Professor of Physics.

\* VERN O. KNUDSEN, Ph.D., Professor of Physics.

\_\_\_\_\_, 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.

ROBERT W. LEONARD, Ph.D., Associate Professor of Physics.

KENNETH R. MACKENZIE, Ph.D., Associate Professor of Physics.

J. REGINALD RICHARDSON, Ph.D., Associate Professor of Physics.

\* ARTHUR H. WARNER, Ph.D., Associate Professor of Physics.

NORMAN A. WATSON, Ph.D., Associate Professor of Physics.

ISADORE RUDNICK, Ph.D., Assistant Professor of Physics.

DAVID S. SAXON, Ph.D., Assistant Professor of Physics.

BYRON T. WRIGHT, Ph.D., Assistant Professor of Physics.

SHELDON J. BROWN, A.B., Instructor in Physics.

HAROLD K. TICHO, M.S., Lecturer in Physics.

\* JÜRGEN HOLMBOM, M.Sc., Professor of Meteorology.

LOUIS B. SLICHTER, Ph.D., Professor of Geophysics.

*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 69.

*Preparation for the Major in Physics.*—Required: Physics 1A, 1B, 1C, 1D, or, with the consent of a department adviser, Physics 2A, 1C, 1D or Physics 2A, 2B; Chemistry 1A, 1B; Mathematics C, 5A, 5B, 6A; or C, 1-3A, 3B, 4A; or their equivalents.

*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 116A, 112 or 119, 114A, 121, 113 or 124. An average grade of C or higher must be maintained in the above courses. Strongly recommended: Mathematics 119A and 122A-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.*—Required: Physics 1A, 1B, 1C, 1D, or with the consent of a department adviser, Physics 2A, 1C, 1D, or Physics 2A, 2B; Chemistry 1A, 1B; Mathematics C, 5A, 5B, 6A; or C, 1-3A, 3B, 4A; or their equivalents. Mechanical Drawing. The last named course may be taken in high school, University Extension, the College of Engineering, or elsewhere.

<sup>1</sup> In residence fall semester only, 1948-1949.

<sup>2</sup> In residence spring semester only, 1948-1949.

\* Absent on leave, 1948-1949.



**The Major in Applied Physics.**—Required: Mathematics 110A–110B and one of the following groups of courses prescribed to give a specialization in some particular field of physics or chemistry: (a) Physics 105, 107, 107C, 108B, 108C, 110, 114A, 116A, 116B, 116C, 116D, 119, 121, 124 or 112, designed for specialization in electronics; (b) Physics 105, 107, 107C, 108A, 108B, 108C, 109, 112, 113, 113C, 114A, 116A, 116C, 121, designed for specialization in optics and spectroscopy; (c) Physics 105, 107, 107C, 108B, 108C, 114A, 114B, 114C, 116A, 116B, 116C, 116D, 119, 121, designed for specialization in acoustics and electronics; (d) Physics 105, 107, 107C, 108B, 108C, 112, 113, 113C, 116A, 121, 124; Chemistry 8, 110A, 110B, 111B, designed for specialization in chemistry; (e) Physics 105, 107, 107C, 108B, 108C, 113, 113C, 114A, 116A, 116B, 116C, 116D, 119, 121, 124, designed for specialization in modern physics.

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 a degree of Bachelor of Science in the College of Letters and Science.

#### LOWER DIVISION COURSES

Physics 1A, 1B, 1C, and 1D constitute a four-course 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, 1C and 1D; 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, 1C, 1D 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.

Physics 2A and 2B constitute a year sequence in general physics which is required of students specializing in the following fields: bacteriology, geology, medical technology, predentistry, premedicine, and preoptometry. Students in other departments may elect either or both of these courses. However, 2A or 1A is prerequisite to 2B.

Physics 10 is a one-semester, nonlaboratory course which surveys the whole field of general elementary physics. It is intended for the liberal arts student.

Certain combinations of lower division courses involve limitation of total credit as follows: 2A and 1A or 1B, 5 units; 2A and 1A and 1B, 6 units; 2B and 1C or 1D, 6 units; 2B and 1C and 1D, 7 units. Six units are allowed for 10 and 1A or 1B or 1C or 1D. Seven units are allowed for 10 and 2A or 2B. 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. Saxon, ———

Lecture and demonstration, three hours; laboratory, two hours.

Prerequisite: high school physics or chemistry; Mathematics 5A, or 1–3A with Mathematics 3B taken concurrently with Physics 1A.

**1B. General Physics: Mechanics of Fluids, and Heat.** (3) I, II. Mr. Dodd

Lecture and demonstration, three hours; laboratory, two hours. Prerequisite: course 1A; Mathematics 5B, or Mathematics 4A taken previously or concurrently.

**1C. General Physics: Electricity and Magnetism. (3) I, II.**

Mr. Richardson, \_\_\_\_\_

Lecture and demonstration, three hours; laboratory, two hours. Prerequisite: course 1A or 2A; Mathematics 5B, or 4A taken concurrently.

**1D. General Physics: Light and Sound. (3) I, II.** Mr. Saxon, Mr. Brown

Lecture and demonstration, three hours; laboratory, two hours. Prerequisite: course 1A or 2A; Mathematics 5B, or 4A taken concurrently.

**2A. General Physics: Mechanics and Heat. (4) I, II.**

Mr. MacKenzie, Mr. Rudnick

Lectures and demonstrations, four hours; laboratory, two hours. Prerequisite: three years of high school mathematics, or two years of high school mathematics and one 3-unit college course in algebra or trigonometry.

**2B. General Physics: Electricity, Magnetism, Light, and Sound. (4) I, II.**

Mr. MacKenzie, Mr. Ticho

Lectures and demonstrations, four hours; laboratory, two hours. Prerequisite: course 2A or 1A.

**10. General Physics. (3) I, II.**

Mr. Baños, Mr. Saxon

Prerequisite: high school algebra and plane geometry.

An introductory survey course in classical and modern physics designed primarily for liberal arts students.

Students enrolled in this course who desire 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. Wright 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. 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, 1C, 1D, or 2A, 1C, 1D, or 2A-2B; Mathematics 5A, 5B, 6A; or 1-3A, 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, II.**

Mr. Wright

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, II.**

Mr. Wright

Laboratory to accompany 107.

- 108A. Geometrical Optics. (3) II.** Mr. Dodd  
Lecture, two hours; laboratory, three hours.  
Prerequisite: course 1D or 2B, or equivalent.
- 108B. Physical Optics. (3) I.** Mr. Rudnick  
Wave motion, interference, diffraction, dispersion, polarization, and crystal optics.
- 108C. Physical Optics Laboratory. (1) I.** Mr. Ticho  
Laboratory to accompany 108B.
- 109. Modern Optical Instruments. (3) I.** Mr. Dodd  
Lecture, two hours; laboratory, three hours.  
Prerequisite: course 108A.
- 110. Electricity and Magnetism. (3) II.** Mr. MacKenzie  
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. Leonard  
The thermal properties of matter with an introduction to thermodynamics.
- 113. Introduction to Spectroscopy and Quantum Theory. (3) II.** Mr. Ellis  
Atomic spectra and atomic structure; black body radiation; old and new quantum theories.
- 113C. Spectroscopy Laboratory. (1) II.** \_\_\_\_\_  
Prerequisite or concurrent: course 113 or Astronomy 117A-117B.
- 114A. Mechanics of Wave Motion and Sound. (3) I, II.**  
Prerequisite: course 105. Mr. Watson, Mr. Delsasso  
Vibration of particles and elastic bodies; sound sources; propagation in elastic media.
- 114B. Mechanics of Wave Motion and Sound. (3) II.** 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) I.** Mr. Delsasso  
Prerequisite: courses 107, 107C, and 114B, or consent of the instructor.
- 116A. Electronics. (3) II.** Mr. Leonard  
Prerequisite: course 107 or the equivalent.  
The properties of electronics: thermionic and photoelectric emission; conduction of electricity in gases; vacuum tubes, gas tubes, and associated circuits.
- 116B. Electronics. (3) I.** Mr. Leonard  
Prerequisite: course 116A or the equivalent.  
Wave filters, lines, and wave guides; ultrahigh frequency generators and measuring equipment.
- 116C. Electronics Laboratory. (2) II.** Mr. Leonard  
Laboratory to accompany 116A.

116D. **Electronics Laboratory.** (2) I. Mr. Brown  
Laboratory to accompany 116B.

117. **Hydrodynamics.** (3) II. Mr. Holmboe

119. **Kinetic Theory.** (3) II. Mr. Wright  
The classical kinetic theory of gases, with applications.

121. **Atomic Physics.** (3) II. Mr. Bafios

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  
Detecting equipment; high-energy accelerators; alpha rays; beta rays; gamma rays; nuclear disintegration; cosmic radiation; nuclear fission.

199. **Special Problems in Physics.** (1-3) I, II. Mr. Ellis in charge

#### GRADUATE COURSES

\*208. **Classical Optics.** (3) I. Mr. Saxon

Propagation of light waves in isotropic and anisotropic media, interference, diffraction, dispersion, scattering, and polarization on the basis of the electromagnetic theory of light. Recommended: course 210A or its equivalent.

\*210A-\*210B. **Electromagnetic Theory.** (3-3) Yr. Mr. Bafios

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. Delsasso

215. **Statistical Mechanics.** (3) II. Mr. Kaplan

217. **Hydrodynamics.** (3) II. Mr. Holmboe  
Not open for credit to students who have credit for Meteorology 217.

220A. **Theoretical Mechanics.** (3) I. Mr. Kinsey

220B. **Theoretical Mechanics.** (3) II. Mr. Watson

220C. **Quantum Mechanics.** (3) I, II. Mr. Kinsey, Mr. Saxon

220D. **Quantum Mechanics.** (3) II. \_\_\_\_\_

\* Not to be given, 1948-1949.

\* 210A will be given both semesters of 1948-1949. 210B will not be given in 1948-1949 but will be offered in the first semester of 1949-1950. Thereafter 210A will be given each spring semester and 210B each fall semester.

**224A. Nuclear Physics. (3) I.**

Mr. Richardson

A summary of the present knowledge and descriptive theory of nuclear forces, nuclear reactions, and radioactivity; with emphasis on a critical evaluation of the experimental evidence, and a discussion of possible future experimental lines of attack on problems in nuclear physics.

**224B. Nuclear Physics. (3) II.**

Mr. Saxon

An advanced course in the theory of nuclear forces and nuclear radiation with particular emphasis on the mesotron theory of nuclear forces and the general application of quantum mechanics to the theory of nuclei.

