

UNIVERSITY OF CALIFORNIA **BULLETIN**

ANNOUNCEMENT OF COURSES

Primarily for Students in the
DEPARTMENTS AT LOS ANGELES

**Summer and Fall Terms
1943-1944**

Note. All announcements herein are subject to revision. Supplementary circulars will be issued from time to time as changed conditions may necessitate.

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**UNIVERSITY OF CALIFORNIA
LOS ANGELES CAMPUS**

**ANNOUNCEMENT
OF COURSES**

Summer and Fall Terms

1943-1944

405 HILGARD AVENUE, LOS ANGELES

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CALENDAR, 1943-1944

1943

June 21, Monday

June 30, Wednesday

June 30, Wednesday

July 1, Thursday

July 2, Friday

July 3, Saturday

July 5, Monday

July 10, Saturday

Aug. 21, Saturday

Oct. 18, Monday

Oct. 23, Saturday

Oct. 23, Saturday

Summer Term

Applications for admission to undergraduate or graduate standing in the summer term, with complete credentials, should be filed on or before this date to avoid late application fee.

9:00 a.m. Examination in Subject A.

Consultation with advisers by new students.

Registration of students in all classifications:

8:30 a.m.-11:30 a.m. Initials A-K.

12:30 p.m.- 3:30 p.m. Initials L-Z.

3:30 p.m.- 4:00 p.m. All initials.

Registration of students in all classifications:

9:00 a.m.- 1:00 p.m. All initials.

Instruction begins.

9:00 a.m. Special examination in Subject A.

End of mid-term period.

Final examinations, summer term.

Summer term ends.

Fall Term

Oct. 18, Monday

Applications for admission to undergraduate or graduate standing in the fall term, with complete credentials, should be filed on or before this date to avoid late application fee.

9:00 a.m. Examination in Subject A.

Oct. 27, Wednesday

Oct. 27, Wednesday

Oct. 28, Thursday

Oct. 29, Friday

Consultation with advisers by new students.

Registration of students in all classifications:

8:30 a.m.-11:30 a.m. Initials L-Z.

12:30 p.m.- 3:30 p.m. Initials A-K.

3:30 p.m.- 4:00 p.m. All initials.

Registration of students in all classifications:

9:00 a.m.- 1:00 p.m. All initials.

Oct. 30, Saturday

Instruction begins.

Nov. 1, Monday

Nov. 6, Saturday

Nov. 25, Thursday

Dec. 18, Saturday

Dec. 22, Wednesday

Dec. 28, Tuesday

9:00 a.m. Special examination in Subject A.

Thanksgiving Day: a holiday.

End of mid-term period.

Christmas recess.

1944

Jan. 1, Saturday

Feb. 21, Monday

Feb. 26, Saturday

Feb. 26, Saturday

New Year's Day.

Final examinations, fall term.

Fall term ends.

Spring Term, 1944

March 3, Friday

March 4, Saturday

March 6, Monday

June 24, Saturday

Registration.

Instruction begins.

Spring term ends.

THE UNIVERSITY OF CALIFORNIA

GENERAL ADMINISTRATIVE OFFICERS

ROBERT GORDON SPROUL, B.S., LL.D., Litt.D., President of the University.

MONROE E. DEUTSCH, Ph.D., LL.D., Vice-President and Provost of the University.

ROBERT M. UNDERHILL, B.S., Secretary and Treasurer of the Regents.

JAMES H. CORLEY, B.S., Comptroller (General Business Manager).

MERTON E. HILL, Ed.D., Director of Admissions.

HIRAM W. EDWARDS, Ph.D., Director of Relations with Schools.

BENNET M. ALLEN, Ph.D., Acting Dean of the Graduate Division, Southern Section.

HARRY M. SHOWMAN, E.M., M.A., Registrar.

GEORGE F. TAYLOR, Acting Business Manager.

The Three-Term Program of the University

THE DUTY of a university in time of war is threefold: to train young men and women for technical service in the armed forces and in war industries; to conduct important research directly related to the war; and to carry on its proper functions as a university—the advancement of knowledge and the education of youth.