**\*231. Methods of Theoretical Physics. (3) II.**

Mr. Baños

An advanced course in which the general mathematical methods employed in the solution of boundary value problems arising in all chapters of theoretical physics are systematically developed and coordinated. A detailed discussion is given of the use of Green's functions, characteristic functions, variational methods, conformal mapping, and of integral equations the solution of which is based on the theory of the Fourier and Laplace transforms.

**261. Seminar in Quantum Mechanics. (2) I.****264. Seminar in Advanced Acoustics. (3) II.**

Mr. Knudsen

**266A.-266B. Seminar in Propagation of Waves in Fluids. (1-3; 1-3) Yr.**

Mr. Leonard, Mr. Rudnick

**269. Seminar in Nuclear Physics. (3) I.**

Mr. MacKenzie

1948-1949: Neutron physics.

**281. Experimental Techniques in Modern Physics. (2) II.** Mr. Richardson

Essentially a laboratory course with some lectures on the theory of the techniques used. An effort is made to develop a critical research attitude on the part of the student and considerable freedom is allowed in the choice of problems to be attacked. High-vacuum technique, atomic magnetic resonance, magnetic spectograph, electron diffraction, cloud chamber, electrical counting of particles, conduction of electricity through gases, etc.

**290A.-290B. Research. (1-6; 1-6) Yr.**

Mr. Kinsey in charge

**RELATED COURSES AND CURRICULUM****GEOPHYSICS**

See page 76 for an interdepartmental curriculum in geophysics involving physics and geology. For undergraduate courses, see Department of Geology, page 241.

**250. Seminar in Geophysics. (3) I.**

Mr. Slichter

Fundamental problems in physics of the solid earth. The content will vary from year to year.

\* Not to be given, 1948-1949.

**PLANT PATHOLOGY**

A Division of the Department of Agriculture

**KENNETH F. BAKER, Ph.D.**, Associate Professor of Plant Pathology.

**JOHN G. BALD, 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.

**UPPER DIVISION COURSES****120. Plant Diseases. (4) I.**

**Mr. Baker**

Lectures, two hours; laboratory, six hours. Prerequisite: Botany 1, 2, or the equivalent, and Bacteriology 1.

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 1, 2, or the equivalent, and Bacteriology 1; course 120 is recommended.

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.**

Prerequisite: senior standing and consent of the instructor. **The Staff**

## POLITICAL SCIENCE

CLARENCE A. DYKSTRA, L.H.D., LL.D., Litt.D., Professor of Political Science.  
 RUSSELL H. FITZGIBBON, Ph.D., Professor of Political Science (Chairman of the Department).

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, Emeritus.

\* H. ARTHUR STEINER, Ph.D., Professor of Political Science.

FRANK M. STEWART, Ph.D., Professor of Political Science.

CHARLES H. TITUS, Ph.D., Professor of Political Science.

WINSTON W. CROUCH, Ph.D., Associate Professor of Political Science and Director of the Bureau of Governmental Research.

DEAN E. MOHENY, Ph.D., Associate Professor of Political Science.

———, Associate Professor of Political Science.

THOMAS P. JENKIN, Ph.D., Assistant Professor of Political Science.

ROBERT G. NEUMANN, Ph.D., Assistant Professor of Political Science.

CHARLES R. NIXON, Ph.D., Assistant Professor of Political Science.

FOSTER H. SHERWOOD, Ph.D., Assistant Professor of Political Science.

LINCOLN SMITH, Ph.D., Assistant Professor of Political Science.

———, Assistant Professor of Political Science.

———, Assistant Professor of Political Science.

———, Instructor in Political Science.

———, 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 69.

*Preparation for the Major.*—Courses 1 and 2 (or 3A-3B), or 103, or the equivalent, and 3 units selected from the following: Political Science 10, 34, Economics 1A-1B, Geography 1A-1B, History 4A-4B, 5A-5B, 7A-7B, 8A-8B, Anthropology 1A-1B, or Philosophy 2A-2B.

*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 in political science must be so distributed that at least one course is taken in each of four of the groups into which the upper division courses of the department are divided: Group I (Courses 110-118), Group II (Courses 120-138), Group III (Courses 141-148), Group IV (Courses 150-159), Group V (Courses 166-168, 117, 133, 187) and Group VI (Courses 171-187). A copy of the detailed 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 87 and 76 of this catalogue.

\* Absent on leave, 1948-1949.

## LOWER DIVISION COURSES

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

Mr. Jenkin, Mr. McHenry, Mr. Neumann, Mr. Nixon, Mr. Sherwood, Mr. Smith

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 in part 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.

**2. Introduction to Government. (3) I, II.**

Mr. Crouch, Mr. Jenkin, Mr. McHenry, Mr. Neumann, Mr. Nixon, 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.

**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.

## UPPER DIVISION COURSES

Prerequisite for all upper division courses: course 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, II.**

Prerequisite: any one of the lower division courses, or its equivalent, and consent 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, II.**

Mr. Jenkin, Mr. Nixon

An exposition and critical analysis of the ideas of the major political philosophers and schools from Plato to the eighteenth century.

**112. Modern Political Theory. (3) I, II.**

Mr. Jenkin, Mr. Nixon

An exposition and critical analysis of the ideas of the major political philosophers from the eighteenth century to the present.

**113. American Political Thought. (3) I, II.**

Mr. Jenkin, Mr. Nixon

A survey of the development of American ideas concerning political authority from Cotton and Williams to the present.

**117. Jurisprudence. (3) II.**

Mr. Sherwood

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) I.**

Mr. Jenkin

Prerequisite: course 110, 112, or 113.

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) I, II.**

Mr. Graham, Mr. Neumann

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, II.**

Mr. Graham, Mr. Neumann

A general survey of the institutions and agencies of international government, including the United Nations, 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, Mr. Neumann

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 survey of contemporary problems of special international interest.

**\*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, and of the policies of the powers in southeast Asia.

\* Not to be given, 1948-1949.

*Group III.—Politics***141. Politics. (3) I, II.**

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, II.**

Mr. Titus, Mr. Nixon

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) I, II.**

Mr. Smith

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) I.**

Mr. McHenry

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. Neumann

An intensive study of the political and constitutional organization of Germany and Danubian Europe, with special attention to contemporary political issues, parties, elections, and foreign relations.

**155. The Governments of Eastern Europe. (3) II.**

Mr. Graham

An intensive study of the political and constitutional organization of the Soviet Union and its component parts, with special attention to contemporary political issues, parties, elections, and foreign relations.

**\*159. Chinese Government and Politics. (3) I.**

Mr. Steiner

Organization and structure of the Chinese government; Chinese political parties, particularly the Kuomintang and the Chinese Communists; political problems of contemporary China.

*Group V.—Public Law***166. Administrative Law. (3) I.**

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.

**167A-167B. Constitutional Law. (3-3) Beginning either semester.**

Mr. Grant, ———

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.

**168. Government and Business. (3) I.**

Governmental activities in the preservation and regulation of competition, with special emphasis upon problems of administration and intergovernmental cooperation; regulation of trades and professions.

*Group VI.—Public Administration and Local Government***171. State and Local Government. (3) I, II.**

Mr. Crouch, Mr. Smith, Mr. Stewart

Development of state constitutions; the political, administrative, and judicial systems of state and county government; and relations between the state and local rural government, with special reference to California. May not be taken by those who have credit for Political Science 34.

**172. Municipal Government. (3) I, II.**

Mr. Crouch, Mr. Stewart

A study of the modern municipality in the United States; legal aspects of city government; local election problems; types of municipal government; problems of metropolitan areas; relationship of the cities to other units; problems bearing on city government today.

**181. Principles of Public Administration. (3) I, II.**

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) I.**

Mr. Smith, Mr. Stewart

Problems of policy, organization and procedure in selected fields of public administration, with emphasis on administrative functions. The problems selected may vary each semester.

**184. Municipal Administration. (3) I, II.**

Mr. Stewart, Mr. Crouch

A study of governmental functions performed at the municipal level; development of modern concepts and methods of administration in cities; management and control of administrative organizations.

\* Not to be given, 1948-1949.

- 185. Public Personnel Administration. (3) I.** Mr. Crouch  
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.
- 186. American National Administration. (3) II.** Mr. Crouch  
Functions, organization, practices, and relationships of the principal administrative agencies of the Federal government.
- 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*.

*Ungrouped*

- 199A-199B. Special Problems in Political Science. (1-3; 1-3) 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    |
| Section 9. Problems of the British Empire.                    | Mr. McHenry    |
| Section 10. Problems in Public Administration.                | Mr. Crouch     |

## GRADUATE SEMINARS

- 250A-250B. Seminar in Latin-American Relations. (2-2) Yr.** Mr. Fitzgibbon
- 252A-252B. Seminar in Public Law. (2-2) Yr.** Mr. Grant
- 253A-253B. Seminar in International Relations. (2-2) Yr.** Mr. Graham, 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. Neumann
- 257A-257B. Seminar in Political Theory. (2-2) Yr.** Mr. Jenkin
- 258A-258B. Seminar in Administrative Law. (2-2) Yr.** Mr. Sherwood
- 259A-259B. Seminar in Political and Electoral Problems. (2-2) Yr.** Mr. Titus
- 262A-262B. Seminar in Municipal Government. (2-2) Yr.** Mr. Crouch

\* Not to be given, 1948-1949.

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. McHenry, ———

This course counts toward satisfaction of the "Requirement of American History and Institutions." (See page 36.) It may not be applied toward the political science major, and is not open to students who have credit for Political Science 1 or Political Science 3A.

The fundamental nature of the American constitutional system and of the ideals upon which it is based.

**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 coöperating with public officials in solving their administrative problems.

Further information may be obtained by consulting the Director, Mr. Winston W. Crouch, Room 42, Library.

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**PORTUGUESE**

For courses in Portuguese, see under Department of Spanish and Latin.

## PSYCHOLOGY

- <sup>1</sup>ROY M. DORCUS, Ph.D., Professor of Psychology.  
 FRANKLIN FEARING, Ph.D., Professor of Psychology.  
 MILTON E. HAHN, Ph.D., Professor of Psychology  
<sup>\*</sup>ELLEN B. SULLIVAN, Ph.D., Professor of Psychology.  
 KNIGHT DUNLAP, Ph.D., Professor of Psychology, Emeritus.  
 GRACE M. FERNALD, Ph.D., Professor of Psychology, Emeritus.  
 KATE GORDON MOORE, Ph.D., Professor of Psychology, Emeritus.  
 S. CAROLYN FISHER, Ph.D., Associate Professor of Psychology.  
 JOSEPH A. GENDERELLI, Ph.D., Associate Professor of Psychology.  
 HOWARD C. GILHOUSEN, Ph.D., Associate Professor of Psychology.  
 JESSIE L. RHULMAN, Ed.D., Associate Professor of Psychology.  
 JOHN P. SEWARD, Ph.D., Associate Professor of Psychology.  
 MARION A. WENGER, Ph.D., Associate Professor of Psychology (Chairman of the Department).  
 BRUNO KLOFFER, Ph.D., Acting Associate Professor of Psychology.  
 RICHARD CENTERS, Ph.D., Assistant Professor of Psychology.  
 GEORGE F. J. LEHNER, Ph.D., Assistant Professor of Psychology.  
 JAMES F. T. BUGENTAL, Ph.D., Instructor in Psychology.  
 JOHN S. HELMICK, Ph.D., Instructor in Psychology.  
 GEORGE E. MOUNT, Ph.D., Instructor in Psychology.

- <sup>\*</sup>LAURENCE A. PETRAN, Mus.M., Ph.D., Associate Professor of Music and University Organist.  
 HARRY W. CASE, Ph.D., Associate Professor of Engineering and Associate Professor of Psychology.  
 PERINA PIZIALI PANUNZIO, M.A., Associate in the Clinic School.

*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 69.

*Preparation for the Major.*—Required of all majors: Psychology 21-22. (Under certain conditions Psychology 101 may be substituted for Course 21 and 108 for Course 22. If Courses 101 and 108 are offered in preparation for the major they will not be counted toward upper division credit for the major.)

Recommended: Courses from the following areas according to the student's interests: (a) Natural science such as physics, chemistry, zoölogy, physiology; (b) Social science such as anthropology, sociology, economics, political science, history; (c) Mathematics, statistics; (d) Humanities such as philosophy, languages, literature, art, music, drama.

Recommended for students who expect to do graduate study in psychology, at least 18 units, distributed among the following: (a) 6 units of cultural or

<sup>1</sup> In residence first semester only, 1948-1949.

<sup>2</sup> In residence second semester only, 1948-1949.

<sup>\*</sup> Absent on leave, 1948-1949.

social anthropology and/or sociology; (b) not less than 5 units of college chemistry; (c) one year of college physics; (d) college algebra and analytic geometry or mathematics for the social and life sciences; (e) not less than one year of work chosen from the following: elementary zoölogy, general zoölogy, elementary physiology, elementary zoölogy and physiology, applied human physiology, general physiological biology, endocrinology, genetics. These students should also plan to take such courses as will give them the reading knowledge of two foreign languages required for the Ph.D. degree.

*The Major.*—Course 105A or 106A, and 21 additional units in upper division psychology.

*Requirements for the M.A. degree.*—The department follows Plan II (see page 134). 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.

#### 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. Lehner 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

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.** Mr. Gengerelli  
 Prerequisite: course 23 may be accepted in place of course 22.  
 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) II.** Miss Sullivan  
 Prerequisite: course 105A.  
 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. Mount  
 Lectures and demonstration, two hours; laboratory, two hours; assigned readings.  
 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 of psychological data.
- 108. Physiological Psychology. (3) I.** Mr. Wenger  
 If not to be counted toward the major in psychology, this course may be substituted for course 22 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. Helmick  
 Adolescence, maturation, habit formation, formal and informal training.
- 112. Child Psychology. (3) I.** Mr. Wenger  
 The psychology of the infant and child, with special reference to mental development.
- 113. Psychology of Adolescence. (2) II.** Mr. Wenger  
 Prerequisite: course 112.  
 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.
- 120. History of Psychology. (3) I.** Miss Fisher  
 The development and psychological theories and research to the end of the nineteenth century.
- 126. Contemporary Psychology. (2) II.** Miss Fisher  
 The variant tendencies in current psychology, including critical examination of the more important so-called "schools" of psychology.
- 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.** Mr. Mount  
Imagination, memory, anticipatory and constructive thinking.
- 137A-137B. Human Learning. (2-2) Yr.** Mr. Seward  
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 particular emphasis on the critical evaluation of affective theory. This is not a course in personality and emotional adjustment.
- 142. Human Communication. (2) I.** Mr. Fearing  
Prerequisite: courses 145A-145B or 147; or 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.
- 143. Propaganda and Public Opinion. (2) II.** Mr. Fearing  
Prerequisite: courses 145A-145B or 147; or 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. Animal Psychology. (3) I.** Mr. Gilhousen  
General survey of the behavior of the higher forms of animal life.
- 150B. Animal Psychology. (3) II.** Mr. Gilhousen  
A more intensive study of facts and theories concerning motivation, learning and problem solving. Lectures and laboratory demonstration.
- \*163. Clinical Measurement Techniques. (3) II.** Miss Sullivan  
Lecture, one hour; laboratory, four hours.  
Prerequisite: courses 105A-105B, 166A and 168.  
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.** Mr. Lehner  
Lectures and demonstration.  
A study of clinical problems, including discussion of physical and mental abnormalities and deficiencies.

\* Not to be given, 1948-1949.

**166B. Clinical Psychology. (2) II.****Mr. Lehner**

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) I.****Mr. Bugental**

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.

**169. Psychology of the Physically Handicapped. (2) II.****Miss Sullivan**

A study of the basic facts, principles and methods of understanding the personality and behavior of individuals who possess physical handicaps, with particular reference to methods of reëducation and adjustment; psychological disabilities resulting from sensory and motor disorders, illness and disease, and injury will be discussed.

**\*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) II.****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.

**177. Psychology and Art. (3) I.****Mr. Centers**

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.**

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 salesmen.

**185. Personnel Psychology. (2) I.****Mr. Case**

The methods of selection, classification, and training of employees.

**\*186. Occupational Counseling and Job Classification. (2) II.****Mr. Dorcus**

Prerequisite: courses 105A and 185.

Principles of occupational counseling; nature and sources of occupational information; methods of job analysis and creation of job families.

**187. Industrial Psychology. (2) II.****Mr. Case**

Description of factors such as illumination, noise, temperature as they affect production.

\* Not to be given, 1948-1949.

**188. Psychological Bases of Counseling. (2) I.**

Mr. Hahn

Prerequisite: open to senior and graduate students who have preparation in educational psychology, statistics, tests and measurements, mental hygiene, or abnormal psychology.

The logical and experimental approaches to human aptitudes, abilities, and interests as used in counseling. Mental organization, physiological and psychological traits, individual and group educational-vocational-personality characteristics, derivation of interest and ability patterns, pattern analysis and its counseling applications.

**199. Special Problems in Psychology. (3) I, II.**

Mr. Seward

Prerequisite: courses 105A, 106A, and 6 other units in upper division psychology. Specific permission to enroll is necessary.

Training in the fundamentals of psychological research: formulating problems, deriving hypotheses, designing experiments, interpreting results. Published experiments will be critically analyzed and individual projects planned and carried out. Primarily for students who expect to do graduate work in psychology.

GRADUATE COURSES

**211A-211B. Comparative Psychology. (2-2) Yr.**

Mr. Gilhousen

An advanced treatment of systems and theories based on experimental literature in the animal and human fields.

**214. Problems of Learning in Psychology. (2) I.**

Mr. Seward

A consideration of the major theories of learning and related research with particular emphasis on human problems.

**\*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) I.**

Mr. Gengerelli

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.**

Mr. Lehner

The prevention of psychological disorders 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.

**219A-219B. Clinical Measurement Techniques. (2-2) Yr.**

Mr. Klopfer

Advanced study of tests in clinical diagnostic study, including the special application of individual and group tests of intelligence, personality, diagnosis and projective techniques. Emphasis will be placed upon application in the clinical situation.

**220. Clinical Neurology. (2) II.**

Presentation of selected neurological cases. This course is designed to integrate the student's knowledge of mental and motor dysfunction with the neurological bases of such dysfunction.

\* Not to be given, 1948-1949.

**221. Experimental Psychology. (3) II.**

Mr. Mount

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.

**222. Survey of Personality Development in Behavior Disorders. (2) II.**

Mr. Lehner

A survey of the theoretical views of Freud, Jung, Adler, Rank, and various modern writers including Allport, Lewin, Murray, and Murphy.

**223. Psychological Bases of Counseling. (2) II.**

Mr. Hahn

Prerequisite: course 188; recommendation of the adviser and consent of the instructor.

Application of materials in course 188 to individual case studies. Case conference method.

**\*252A-252B. Seminar in Mental Measurements. (3-3) Yr.** Miss Sullivan**253A-253B. Seminar in Physiological Psychology. (3-3) Yr.** Mr. Wenger**\*255A-255B. Seminar in Social Psychology. (3-3) Yr.** Mr. Fearing**257. Seminar in Psychotherapeutic Techniques. (3) I.** Mr. Dorcus**\*258A-258B. Seminar in Abnormal Psychology. (3-3) Yr.** Mr. Dorcus**277A-277B. Field Work in Personnel Psychology. (3-6; 3-6) Yr.**

Mr. Hahn and Staff

Prerequisite: regular graduate standing and upper division or graduate work in tests and measurements, statistics, mental hygiene or abnormal psychology, and counseling methods; recommendation of the adviser and consent of the instructor.

Internship in the Student Counseling Center, which includes psychometrics, observation of counseling, preparation of case materials for counselors, record keeping, test scoring, case discussions, and participation in other service activities. Minimum of 10 hours per week, including 1-2 hours of staff meetings and conferences.

**278A-278B. Research in Psychology. (3-6; 3-6) Yr.**

Mr. Gengerelli, Mr. Seward

**279A-279B. Field Work in Clinical Psychology. (3-6; 3-6) Yr.**

Mr. Klopfer, Mr. Lehner, Miss Sullivan

Practical work in hospitals and clinics in clinical diagnostic testing and psychotherapy. Students in the Veterans Administration Clinical Training Program are required to register for this course each semester.

\* 252A to be given second semester; 252B not to be given, 1948-1949.

\* Not to be given, 1948-1949.

## PUBLIC HEALTH

EDWARD S. ROGERS, B.A., M.D., M.P.H., Dean, School of Public Health (Acting Chairman of the Department).

A. HARRY BLISS, B.S., M.S., Lecturer in Public Health and Executive Officer.

JOHN BEESTON, M.B., D.P.H., Visiting Assistant Professor of Public Health.  
 ———, Lecturer in Public Health.

———, Associate Professor of Public Health.

WALTER S. MANGOLD, B.S., Associate Professor of Public Health (Berkeley).

JOHN M. CHAPMAN, A.B., M.D., M.P.H., Lecturer in Public Health.