The University of California is performing all these duties. It is carrying on important war research in its laboratories. It is providing specialized training both for men sent by the Army and the Navy and for civilians. The program of the armed forces for the use of the University for military training will soon be greatly expanded. But the University has by no means become solely a "war college." It still recognizes, and fulfills, its function as a university. While it is giving the technical training in scientific and specialized fields to equip students for service in the armed forces and supporting industries, it is also training the minds of young men and women so that they may better meet their responsibilities as free citizens in a civilized world.

In order to accelerate both training and education, and to enable young men and women to take their places, not only in the service of the nation, but also as responsible citizens, sooner than might otherwise be possible, the University of California has adopted a three-term calendar. The advantages to the student are obvious. By attending three terms continuously, he will be able to complete a four-year course in two years and eight months, and a seven-year course, such as that in medicine, in four years and eight months. Again, the Army and Navy require students to estimate the date of their graduation on the basis of the accelerated program. Likewise, Selective Service officials, in announcing deferment for students in certain professional and scientific fields, presume that they will take advantage of the accelerated program. Therefore, although attendance in the three terms is not mandatory, it is recommended.

UNIVERSITY OF CALIFORNIA

LOS ANGELES

SITE OF THE CAMPUS

THE LOS ANGELES CAMPUS of the University of California is situated on the hills east of Santa Monica and west of Beverly Hills; the Pacific Ocean, visible from the grounds, is five miles distant in a direct line. This proximity to the ocean insures an even temperature without extremes, and makes the climate well suited for study and recreation throughout the year. The warmest month of the year is August; the coolest is January.

The University campus is easily reached from all the principal sections of Los Angeles. Eight or more bus lines, operated by the Los Angeles Motor Coach, Pacific Railway, and Bay Cities Transit companies, connect the University with Pershing Square, and with Pico, Wilshire, Beverly, Sunset, and Hollywood boulevards, and the districts of Santa Monica, Ocean Park, Venice, Brentwood Heights, West Los Angeles, Pasadena, Eagle Rock, and Glendale. Private automobiles should turn south from Sunset Boulevard at Hilgard Avenue, or north from Wilshire Boulevard at Westwood Boulevard.

SURVEY OF CURRICULA

Instruction on the Los Angeles campus of the University of California is offered in the College of Letters and Science, with curricula leading to the degree of Bachelor of Arts, curricula of the earlier years of the College of Dentistry, of the Medical School, and of the College of Chemistry; in the College of Business Administration, with curricula leading to the Bachelor of Science degree; in the College of Applied Arts, with curricula leading to the degrees of Bachelor of Arts and Bachelor of Science, curricula of the earlier years of the College of Engineering, the School of Optometry, and the College of Pharmacy, and a curriculum leading to the Certificate in Public Health Nursing; and in the College of Agriculture, with curricula leading to the degree of Bachelor of Science. Students electing certain curricula in the College of Agriculture may register at Los Angeles for the first four terms and then transfer to Berkeley to complete the requirements for the degree.

A more detailed description of each college follows, on pages 21-24.

The work of the lower division, comprising the studies of the freshman and sophomore years, leads in the College of Letters and Science, Business Administration, and Applied Arts, to the degree of Associate in Arts. This degree, or its equivalent, is prerequisite to upper division work in these colleges.

The School of Education at Los Angeles supervises curricula leading to the Certificates of Completion for the various elementary and secondary teaching

credentials, and for the administrative credential. Graduate study, leading to the degrees of Master of Science and Master of Arts, and to the degree of Doctor of Philosophy, is also available.

REQUIREMENTS FOR ADMISSION

Applicants may qualify for admission to the University of California in undergraduate status either as regular or special students, and for admission in graduate status.

Admission in Undergraduate Standing

Admission to undergraduate standing may be sought on the basis of certificate, which presupposes graduation from an approved high school; on the basis of College Entrance Board examinations covering the required fields of study; and on the basis of advanced work in a recognized junior college, four-year college, or university. Certain scholarship and subject requirements must be fulfilled for admission either as a freshman or as a student with advanced standing. Students who have not qualified for admission are given suggestions concerning how they may qualify. The rules governing admission to undergraduate status are administered by the Board of Admissions, and prospective students should address the Director of Admissions, University of California, 405 Hilgard Avenue, Los Angeles, California, who will supply the necessary forms of application and give information relating to entrance. Every applicant for admission to the University is required to pay an application fee of \$5 when the first application is presented. Remittance should be made by draft or money order payable to The Regents of the University of California.

The responsibility for the granting of certificates to high school students and for determining the scope and content of courses preparatory to University admission lies with the high school authorities. Students will be guided, therefore, by their respective principals in making preparation for entrance to the University.

Often students reach the junior or senior year of high school without having planned to enter the University of California. Such students, who have a high scholarship average and who decide late in their high school years that they wish to enter the University, are encouraged to submit their transcripts for evaluation. This is in keeping with the University's policy that no worthy student shall be denied admission if his previous record makes it appear that his scholastic ability is of sufficiently high order to insure success in University work. For several years students have been admitted in freshman standing *who have no scholarship shortage* in their high school record but whose pattern of high school subjects failed in one way or another to conform to the below-stated subject requirements. Each applicant in this classification is given individual consideration by the Board of Admissions upon presentation of his official high school record.

For admission in freshman standing, an applicant must present evidence of having been graduated from an accredited high school and of having completed in his program at least fifteen matriculation units, distributed as follows:

- (a) History 1 unit. —This may consist of any two semesters of United States history, or United States history and civics.
- (b) English 3 units. —These may consist of any six semesters in English, public speaking, journalism, or drama.
- (c) Mathematics 2 units. —These must consist of two semesters of elementary or advanced algebra, and two semesters of plane geometry, or solid geometry and trigonometry.
- (d) Science 1 unit. —This may consist of a year course in one field of science, namely, biology, botany, chemistry, physical science, physics, physiology, or zoology. The science selected must be an advanced (3d or 4th year) laboratory science, and the two semesters must be in the same subject field.
- (e) Foreign language 2 units. —These must be in one language.
- (f) Advanced (3d or 4th year) mathematics, or foreign language, or chemistry, or physics—1 unit; or two years of a second language. 2 units.

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 about the preparation required and recommended for each curriculum will be found in the separate announcements of the various colleges and in the CIRCULAR OF INFORMATION, DEPARTMENTS AT LOS ANGELES.

For any of the required subjects, enumerated above, completed in the ninth grade (first year of high school), *subject credit* is given irrespective of the scholarship grade received, provided, of course, it is a passing grade. In the required subjects completed in the *last three years* of the high school program, however, a scholarship *average* of grade B (based on a marking system of four passing grades: A, B, C, D) must have been maintained. In computing scholarship averages, *semester grades* rather than year grades are used. For example, a semester grade A in either half of one prescribed course may be used to offset a semester grade C in either half of any other prescribed course. Required subjects taken in the last three years of high school in which a grade D has been received will not be counted either in reckoning the required scholarship average or in satisfaction of subject requirements. A grade earned by repeating a course in which the original mark was not higher than C may be counted.

Deficiencies in scholarship or subject requirements may be removed by courses in the University of California Extension Division, in the University's summer terms either at Los Angeles or at Berkeley, or in the College of Agriculture at Davis; by nondegree work in a junior college or by advanced courses

in a junior college, state college, or other four-year collegiate institution; by postgraduate subjects in an accredited high school; or by College Entrance Board examinations. These examinations also provide a method of admission for an applicant who either has not graduated from an accredited high school or whose school work in California or elsewhere does not, in the opinion of the Board of Admissions, entitle him to admission by certificate as described above. Further information about the removal of entrance deficiencies may be had by writing to the Director of Admissions.