HUGH ERNST DIERKER, JR., B.S., M.D., M.P.H., Lecturer in Public Health.

PAUL LEVAN, A.B., M.D., Lecturer in Public Health.

CHARLES SENN, B.S., in C.E., Lecturer in Public Health.

THOMAS HUNTER STERNBERG, B.S., M.D., Lecturer in Public Health.

*Letters and Science List.*—Courses 5A-5B, 105, 106, 110, 125, 145, 147A, 162, 186 are included in the Letters and Science List of Courses. For regulations governing this list, see page 69.

## School of Public Health

*Preparation for the Major.*—(See Prepublic Health Curriculum, College of Applied Arts, page 133.)

*The Major.*—Students interested in pursuing work in public health leading toward the degree of Bachelor of Science in the School of Public Health should consult the chairman of the department. Options are available in the respective fields of sanitation and public health statistics. The requirements of the School of Public Health for the degree of Bachelor of Science include 120 units, at least the last 24 of which must have been completed as a student in the School of Public Health.

*Premedical Students.*—Premedical students who have met all of the requirements for the first three years in the College of Letters and Science may be admitted to the School of Public Health as candidates for the degree of Bachelor of Science in public health upon the completion of Bacteriology 1. It is recommended that Public Health 5A-5B and 105 be completed at the end of the third year.

*Sanitation with Engineering Emphasis.*—Students majoring in public health (sanitation option) who plan to obtain the degree of Master of Science in Sanitary Engineering are advised that elective units should be chosen from engineering subjects after consultation with the College of Engineering.

*Graduate Work in Public Health.*—See the ANNOUNCEMENT OF THE SCHOOL OF PUBLIC HEALTH, and page 143 of this bulletin.

## LOWER DIVISION COURSES

**5A-5B. Elementary Public Health. (3-3) Yr.**

Mr. Beeston

Prerequisite: course 5A is prerequisite to 5B.

A survey of the field of public health, including a consideration of the evolution of disease prevention and control; the social, medical, and economic aspects of sickness, disability, and death; with special emphasis on administrative programs of federal, state, and local health agencies.

- 15. Public Health Laboratory Procedures. (2) I.** Mr. Bliss, ———  
 Lecture, one hour; laboratory, three hours.  
 Prerequisite: consent of the instructor.  
 A study of public health laboratory procedures, methodology, significance, interpretation, and reliability. A descriptive course with laboratory practice and demonstrations, designed to develop an understanding of the procedures and their public health significance rather than proficiency in laboratory methods.
- 16. Elementary Public Health Statistics for Sanitarians. (2) I.** ———  
 Lecture, one hour; laboratory, three hours.  
 Prerequisite: consent of the instructor.  
 Methods of collecting, tabulating, and graphing, with special emphasis on data relating to diseases and their distribution; and elementary methods of analysis.
- 49. Field Training Course. (Noncredit) I.** Mr. Mangold, Mr. Bliss  
 Field training course in health departments and/or military establishments for learning administrative methods and practical procedures in environmental sanitation.

## UPPER DIVISION COURSES

- 105. Public Health Administration. (3) I, II.** Mr. Chapman  
 Prerequisite: consent of the instructor.  
 Lectures, reading, and individual reports in public health administration and procedures.
- 106. Medical Sociology. (2) I.** Mr. Beeston  
 A medical survey of certain diseases which, by their very nature and effect, produce social problems.
- 110. Environmental Sanitation. (3) I.** Mr. Senn  
 Fundamentals of housing, heating, ventilation, lighting, water supply, waste disposal, insect and rodent control, and control of milk and other food supplies.
- 113A. Principles and Practices in Sanitary Inspection. (3) I.** Mr. Bliss  
 Prerequisite: course 110 or consent of the instructor.  
 Lectures, two hours; laboratory or field trips, three hours.  
 Objective and special techniques in general sanitation covering communicable disease control, water and sewage, housing, ventilation, lighting and vector control.
- 113B. Principles and Practices in Sanitary Inspection. (3) II.** Mr. Bliss  
 Prerequisite: course 110 or consent of the instructor.  
 Lectures, 2 hours; laboratory or field trips, three hours.  
 Objectives and special techniques in food sanitation covering milk, meat, markets, restaurants, and processing plants.
- 125. Child Hygiene. (3) II.** Mr. Beeston  
 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 Disease. (3) I, II.** Mr. Beeston  
 The epidemiology and community control of communicable diseases, including tuberculosis and the venereal infections.

**147A. Principles of Epidemiology. (2) I.**

Mr. Beeston

Prerequisite: Bacteriology 103 and Public Health 162, or their equivalents, or consent of the instructor.

Principles of epidemiology and the study of the infection chains of certain type diseases.

**153A. Applied Biology of Sanitation. (2) II.**

Mr. Bliss, ———

Prerequisite: Bacteriology 103. Primarily for students in the public health sanitarian curriculum, but open to others by permission of the instructor.

Principles of life sciences relevant to control of environmental sanitation, and techniques of their application.

**\*153B. Applied Biology of Sanitation. (2).**

Laboratory, six hours.

Prerequisite: Bacteriology 103. Primarily for students in the public health sanitarian curriculum, but open to others by permission of the instructor.

Principles of life sciences relevant to control of environmental sanitation, and techniques of their application.

**160A. Biometry. (3) I.**

Lectures, two hours; laboratory, 3 hours.

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.

**160B. Biometry. (3) II.**

Lecture, two hours; laboratory, three hours.

Prerequisite: course 160A or consent of the instructor.

Bivariate distributions, elementary methods of sampling, introduction to analysis of variance, special methods applicable to biological data.

**161B. Applied Biostatistics. (4) II.**

Lecture, two hours; laboratory, four hours.

Open only to students who have completed Public Health 5A-5B, or who have the consent of the instructor.

Elements of vital statistics and demography. Includes consideration of problems of registration, enumeration, morbidity, and mortality statistics.

**161B. Applied Biostatistics. (4) II.**

Lecture, two hours; laboratory, six hours.

Prerequisite: course 161A.

Extension of methods introduced in 161A to more advanced problems. Methods of establishing record systems for health activities including case registers for chronic diseases; evaluation and analysis.

**162. Public Health Statistics. (3) II.**

Lecture, two hours; laboratory, three hours.

Prerequisite: course 145 or consent of the instructor; upper division standing.

An applied course in public health statistics designed primarily for students not majoring in biostatistics.

\* Not to be given, 1948-1949.

**170. Introduction to Occupational Health and Industrial Hygiene. (2) II.****Mr. Dierker****The scope, organization, and operation of industrial health services.****186. Control of Venereal Diseases. (2) II.****Mr. Sternberg****Prerequisite: consent of the instructor.****A consideration of the basic medical data; epidemiology; the prevention and administrative control of the venereal diseases; evaluation of methods used.****198. Directed Group Study. (1-5) I, II.****Mr. Bliss in charge****199. Special Study for Advanced Undergraduates. (1-5) I, II.****The Staff (Mr. Bliss in charge)****GRADUATE COURSE****299. Special Study for Graduate Students. (2 or 4) I, II.****The Staff**



**ROMANCE LANGUAGES AND LITERATURES**

ERNEST H. TEMPLIN, Ph.D., Professor of Spanish.

MARION A. ZEITLIN, Ph.D., Professor of Spanish.

HARRY F. WILLIAMS, Ph.D., Instructor in French.

**GRADUATE COURSES**

**201A-201B. French Historical Grammar and Methodology of Romance Linguistics.** (2-2) Yr. Mr. Williams

A knowledge of Latin is indispensable.

**\*203A-203B. Old Provençal: Reading of Texts.** (2-2) Yr. Mr. Templin

**\*235. Romance Versification.** (2) I. \_\_\_\_\_

**\*252. Methodology of Romance Philology.** (2) II. Mr. Zeitlin

\* Not to be given, 1948-1949.

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**SCANDINAVIAN LANGUAGES**

For courses in Scandinavian languages see under Department of Germanic Languages.

## SLAVIC LANGUAGES

\_\_\_\_\_, Professor of Slavic Languages.

EUFROSINA DVOICHENKO-MARKOV, Ph.D., Instructor in Slavic Languages.

DIMITRY M. KRASSOVSKY, J.S.C., Instructor in Russian.

ALEXANDER SOLOMON MORNELL, J.S.C., Lecturer in Russian.

*Letters and Science List.*—All courses in Slavic languages are included in the Letters and Science List of Courses. For regulations governing this list, see page 69.

## LOWER DIVISION COURSES

1. **Beginning Russian.** (4) I, II. \_\_\_\_\_

The first course in the Russian language. To meet five times a week.

2. **Elementary Russian.** (4) I, II. \_\_\_\_\_

Prerequisite: course 1.

Continuation of course 1. To meet five times a week.

18A-18B. **Elementary Russian Conversation.** (2-2) Yr. \_\_\_\_\_

A course in Russian conversation designed to accompany the lectures and recitations of courses 1 and 2. Open only to students who are taking 1 or 2.

42A-42B. **Russian Civilization.** (2-2) Yr. \_\_\_\_\_

Prerequisite: sophomore standing.

Lectures and reading in English. A study of the growth and development of Russian culture.

## UPPER DIVISION COURSES

102A-102B. **Second-Year Russian.** (3-3) Yr. \_\_\_\_\_

Prerequisite: courses 1 and 2.

103A-103B. **Third-Year Russian.** (3-3) Yr. \_\_\_\_\_

Prerequisite: courses 102A-102B.

130. **Russian Literature of the Nineteenth Century.** (3) I. \_\_\_\_\_

Prerequisite: junior or senior standing, or, with the consent of the instructor, sophomore standing.

Pushkin, Lermontov, Gogol, Turgenev, Dostoyevski, Tolstoy, and others. Lectures and reading in English, for the general student.

133. **Tolstoy and Dostoyevski.** (3) II. \_\_\_\_\_

Prerequisite: junior or senior standing, or, with the consent of the instructor, sophomore standing. Lectures and reading in English, for the general student.

## SOCIAL WELFARE

RALPH L. BEALS, Ph.D., Professor of Anthropology (Acting Chairman of the Department).

MARJORIE DRURY, Ph.D., Visiting Associate Professor of Social Welfare.

MAX SILVERSTEIN, M.S.W., Assistant Professor of Social Welfare.

—————, Instructor in Social Welfare.

The Department of Social Welfare administers a one-year graduate program leading to a Certificate in Social Welfare. For full details, see the announcement of the department.

*Undergraduate Curriculum.*—The Department of Social Welfare offers no professional courses on the undergraduate level. Students planning to enter the field of professional social work should secure a broad background in the social sciences and are referred particularly to the Curriculum in Presocial Welfare (page 85). Students who do not complete this curriculum should normally possess a similar training. Because of the variety of skills needed in social work, it is recognized that other types of training may sometimes offer an equally good background.