An applicant for admission in advanced standing must present evidence that he has satisfied in full the subject and scholarship requirements prescribed for the admission of high school graduates in freshman standing as stated above, and that the advanced work completed by him in institutions of college standing has met the scholarship requirements set by the Board of Admissions for entrance to the University of California; namely, a thoroughly satisfactory scholarship record, which is defined as a grade C or higher in all work of college level undertaken. No applicant may disregard his college record and apply for entrance in freshman standing. Complete official transcripts of record from preparatory schools and colleges attended, together with a statement of honorable dismissal from the latter, must be presented to the Board of Admissions by every applicant for admission in advanced standing. Furthermore, an applicant from a junior college or state college in California, who upon graduation from high school did not qualify for admission in freshman standing, must submit evidence that, in addition to the removal of all entrance deficiencies, he has completed, with a satisfactory scholarship average, not fewer than 60 units of work acceptable for advanced standing in the college of the University to which admission is sought. The scholarship record of an applicant presenting fewer than 60 units of acceptable advanced work must be of a distinctly high scholarship average. Provided his college record is satisfactory, the high school record of an applicant for admission with advanced standing from another collegiate institution will be given the same consideration as the high school record of a student applying for admission to freshman standing in the University.

Besides regular students, or those who have met the entrance requirements outlined above and are candidates presumably for the bachelor's degree, provision is also made for the admission of students of mature years (twenty-one years of age or more) who have not had an opportunity to complete a satisfactory high school program, but who, because of special attainments, may be prepared to undertake certain courses in the University. These are known as special students, and the conditions for the admission of each applicant under this classification will be assigned by the Director of Admissions. Ordinarily, a personal interview will be necessary.

The credentials of an applicant for admission from a foreign country 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 term in which the applicant hopes to gain admittance. This will allow time for the exchange of correspondence concerning entrance and, if the applicant is admitted, will 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 an oral and written examination. This regulation applies to both graduate and undergraduate foreign students.

Admission in Graduate Standing

Applications for admission in graduate standing will be received from graduates of recognized colleges and universities who plan to work for the degrees of Master of Arts or Master of Science, or for the degree of Doctor of Philosophy, or for the certificates of completion leading to the general secondary or junior college teaching credentials.

The basis of admission to regular graduate status is the promise of success in the work to be undertaken, as evidenced in large measure by the previous college record. In general, a minimum undergraduate scholarship record equivalent to a 1.5 grade-point average (halfway between grades C and B) at the University of California is prescribed. Each applicant is notified as soon as possible whether his application has been accepted or rejected. An applicant is warned not to make definite arrangements for attending the University on the assumption that he will be accepted for admission, until he has received notification of acceptance.

Graduate students who wish to take further work in undergraduate courses may be admitted, upon presentation of credentials and payment of the application fee, in *unclassified* graduate status. An unclassified graduate student is in general admitted to any undergraduate course for which he has the prerequisites; he may not enroll in any graduate course, nor is any assurance implied of later admission to regular graduate status.

Further information about admission to graduate standing and the fields of study open to graduate students is given in the ANNOUNCEMENT OF THE GRADUATE DIVISION, SOUTHERN SECTION, which may be obtained from the Registrar. He will also supply, upon request, the necessary form of application. This should be returned to the Registrar accompanied by the \$5 application fee, which is required of every applicant for admission in graduate status, even though he may have been in previous attendance at the University in other than graduate standing. Remittance should be made payable to The Regents of the University of California.

GENERAL UNIVERSITY REQUIREMENTS

Common to all undergraduate students are the University requirements in Subject A (English composition), American Institutions, and physical education; and, for men students, in military or naval science.

Examination in Subject A. The examination in Subject A is designed to test the student's ability to write English without gross errors in spelling, punctuation, grammar, and sentence structure. Every undergraduate entrant must, at the time of his registration in the University, take this examination or present satisfactory evidence that he has fulfilled the requirement. Failure to pass the examination does not bar him from admission to the University, but it does result in his being required to take a course of instruction (for which a fee of \$10 is charged), three hours weekly for a full term, known as the Course in Subject A. This course yields no unit credit toward graduation.

A student is not held to this requirement who presents official evidence that he 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 June; or that he has received a passing grade in the College Entrance Examination Board examination in English 1, in English 1-2, or in the Comprehensive Examination in English; or who submits credentials showing the completion elsewhere of the required fundamental training in English composition and expression.