*Graduate Curriculum.*—Applicants for admission to the graduate curriculum must meet all admission requirements of the graduate division of the University. In addition, students must fill out special application forms supplied by the Department of Social Welfare. A personal interview is required whenever possible. Because of the limited facilities for field training, it is probable that the department will not be able to accept all qualified students who apply.

Students admitted to the graduate curriculum are expected to devote full time to their studies. The program includes a prescribed series of academic courses plus approximately 20 hours a week spent in supervised field work in a social agency.

The program of the department is not at present accredited by the American Association of Schools of Social Work, but students wishing to continue through a second year of training leading to the degree of Master of Social Welfare will normally be accepted by the School of Social Welfare at Berkeley and at certain other schools. An application for accreditation is being made with the American Association of Schools of Social Work.

## GRADUATE COURSES

These courses are intended for students enrolled in the certificate curriculum of the department and are not open to others except by permission of the department.

**202A. Social Case Work I. (2) I.**

Introduction to the professional principles which form the basis of social case work practice.

**202B. Social Case Work II. (2) II.**

Prerequisite: course 202A.

A continuation of Social Case Work I with emphasis on methods in social case work practice.

**203. Community Organization in Social Work. (2) II.**

Miss Drury

The interrelationship and significance of community forces in determining the character and extent of social work programs; the methods and processes

by which coöperative action is achieved in determining social needs and in developing resources to meet them.

**204. Health and Medical Care. (2) I.**

Mr. Silverstein

Discussion of public health and medical care problems with special reference to the social worker's role in assisting the ill person to make constructive use of the health and medical resources of the community.

**205. Psychiatry and Social Welfare. (2) II.**

An orientation course directed toward an understanding of contemporary theories and therapies in the control and treatment of mental and emotional disabilities and the social implications of medical and psychological factors.

**206. Social Group Work. (2) II.**

For students placed for field work in social group work agencies. A discussion of the function and role of the group worker in helping group members make maximum use of the group experience; an analysis of the principles, practice, and methods of professional group work.

**210. Public Welfare Services. (2) I.**

Miss Drury

Brief survey of the historical development of public welfare programs with emphasis on the contemporary structure and operations of public agencies; the interrelationship and responsibilities of federal, state, and local governments; varieties of public assistance programs.

**211. Public Welfare Organization, Function, and Administration. (2) II.**

Mr. Silverstein

Intensive examination of public welfare administration problems; implications of government in social work; organization in relation to function.

**212. Personality Development. (2) I.**

Miss Drury

Problems of normal growth of individuals as revealed in fundamental human experiences; behavior, growth, and change in the individual in contemporary society.

**215. Introduction to Social Work Research. (2) II.**

Miss Drury

The basic principles and methods of social research and their relation to the field of social work. Each student will be required to prepare an original report analyzing a social work problem growing out of field experience.

**401. Field Work. (2-6) I, II.**

Mr. Silverstein in charge

Normally the student will be required to spend 20 hours a week in field practice under supervision for which he will receive four units of credit each semester. In special cases this requirement may be modified to meet the needs of individual students.

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## SOCIOLOGY

For courses in sociology, see under Department of Anthropology and Sociology.

## 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).

HERMENEGILDO CORBATÓ, Ph.D., Associate Professor of Spanish.

JOHN A. CROW, Ph.D., Associate Professor of Spanish.

ANNA KRAUSE, Ph.D., Associate Professor of Spanish.

CHARLES SPERONTI, Ph.D., Associate Professor of Italian.

LEO KIRSCHENBAUM, Ph.D., Assistant Professor of Spanish.

MANUEL OLGUÍN, Ph.D., Assistant Professor of Spanish.

JOHN T. REID, Ph.D., Assistant Professor of Spanish.

MARIA L. DE LOWTHER, M.A., Assistant Professor of Spanish, Emeritus.

DONALD F. FOGELQUIST, Ph.D., Instructor in Spanish.

CARLO L. GOLINO, Ph.D., Instructor in Italian.

LEONOR MONTAU, A.B., Associate in Spanish.

SYLVIA N. RYAN, M.A., Associate in Spanish.

VIRGINIA G. BAÑOS, Ph.D., Lecturer in Spanish.

JOSÉ R. BARCIA, Licenciado en Filosofía y Letras, Lecturer in Spanish.

IRVING SPIEGEL, M.A., Lecturer in Spanish.

## 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 69.

*Preparation for the Major.*—(1) Courses 1, 2, 3, 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: courses 102A–102B, 116A–116B, and twelve units elected from courses 103, 104, 106, 110, 114, 115, 124, 134, and Portuguese 101B. With the permission of the department a maximum of four units of upper division work in literature in French, Italian, or Latin, in folklore, or in linguistics and general philology, may be included among the elective units. Students who do not have lower division credit for courses 20 or 25A–25B, or who failed to make a grade of A or B in them, are required to take course 101A–101B as juniors, but may omit 101B if 101A is passed with a grade of A or B.

Students desiring to specialize in the Spanish field should choose the elective units from courses 103, 106, 110, and 115; those desiring to specialize in the Spanish-American field, from courses 104, 114, 124, and 134.

Students planning to take graduate work in the department are expected to take course 115 or offer an equivalent. Two years of high school Latin, or the equivalent, are prerequisite to candidacy for the master's degree in Spanish.

As electives the department recommends courses in (1) the history, anthropology, geography, political institutions, and international relations of the country or countries most intimately connected with the major; (2) English literature; (3) French, German, Greek, Italian, Latin, and Portuguese language and literature; (4) the history of philosophy.

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.

#### 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.

Mr. Reid in charge

This course corresponds to the first two years of high school Spanish. Sections meet five hours weekly, including one hour of oral drill.

##### 1G. Reading Course for Graduate Students. (No credit) I, II. Mr. Spiegel

Four hours a week.

##### 2. Elementary Spanish. (4) I, II.

Mr. Reid in charge

Prerequisite: course 1, two years of high school Spanish, or the equivalent. Sections meet five hours weekly, including one hour of oral drill.

##### 3. Intermediate Spanish. (4) I, II.

Mr. Reid in charge

Prerequisite: course 2, three years of high school Spanish, or the equivalent. Sections meet five hours weekly, including one hour of oral drill.

##### 4. Intermediate Spanish. (4) I, II.

Miss Krause in charge

Prerequisite: course 3, four years of high school Spanish, or the equivalent.

##### 8A-8B-8C-8D. Spanish Conversation. (1 unit each semester) Beginning each semester.

Mr. Corbató in charge

Classes meet 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.

##### 10. Commercial Spanish. (4) I, II.

Mr. González

Prerequisite: course 3, four years of high school Spanish, or the equivalent. 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.

Miss Krause in charge

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.

**44A-44B. Latin-American Civilization. (2-2) Yr.**

Mr. Crow

Origins and main currents of Latin-American culture. Lectures in English, reading in Spanish or English.

**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, 108.

*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.**

Miss Krause in charge

May not be taken concurrently with or following 116A-116B.

**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. Kirschenbaum

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.

**108. The Folk Song in Spain and Spanish America. (1) I.**

Class meets two hours weekly.

Mr. Corbató, Mr. Crow

A study of the origins and development of Spanish folk music and of the different types of folk songs and folk poetry peculiar to the various regions of Spain and Spanish America.

**110A-110B. Contemporary Literature. (2-2) Yr. Miss Krause, 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. Templin

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.

Mr. Corbató, Mr. Reid

\* Not to be given, 1948-1949.

\* 115B to be given spring semester; 115A not to be given, 1948-1949.

124. Argentine Literature. (3) II. Mr. González
- \*134. The Argentine Novel. (3) II. Mr. González
- \*184. 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  
 Prerequisite: senior standing, at least ten units of upper division Spanish, the approval of the departmental adviser, and the consent of the instructor in the field selected for special study.

## GRADUATE COURSES†

- \*201A. Studies in Spanish Poetry. (2) I. Mr. Templin  
 The *Cancioneros* and the *Romancero*.
- \*201B. Studies in Spanish Poetry. (2) II. Mr. Templin  
 The *Siglo de Oro*, especially in relation to the Baroque.
- 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
- \*206. Eighteenth-Century Writers. (2) I. Mr. Corbató
- \*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  
 A knowledge of Latin is indispensable.
- 214A-214B. The Modernista Movement in Spanish America. (2-2) Yr. Mr. González  
 Prerequisite: course 104B or 114.
- \*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) I. Mr. Crow
241. The Spanish-American Short Story. (2) II. Mr. Crow
244. España en América. (2) I. Mr. Corbató
- 290A-290B. Special Study and Research. (2-6; 2-6) Yr. The Staff

† All candidates for the degree of Master of Arts must offer at least two years of high school Latin, or the equivalent.

\* Not to be given, 1948-1949.

\* 209B to be given spring semester; 209A not to be given, 1948-1949.



## PROFESSIONAL COURSE IN METHOD

**370. The Teaching of Spanish. (3) I, II.**

Mr. Reid

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

*Letters and Science List.*—All undergraduate courses in Italian are included in the Letters and Science List of Courses. For regulations governing this list, see page 69.

*Preparation for the Major.*—Italian 1, 2, 3, 4, or the equivalent to be tested by examination; History 4A–4B; Latin 1 or two years of high school Latin. Recommended: Philosophy 2A–2B, and an additional foreign language.

*The Major.*—Twenty-four units of upper division courses, of which at least 20 must be in Italian. Four units may be taken in French, German, Greek, Latin, Portuguese, or Spanish literature.

As electives the department recommends courses in (1) European history, anthropology, geography, political institutions, and international relations particularly as they relate to Italy; (2) English literature; (3) French, German, Greek, Latin, Portuguese, and Spanish language and literature.

## 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. Golino

Prerequisite: course 1, or two years of high school Italian.

**3. Intermediate Italian. (4) I.**

Mr. Golino

Prerequisite: course 2, or three years of high school Italian.

**4. Intermediate Italian. (4) II.**

Mr. Golino

Prerequisite: course 3, or four years of high school Italian.

**8A–8B. Italian Conversation. (1–1) Yr.**

Mr. Golino

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.**

A study of the growth and development of Italian culture in the various fields. There are no prerequisites for this course. Lectures in English, reading in Italian or English.

## UPPER DIVISION COURSES

Sixteen units of lower division courses in Italian, or the equivalent, are required for admission to any upper division course. All upper division courses, with the exception of 109A–109B, 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

\* Not to be given, 1948–1949.