American Institutions. A knowledge of the provisions and principles of the Constitution of the United States is prerequisite to the bachelor's degree or teaching credential. This requirement may be satisfied by passing the examination in American Institutions offered each term under the direction of the Committee on American Institutions; by completing the course, American Institutions 101, or certain designated advanced courses in history or political science; or by presenting credit for an acceptable course completed at another institution of college standing.

Physical Education. In each term of the freshman and sophomore years every undergraduate student under twenty-four years of age, man or woman, is required to take one unit of prescribed physical education. The student must report, immediately following his registration, to the proper officer for enrollment, in accordance with the directions in the REGISTRATION CIRCULAR or the announcements which may be posted on the bulletin boards.

Military Science and Naval Science. All undergraduate men students in freshman or sophomore standing, under twenty-four years of age at the time of admission to the University, are required to enroll for training in military or naval science, unless formally excused from the requirement. The United States Government supplies arms, equipment, uniforms, and some textbooks for the use of students belonging to the military and naval units.

Further information concerning the requirements in physical education and military or naval science and a statement of the grounds upon which a student may claim exemption or deferment may be obtained from the Registrar's office.

National Service Courses. Every undergraduate student is required as a condition of his attendance as a student, to enroll in and to complete at least one course directly serviceable to the Nation's war effort. Courses which may be so used are designated in special lists available at registration periods.

MISCELLANEOUS INFORMATION

EXPENSES—LIVING ACCOMMODATIONS—EMPLOYMENT— SCHOLARSHIPS—LOANS—STUDENT HEALTH

GENERAL EXPENSES AND FEES

The question of expenses 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 that he will in all probability have to provide for.

A table of estimated minimum, moderate, and liberal budgets for a college year of two terms is given on page 17.

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 for the summer term is \$27; for the fall term, \$29. This fee, which must be paid at registration, covers certain expenses of students for library books, for athletic and gymnasium facilities and equipment, for lockers and washrooms, for registration and graduation, and for such consultation, medical advice, and hospital care or dispensary treatment as can be furnished by the Student Health Service. It also includes the rights and privileges of membership in the Associated Students, valued at \$2-4. No part of this fee is remitted to those students who may not desire to make use of any or all of these privileges. If a student withdraws from the University within the first four weeks from the date of his registration, a part of this fee will be refunded. The incidental fee for graduate students is \$25 each term; it does not include membership in the Associated Students.

Tuition. Students who are classified as nonresidents of the State are required to pay, each term, in addition to the incidental fee, a tuition fee of \$75.* The nonresident fee must be paid at the time of registration each term. According to the rules governing residence in the University, a nonresident student is one who has not been a bona fide resident of the State of California for more than one year just preceding the opening date of the term in which he proposes to attend the University. Furthermore, the attention of the prospective student

* If a student registers for less than 12 units, the tuition fee is \$5 a unit or fraction of a unit, with a minimum of \$25.

who has not attained the age of twenty-two years and whose parents do not live in the state is directed to the fact that presence in the State of California for a period of more than one year just preceding the opening day of the term in which he proposes to attend the University, does not, of itself, entitle him to classification as a resident of California. The eligibility of a student to register as a resident of the state may be determined only by the Attorney for the Regents in Residence Matters. When the University is not in regular session, the Attorney may be consulted or communications may be addressed to him at 910 Crocker Building, San Francisco, California. On the day before the first day of registration, and throughout the registration period, he will keep consultation hours on the Los Angeles campus. Further information about the exact time and place may be obtained from the office of the Registrar. A more detailed statement of the rules governing residence will be found in the CIRCULAR OF INFORMATION.

Laboratory fees. Laboratory charges, apportioned on the basis of materials used and for certain costs involved in the maintenance and operation of laboratory equipment, differ with the individual student's course, the range of fees in the elementary laboratories being from \$1.50 to \$30 a term.

Other fees. Students who fail to pass the required examination in Subject A must pay a fee of \$10 for the Course in Subject A. For the tardy performance of certain routine procedures—such as late registration, late filing of study lists, etc.—fees are imposed which range from \$1 to \$2.