**104A-104B. Italian Literature of the Nineteenth and Twentieth Centuries.** (2-2) Yr. Mr. Golino

**109A-109B. Dante's Divina Commedia.** (3-3) Yr. Mr. Speroni

With the consent of the instructor this course may also be taken by students who have a thorough preparation in French, Spanish, or Portuguese.

**\*130A-130B. Advanced Grammar and Composition.** (2-2) Yr. ———

Prerequisite: course 101A-101B.

**199A-199B. Special Studies in Italian.** (1-3; 1-3) Yr. Mr. Speroni

Prerequisite: senior standing, and at least nine units of upper division Italian.

## PORTUGUESE

### LOWER DIVISION COURSES

**1. Elementary Portuguese.** (4) I, II. Mr. Zeitlin, Mr. Kirschenbaum

This course corresponds to the first two years of high school Portuguese.

**2. Elementary Portuguese.** (4) I, II. Mr. Kirschenbaum, Mr. Zeitlin

Prerequisite: course 1, or two years of high school Portuguese.

### UPPER DIVISION COURSES

**101A-101B. Grammar, Composition, and Reading of Texts.** (3-3) Yr.

Prerequisite: course 2, or the equivalent. Mr. Kirschenbaum

**199A-199B. Special Studies in Portuguese.** (1-3; 1-3) Yr. Mr. Zeitlin

Prerequisite: 10 units of Portuguese, or the equivalent, and consent of the instructor.

### RELATED COURSES (See page 343)

#### Romance Languages and Literatures

**201A-201B. French Historical Grammar and Methodology of Romance**

**Linguistics.** (2-2) Yr. Mr. Williams

**\*203A-203B. Old Provençal: Reading of Texts.** (2-2) Yr. Mr. Templin

**\*235. Romance Versification.** (2) I. ———

**\*252. Methodology of Romance Philology.** (2) II. Mr. Zeitlin

\* Not to be given, 1948-1949.

**SUBJECT A: ENGLISH COMPOSITION**

**HUGH T. SWEDENBERG, JR., Ph.D.**, Associate 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.

**CHARLES S. NAUSS, B.A.**, Associate in Subject A.

**HORTENSE H. WILLIAMS, M.A.**, Associate in Subject A.

**Subject A. (No credit) I, II.**

**The Staff**

**Fee, \$20.**

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 35.

Training in correct writing, including drill in sentence and paragraph construction, diction, punctuation, grammar, and spelling. Weekly compositions and written tests on the text.

## SUBTROPICAL HORTICULTURE

A Division of the Department of Agriculture

SIDNEY H. CAMERON, Ph.D., Professor of Subtropical Horticulture (Chairman of the Division).

WILLIAM H. CHANDLER, Ph.D., Professor of Horticulture, Emeritus.

FREDERICK F. HALMA, Ph.D., Professor of Subtropical Horticulture.

ROBERT W. HODGSON, M.S., Professor of Subtropical Horticulture.

JACOB B. BIALE, Ph.D., Assistant Professor of Subtropical Horticulture.

CHARLES A. SCHROEDER, Ph.D., Assistant Professor of Subtropical Horticulture.

—————, Instructor in Subtropical Horticulture.

*Preparation for the Major.*—Subtropical Horticulture 2 and 110 or the equivalent, and the requirements in the Plant Science Curriculum (see pages 105, 106 of this catalogue, or the PROSPECTUS OF THE COLLEGE OF AGRICULTURE).

*The Major.*—Twelve units of upper division courses. Inclusion of Subtropical Horticulture 100, 101, and 102 is recommended.

## LOWER DIVISION COURSE

## 2. Elements of Fruit Production. (3) I.

Prerequisite: Botany 1, 2, or equivalent. This course is equivalent to Horticulture 2, 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.

## UPPER DIVISION COURSES

## 100. Systematic Pomology. (4) I.

Mr. Schroeder

Lectures, two hours; laboratory, six hours. Prerequisite: course 2 or the equivalent.

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 or five 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.

**110. Plant Propagation. (2) II.**

Mr. Cameron

Laboratory and lecture, six hours; three field trips. Prerequisite: Botany

**1. Recommended: Botany 6, 107, and 121.**

Principles and practices in plant propagation.

**113. Fruit Physiology and Storage Problems. (2) II.**

Mr. Biale

Lectures and discussions, two hours. Prerequisite: 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.

**199A-199B. Special Study for Advanced Undergraduates. (2-4; 2-4) Yr.**

Prerequisite: senior standing and consent of the instructor. The Staff

**GRADUATE COURSES****204A-204B. Advanced Horticulture. (3-3) Yr.**

Mr. Cameron

Lectures and discussion, three hours.

A critical review and discussion of horticultural research in selected fields.

**255A-255B. Seminar in Horticultural Science. (2-2)**

The Staff (Mr. Halma in charge)

**281A-281B. Research in Subtropical Horticulture. (2-6; 2-6) Yr.**

The Staff

## THEATER ARTS

KENNETH MACGOWAN, B.S., Professor of Theater Arts (Chairman of the Department).

RALPH FREUD, Associate Professor of Theater Arts (Director of the Theater Division).

WALDEN PHILIP BOYLE, Ph.D., Assistant Professor of Theater Arts.

WILLIAM MELNITZ, Ph.D., Assistant Professor of Theater Arts.

JOHN ROSS WINNIE, M.F.A., Assistant Professor of Theater Arts (Acting Director of the Motion Picture Division).

ESTELLE KARCHMER HARMAN, M.A., Instructor in Theater Arts.

W. DAVID SIEVERS, M.A., Instructor in Theater Arts.

ANDRE DACHARRY, Lecturer in Theater Arts.

NORMAN DYHRENFURTH, Lecturer in Theater Arts and Cinematographer.

EDITH HEAD, M.A., Lecturer in Theater Arts.

G. EDWARD HEARN, M.A., Lecturer in Theater Arts and Technical Director.

PATRICIA HUNGERLAND, M.A., Lecturer in Theater Arts.

WIARD IHENEN, Lecturer in Theater Arts.

JOHN JONES, A.B., Lecturer in Art.

HUGH MACMULLAN, A.B., B.Litt. Oxon., Lecturer in Theater Arts.

JACK MORRISON, A.B., Lecturer in Theater Arts.

WILLIAM SHULL, B.S., Lecturer in Theater Arts.

CHARLES VANENGER, Lecturer in Theater Arts.

NORDSTROM WHITED, A.B., Assistant in Theater Arts.

FRANKLIN FEARING, Ph.D., Professor of Psychology.

## College of Applied Arts

*Preparation for the Major.*—Courses 1, 2A–2B, 7, 24, 29A–29B, 48A–48B–48C, English 1A–1B, 36A–36B, Speech 3A, Physical Education 31.

*The Major.*—Forty units of coördinated upper division courses which may be taken in one of three specified majors.

(1) *Major in Theater.*—Courses 105, 155, 156A–156B, 159A, 159C–159D–159E, and 10 units to be approved by departmental adviser; English 114A–114B–114C, and 117J.

(2) *Major in Motion Pictures.*—Courses 155, 159A, 161, 169, 179A–179B, 179C–179D–179E, and 10 units to be approved by the departmental adviser; English 114A–114B–114C.

(3) *Major in Radio.*—Courses 125, 129A, 129C–129D–129E, 155, 159A, and 12 units to be approved by the departmental adviser; English 114A–114B–114C, and 117J.

## College of Letters and Science

*Letters and Science List.*—Courses 2A–2B, 24, 155, 156A–156B, and 169 are included in the Letters and Science List of Courses. For regulations governing this list, see page 69.

## GRADUATE DIVISION

*Admission to Graduate Status.*

In addition to meeting the requirements of the Graduate Division, the student must have completed an undergraduate curriculum in Theater Arts.

Students who have completed other curricula will be required to enroll in certain undergraduate theater arts courses which will not be acceptable in fulfillment of the requirements for advanced degrees.

*Requirements for the Master's Degree.*

The department will follow *Plan I* except in such cases as it is mutually decided to be advantageous to follow *Plan II*.

The program requires one year (two semesters) of intensive study and laboratory exercises. In addition to the minimum courses for the completion of the master's degree, the chairman of the department, in consultation with the other members of a student's advisory committee, may prescribe such additional courses as he believes are necessary to satisfy the educational needs of the student. All students are expected to take an active part in the production program of the department as partial fulfillment of the degree. In planning his course of study the candidate will place his emphasis upon either the theater, motion pictures, or theatrical and dramatic history and literature.

LOWER DIVISION COURSES

1. **Social Aspects of Mass Communication.** (3) I, II.

Mr. Fearing

Lecture, two hours; laboratory, two hours.

An orientation course devoted to the study of the relation of man to society. Particular attention will be given to the theater, motion pictures, and radio as media of communication and of integration in human society. The responsibilities of professional workers in these fields will be stressed.

2A-2B. **Acting Fundamentals.** (3-3) Yr. Beginning either semester.

Prerequisite: Speech 3A.

Mrs. Harman

The acting process. Exercises in characterization and interpretation. Normal and characterized speech and movement. Comparative study of acting periods and styles.

7. **Theater Survey.** (1) I, II.

Mr. Freud

Prerequisite: theater arts major or consent of the instructor.

A course of lectures designed to provide the beginning student with a general knowledge of theatrical methods and objectives and to provide him with a vocabulary of theatrical terms in common use.

8. **Motion Picture Survey.** (1) I, II.

Mr. Winnie

Prerequisite: motion picture division major or consent of the instructor.

A lecture course designed to provide the student with a general knowledge of the history of motion pictures and of current motion picture methods and practices and to provide him with a vocabulary of standard terms in common use in this field.

9. **Radio Survey.** (1) I, II.

Prerequisite: radio division major or consent of the instructor.

A lecture course designed to provide the student with a general knowledge of current radio practices and methods and to provide him with a vocabulary of standard terms in common use in this field.

24. **The History of Theater Arts.** (3) I, II.

Mr. Melnitz

The history of the development of the theater and its relationship to the arts, sciences, and disciplines of society from Aristotle to the motion picture and radio.

**29A-29B. Elementary Theater Laboratory. (1-1) Yr.****Mrs. Harman**

Acting exercise under faculty instruction in the presentation of scenes related to the study of Shakespeare or world drama (English 114A-B-C, 117J).

**48A. Theater Crafts. (2) I, II.****Mr. Jones**

Lecture, two hours; laboratory, three hours.

Study of and laboratory practice in the construction of scenery. The use of the materials and equipment of the modern educational theater.

**48B. Theater Crafts. (2) I, II.****Mrs. Hungerland**

Lecture, two hours; laboratory, three hours.

Study of the principles of theatrical costume construction. Laboratory practice in cutting, fitting, dyeing, and processes of decoration.

**48C. Theater Crafts. (2) I, II.****Mr. Jones**

Lecture, two hours; laboratory, three hours.

Practice in the crafts of property construction and in the use of sound and lighting equipment.

**UPPER DIVISION COURSES**

Theater arts major or minor or departmental consent is prerequisite to all upper division courses, except courses 103, 104, 105, 154, 155, 156A-156B, 167A-167B, 168, 169, 170, 171, 176A-176B, 177, and 180.

**104. History of the American Theater. (2) II.**

The history of the American theater from the Revolutionary War to the present.

**105. Readings for the Contemporary Theater. (2) I.****Mr. Boyle**

Study and discussion of modern theories and styles of production, direction, and acting, based on readings in definitive works on the modern theater.

**111. Acting for the Radio. (2) II.****Mr. Sievers**

Prerequisite: course 151.

The study of special problems in interpretation, characterization, dialect, and microphone technique.

**112. Radio Speech. (2) I.****Mr. Sievers**

Prerequisite: Speech 3A.

Study and practice in the microphone technique for announcing, news commentation, and public service programs.

**116A. Dramatic Writing for the Radio. (3) I.**

Prerequisite: English 106D-106E or consent of the instructor.

Theory and practice in the adaptation of plays, novels, and scenarios for presentation on the radio. The writing of original scripts for radio.

**116B. Documentary Writing for the Radio. (3) II.**

Prerequisite: consent of the instructor.

Study and practice in the writing of original scripts in which the emphasis is on the use of documentary material and the reenactment of events, combined with special uses of music and sound effects.



**125. Radio Production. (3) I, II.**

Prerequisite: courses 9 and 155.

A lecture course devoted to the study of the techniques and tools at the disposal of the radio director. Problems of music, sound effects, casting, studio acoustics, transcriptions, and timing.

**129A. Elementary Radio Workshop. (3) I.**

Prerequisite: course 125.

A basic laboratory course offering practice in the preparation of radio programs.

**129B. Intermediate Radio Workshop. (3) II.**

Prerequisite: course 129A.

Practical work in radio production, direction, acting, announcing, timing, engineering, and sound effects. Includes the transcription of original scripts.

**129C-D-E. Summer Radio Workshop. (2 units each)**

The Staff

Prerequisite: departmental consent.

A creative laboratory course in broadcasting, involving the preparation of programs for actual production and transmission at a local radio station.

NOTE.—This course is offered in Summer Session only. The three parts must be taken concurrently and constitute a full academic load for one session.

**140. Advanced Technical Practice. (3) I, II.**

Mr. Hearn

Lecture, two hours; laboratory, four hours.

Prerequisite: course 48A or Art 48A.

Practical study in the use of the materials and tools of theatrical production.

**141. Theatrical Lighting. (3) I.**

Mr. Hearn

Prerequisite: course 48A or Art 48A.

A study of the principles of light, color, illumination, and lighting control as applied to the stage.

**142. Theater and Motion Picture Costume Construction. (3) I, II.**

Prerequisite: course 48A or Art 48A.

Mrs. Hungerland

Lectures, demonstrations, and laboratory practice in the transformation of costume sketches into clothing for stage and screen.

**148A-148B. Scenic Design. (2-2) Yr.**

Mr. Jones

Lecture, two hours; laboratory, two hours.

Prerequisite: course 48A or Art 48A.

Study of the basic principles of design as applied to the theater. Execution of design projects in elevation, color, and mechanical drawing. Preparation of simple scale models. Preparation of designs for produced plays.

**149. Technical Supervision of Public Performances. (2) I, II.**

Mr. Hearn

Prerequisite: course 140 or 141, or consent of the instructor.

Training in the technical supervision of stage performances and the integration of lighting, scene changing, and management of acting and technical personnel.

**151. Advanced Acting. (3) I, II.**

Mr. Freud

Lecture, two hours; laboratory, three hours.

Prerequisite: courses 2A-2B, 29A-29B.

Advanced studies in characterization and interpretation. Development of personal style in acting.

- 154. Theater Organization and Management.** (2) I, II. Mr. Morrison  
The administrative and organizational techniques of the professional community and educational theaters.
- 155. Play Production.** (2) I, II. \_\_\_\_\_  
A course of lectures devoted to an examination of the integrated production process.
- 156A-156B. Dramatic Direction.** (3-3) Yr. Mr. Boyle  
Lecture, two hours; laboratory, four hours.  
Prerequisite: courses 105 and 155.  
Studies in analysis of dramatic materials and techniques of directorial restatement in theatrical terms.
- 159A. Intermediate Theater Workshop.** (3) I, II. \_\_\_\_\_  
Prerequisite: course 155 or consent of the instructor.  
Practice in theater production for actors, technical workers, designers, writers, dancers, and musicians. Performance before invited audiences.
- 159B. Advanced Theater Workshop.** (3) I, II. \_\_\_\_\_  
Mr. Boyle, Mr. Freud, Mr. Melnitz, Mr. Hearn  
Prerequisite: consent of the instructor.  
Practice in theater production before a paying audience.
- 159C-D-E. Summer Theater Workshop.** (2 units each) The Staff  
Prerequisite: departmental consent.  
Practice in and observation of the complete operation of a summer theater on a semiprofessional level.  
NOTE.—This course is offered in Summer Session only. The three parts must be taken concurrently and constitute a full academic load for one session.
- 161. Film Techniques.** (3) I, II. \_\_\_\_\_  
Prerequisite: course 8.  
A survey of techniques and practices in the use of camera, sound, editing, direction, animation, design, and writing for the motion picture.
- 162. Acting for the Motion Picture.** (2) I, II. \_\_\_\_\_  
Lecture, one hour; laboratory, two hours.  
Prerequisite: course 151 and/or consent of the instructor.  
The training and development of acting style for the motion picture.
- 163. Theater and Motion Picture Make-up.** (1) I, II. Mr. Dacharry  
The art and use of make-up for the theater and for motion pictures in black-and-white and in color.
- 164. Fundamentals of Motion Picture Direction.** (3) I, II. Mr. Winnie  
Lectures, two hours; laboratory, three hours.  
Prerequisite: courses 156A and 161.  
Lectures in the theory and development of directorial style for the educational training, documentary, and fictional film.
- 165A-165B. Motion Picture Editing.** (2-2) Yr. Mr. VanEger  
Lecture, two hours; laboratory, four hours.  
Prerequisite: course 161.  
Theory and application of the editorial process in relation to film making. Special emphasis on editorial techniques employed in the educational and documentary films.

- 166A. Writing for the Screen. (3) II.** Mr. Macgowan  
Prerequisite: English 106D-106E or consent of the instructor.  
Theory and practice in the writing of fictional film script.
- †166B. Writing for the Screen. (3) I.** Mr. MacMullan  
Theory and practice in the writing of educational and documentary film script.
- \*167A-167B. Motion Picture Design and Draftsmanship. (3-3) Yr.**  
Lecture, two hours; laboratory, four hours. Mr. Ihnen  
Theory and practice in the designing of settings and the drafting of plans, and the principles of construction.
- \*168. Motion Picture Costume Design. (2) I, II.** Miss Head  
Lecture, two hours; laboratory, two hours.  
Theory and practice in the design of period costumes and modern clothes for the screen.
- 169. Motion Picture Visual Analysis. (2) I, II.** Mr. MacMullan  
Lecture, two hours; laboratory, two hours; quiz, one hour.  
Theory of film making; the aesthetics of the screen as seen in selected silent and sound films, with special emphasis on the development of the educational and documentary film.
- \*170. Fundamentals of Motion Picture Animation. (3) I, II.** Mr. Shull  
Lecture, two hours; laboratory, four hours.  
Theory and practice in the making of animated drawings, and the use of appropriate equipment.
- \*171. Animation for the Educational and Documentary Film. (3) I.**  
Lecture, two hours; laboratory, four hours. Mr. Shull  
Prerequisite: course 170.  
The production of animated maps, graphs, and drawings.
- \*172. Animation for the Entertainment Films. (3) II.** Mr. Shull  
Lecture, two hours; laboratory, four hours.  
Prerequisite: course 170.  
The production of animated cartoons.
- 179A. Elementary Motion Picture Workshop. (3) I.** Mr. Dyhrenfurth in charge  
Laboratory practice in the fundamentals of film-making, as applied to the documentary, educational, and teaching film.
- 179B. Advanced Motion Picture Workshop. (3) I, II.** ———  
Prerequisite: course 179A.  
Laboratory practice in the making of the fictional film, including direction, acting, camera, lighting, and design.
- 179C-D-E. Summer Motion Picture Workshop. (2 units each)** The Staff  
Prerequisite: departmental consent.  
Intensive practice in the production of motion pictures.
- NOTE.**—This course is offered in Summer Session only. The three parts must be taken concurrently and constitute a full academic load for one session.

† For admission to this course candidates must submit to the instructor an original dramatic or motion picture script six weeks in advance of the semester opening.

\* For admission to these courses candidates must submit original designs six weeks in advance of the semester opening.

**180. Educational and Documentary Film Techniques. (3) I.**

Mr. Dyhrenfurth

A course of lectures surveying the basic techniques and practices employed in the documentary and educational fields.

**181A-181B. Motion Picture Photography and Sound. (3-3) Yr.**

Lectures, two hours; laboratory, four hours.

Mr. Dyhrenfurth

Prerequisite: consent of the instructor.

An advanced course in creative photography, mood lighting, camera movement, and sound perspective.

**199A-199B. Special Studies in Theater Arts. (1-4; 1-4) I, II.**

Mr. Macgowan and Staff

Prerequisite: senior standing, an average grade of B or higher in the department, and consent of the instructor.

Advanced individual work upon specific problems connected with theater, motion pictures, or radio.

**GRADUATE COURSES****200. Bibliography and Methods of Theatrical Research. (1) I, II.**

Mr. Melnitz

**201. The Backgrounds of Theatrical Art. (3) I.**

Mr. Boyle

An analysis of the aesthetic principles and content of the theater in relation to the other arts and to the society from which they spring.

**206. Advanced Playwriting. (3) I, II.**

Mr. Macgowan

Guided completion of a full-length play.

**\*231. The Teaching of Secondary School Dramatics. (2) I.**

Study of current methods and problems of production as related to teaching on the secondary level. Restricted to candidates for teaching certificates and approved theater arts majors.

**240. Technical Methods and Practices in the Theater. (3) II.**

Mr. Hearn

Advanced studies in theatrical lighting, construction, and design.

**270. Theory of the Educational Film. (3) II.**

Staff of Theater Arts and School of Education

Contributions from the two staffs to the analysis of existent educational films and the history of the theories and practices of visual education.

**271. Nature and History of the Documentary Film. (2) I.**

Mr. MacMullan

History of theories and practices in the thesis film. Intensive study and analysis of existent documentary films.

**272. Seminar in Theater History. (3) II.**

Mr. Melnitz

Exploration of a selected area of theatrical history. Guided reading in University, Clark, and Huntington libraries. Presentation of fully annotated written report of independent investigation.

**299A-299B. Special Problems in Theater Arts. (2-5; 2-5) I, II.**

The Staff

Practical creative work in the area of theater arts which the student has designated his area of emphasis. Work completed in this course may

\* Not to be given, 1948-1949.

serve as a basis for the student's thesis. Study may be pursued in the following areas: theatrical production, motion picture production, audio-visual educational production, and original theatrical research.

RELATED COURSES IN OTHER DEPARTMENTS

<b>English 106D-106E. Playwriting. (3-3) Yr.</b>	<b>Mr. Macgowan</b>
<b>English 262A-262B. Shakespeare. (3-3)</b>	<b>Miss Campbell</b>
<b>English 262D. Studies in Elizabethan Drama. (3)</b>	<b>Miss Campbell</b>
<b>English 263C. Studies in Drama, 1660-1790. (3)</b>	<b>Miss Campbell</b>
<b>Physical Education 227. Comparative Study of Materials and Methods in Dance. (3)</b>	<b>Miss Deane</b>
A study of educational ideas and practices as they relate to the various forms of dance.	

## ZÖÖLOGY

GORDON H. BALL, Ph.D., Professor of Zoölogy.

ALBERT W. BELLAMY, Ph.D., Professor of Zoölogy.

RAYMOND B. COWLES, Ph.D., Professor of Zoölogy.

THEODORE L. JAHN, Ph.D., Professor of Zoölogy.

BENNET M. ALLEN, Ph.D., Professor of Zoölogy, Emeritus.

LOYE HOLMES MILLER, Ph.D., Professor of Biology, Emeritus.

FREDERICK CRESCITELLI, Ph.D., Associate Professor of Zoölogy.

BORIS KRICHESKY, Ph.D., Associate Professor of Zoölogy (Chairman of the Department).

EDGAR L. LAZIER, Ph.D., Associate Professor of Zoölogy.

A. MANDEL SCHECHTMAN, Ph.D., Associate Professor of Zoölogy.

SARAH ROGERS ATSATT, Ph.D., Associate Professor of Zoölogy.

THEODORE H. BULLOCK, Ph.D., Assistant Professor of Zoölogy.

GEORGE A. BARTHOLOMEW, Ph.D., Instructor in Zoölogy.

CRAIG L. TAYLOR, Ph.D., Associate Professor of Engineering.

GRETCHEN L. BURLISON, M.A., Lecturer in Microscopic Technique.

S. J. GLASS, M.D., Research Associate in Zoölogy.

ELLY M. JACOBSEN, Ph.D., Research Associate in Zoölogy.

ISAAC JONES, M.D., Research Associate in Zoölogy.

MARIE NIEFT, Ph.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., D.Sc., 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 69.

*Preparation for the Major.*—Zoölogy 1A, 1B, Chemistry 1A-1B, and 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 101A, 101B, 101C, 103, 103C, 111, 118A-118B, 130, 131.

Group 2: Courses 100, 106, 107, 107C, 111C, 111H.

Group 3: Courses 110, 112, 133, 134.

*Curriculum for Medical Technicians.*—For details see this Catalogue, page 78.

## LOWER DIVISION COURSES

## 1A. General Zoölogy. (4) I.

Mr. Bullock

Lectures, two hours; laboratory, six hours; field trip. Prerequisite: Chemistry 1A or 2A.

Principles of animal biology with emphasis on the invertebrates. Offered primarily for zoölogy majors and premedical students.

**1B. General Zoölogy. (4) II.**

Mr. Bartholomew

Lectures, two hours; laboratory, six hours. Prerequisite: course 1A, and chemistry.

Principles of animal biology with emphasis on comparative gross and microscopic anatomy and physiology of the vertebrates.

**4. Microscopical Technique. (2) I, II.**

Mrs. Burleson

Lectures and laboratory, six hours. Prerequisite: course 1B or the equivalent, or consent of the instructor.

**15. Elementary Zoölogy and Physiology. (5) I.**

Lectures, three hours; laboratory, six hours. Prerequisite: one semester college chemistry (Chemistry 2A or 1A). Not open to premedical or zoölogy majors.

**16. Applied Human Physiology. (2) II.**

Miss Atsatt

Lectures, one hour; laboratory, three hours. Prerequisite: course 15.

**35. General Human Anatomy. (3) II.**

Miss Atsatt

Lecture, two hours; laboratory, three hours. Prerequisite: course 15, and sophomore standing.

**UPPER DIVISION COURSES**

**100. Vertebrate Embryology. (4) I.**

Mr. Schechtman

Lectures, two hours; laboratory, six hours.

Prerequisite: courses 1A, 1B, or the equivalent.

Study of embryologic development of the vertebrates, including amphibia, chick, and mammal.

**101A. Introduction to General Physiology. (3) I.**

Mr. Crescitelli

Special emphasis on the physical and chemical properties of protoplasm; osmotic relations and permeability of living cells; physiological action of ions and principles of enzyme action. Prerequisite: course 1A, 1B, or equivalent; Chemistry 1A, 1B, 6A, 8; Physics 2A, 2B, or equivalent is recommended.

**101B. General Physiology. (3) II.**

Mr. Crescitelli

Continuation of course 101A with emphasis on oxidation-reduction systems, excitation, inhibition, respiration, and muscle contraction. Prerequisite: course 101A.

**101C. Laboratory in General Physiology. (2) II.**

Mr. Crescitelli

Prerequisite: course 101A, 101B. Course 101B may be taken concurrently.

**103. Experimental Embryology. (3) II.**

Mr. Schechtman

Prerequisite: courses 1A, 1B, or equivalent. Principles governing histological and morphological differentiation; an analysis of the factors involved in normal and abnormal growth and differentiation of cells and tissues.

**103C. Experimental Embryology Laboratory. (2) II.**

Mr. Schechtman

Prerequisite or concurrent: course 103.

**106. Comparative Anatomy of the Vertebrates. (4) I.**

Miss Atsatt

Lecture, two hours; laboratory, six hours. Prerequisite: course 1B.

- \*107. Microanatomy. (2) II.** Mr. Krichesky  
Prerequisite: course 1B.  
The structure and activities of cells and tissues with emphasis on the mammals.
- \*107C. Microanatomy Laboratory. (2) II.** Mr. Krichesky  
Prerequisite or concurrent: course 107.
- \*110. Protozoölogy. (4) II.** Mr. Ball  
Lectures, two hours; laboratory, six hours. Prerequisite: course 1A.
- 111. Parasitology. (2) I.** Mr. Ball  
Prerequisite: course 1A.
- 111C. Parasitology Laboratory. (2) I.** Mr. Ball  
Prerequisite or concurrent: course 111.
- 111H. Laboratory Aide Training in Parasitology. (2) I.** Mr. Ball  
Prerequisite or concurrent: course 111C.  
For persons intending to become laboratory technicians.
- 112. Advanced Invertebrate Zoölogy. (2) II.** Mr. Bullock  
Lectures, two hours; laboratory and field, six hours. Prerequisite: upper division standing and general zoölogy.
- 112C. Invertebrate Zoölogy-Lab (2)**
- \*117. Zoölogical Theories and Concepts. (2) II.** \_\_\_\_\_  
Readings, discussions, and lectures. Prerequisite: senior standing.
- 118A. Introductory Endocrinology. (3) I.** Mr. Krichesky  
Prerequisite: upper division standing.
- 118B. Advanced Endocrinology. (2) II.** Mr. Krichesky  
Prerequisite: course 118A and Chemistry 8.
- 130. Genetics. (2) I.** Mr. Bellamy  
Lectures and discussions, two hours. Prerequisite: course 1A, or Botany 1A.
- 131. Genetics Laboratory. (2) I.** Mr. Bellamy  
Laboratory, six hours. Prerequisite or concurrent: course 130.
- 133. Biology of the Cold-Blooded Vertebrates. (4) II.** Mr. Cowles  
Lecture, two hours; laboratory, six hours; field trips.  
Prerequisite: courses 1A and 1B.  
The systematics, distribution, physiology, and ecology of amphibians and reptiles, with a brief account of the fishes.
- 134. Biology of the Warm-Blooded Vertebrates. (4) I.** Mr. Bartholomew  
Lecture, two hours; laboratory, six hours; field trips.  
Prerequisite: courses 1A and 1B.  
The ecology, physiology, distribution, behavior and systematics of birds and mammals.
- 195A-195B. Readings in Zoölogy. (2-2) Yr.** The Staff  
Prerequisite: senior standing.  
Library problems.

\* Not to be given, 1948-1949.



**199A-199B. Problems in Zoölogy. (2-2) Yr.**

The Staff

Prerequisite: senior standing with such special preparation as the problem may demand.

**GRADUATE COURSES****201. Advanced General Physiology. (3) II.**

Mr. Jahn

Prerequisite: courses 101A and 101B.

**210. Physiology of Protozoa. (3) I.**

Mr. Jahn

Lecture, two hours; laboratory, three hours.

Prerequisite: course 110.

**\*250. Survey of Animal Biology: Seminar. (3) II.**

The Staff

Designed especially for secondary credential students.

**251A-251B. Seminars in Ecology. (2-2) Yr.**

Mr. Cowles

**252A-252B. Seminars in Endocrinology. (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

**257A-257B. Seminar in Comparative Physiology. (2-2) Yr.**

Mr. Bullock

**258. Seminar in Cellular Physiology. (2) I.**

Mr. Jahn

**290A-290B. Research in Zoölogy. (2-6; 2-6) Yr.**

The Staff

**PALEONTOLOGY**

Courses in general and invertebrate paleontology are offered by the Department of Geology (see page 240).

**LIFE SCIENCES****LOWER DIVISION COURSES****1A-1B. Fundamentals of the Life Sciences. (3-3) Yr.**

Lectures, three hours. A survey of the life sciences.

**12. General Biology. (3) I.**

Mr. Cowles

Lectures, three hours; demonstration, one hour; one required field trip in the semester. Prerequisite: Life Sciences 1A or the equivalent, or consent of the instructor.

\* Not to be given, 1948-1949.

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