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

Refund on the nonresident fee of \$75 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 term.

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 Comptroller of his registration certificate and receipt. Students should preserve their receipts.

LIVING ACCOMMODATIONS AND GENERAL EXPENSES FOR WOMEN

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

Mira Hershey Hall, made available by the will of the late Miss Mira Hershey,

is the only dormitory maintained on the Los Angeles campus. It is conveniently situated on the campus and accommodates one hundred twenty-eight women students. Board and room costs \$50 a month. Applications for residence should be filed with the Dean of Women as early as possible.

Three privately owned halls of residence provide board and room at rates varying from \$45 to \$60 per month per person; board may consist of two or three meals per day for five or six days per week. Three college halls provide rooms and also housekeeping accommodations at rates from \$18 to \$25 per month per person. There are four coöperative halls of residence, in which the usual price for board and room is \$30 per month per person. Private homes offer accommodations of all kinds at about the same rates as the halls of residence.

Self-supporting women will find many positions open to them but not all are in close proximity to the University. All self-supporting women should consult the staff of the Dean of Women with respect to their plans.

Extracurricular expenses may be kept at a minimum. The expense of participating in general and honorary or professional organizations need not cost more than \$5 a term. Membership in a social sorority may be estimated at from \$12 to \$30 a month, in addition to the cost of board and lodging.

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

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

LIVING ACCOMMODATIONS AND GENERAL EXPENSES FOR MEN

The cost of attending the University varies greatly with the individual student; however, the majority of men students living away from home spend between \$350 and \$450 a term. Students classified as nonresidents of California must also pay the tuition fee of \$75 each term.

The cost of board and room is estimated as from \$40 to \$60 a month. A list of rooming and boarding houses for men is prepared by the Dean of Undergraduates and may be obtained at Room 202, Administration Building. The University does not maintain on the Los Angeles campus any dormitories for men. Students attending the University and living at home should make an estimate of the cost of transportation and include this item in the year's budget.

The initiation fees for professional fraternities vary from \$5 to \$12, and for social fraternities from \$50 to \$100. The dues for social fraternities average about \$5 a month and the cost of living in a fraternity house* averages about

* For the summer term of 1948 and for an indefinite period thereafter, all fraternity houses have been taken over by the Armed Forces.

\$40 a month. This amount does not include the cost of social affairs which may be given by the fraternity in the course of the year.

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

PRINCIPAL ITEMS OF EXPENSE ESTIMATED ON A TWO TERMS' BASIS

Expense Items	Minimum		Moderate		Liberal	
	Men	Women	Men	Women	Men	Women
Incidental Fee.....	\$ 56	\$ 56	\$ 56	\$ 56	\$ 56	\$ 56
Books and Supplies.....	25	25	45	45	65	65
Board and Room (or Housekeeping)	320	440 (240)	450	520 (350)	550	600 (500)
Miscellaneous (Recreation, club dues, laundry, drugs, etc.).....	25	80	75	150	200	250
Total.....	\$426	\$621	\$626	\$771	\$871	\$971

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 of \$75 each term.

SELF-SUPPORT AND STUDENT EMPLOYMENT

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

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

(1) Whenever possible, it is wise for a student to use his savings to make the first term 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 Univer-

sity course. By the end of the first term the student should know the demands of university life and his own capabilities well enough to make it possible to plan, for subsequent terms, 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 term 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 terms 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 Guidance and Placement

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

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

Little can be done in obtaining employment for students who are not actually on the ground to negotiate for themselves. No student should come to Los Angeles expecting to become self-supporting at once but should have on hand sufficient funds to cover the expenses of at least the first term.

Board and lodging can frequently be had in exchange for three hours of household work daily. Opportunities also exist for obtaining employment on an hourly basis in the following fields: typing and stenography, clerical work, housework, care of children, general manual labor, etc. A student qualified to do tutoring and other specialized types of work can occasionally find employment on a remunerative basis.

Through its full-time placement service, the Bureau of Occupations recommends graduates and students for positions in fields other than teaching or educational research. This service is available to students when they leave the University or if they desire an improvement in their employment situation after having had some experience.

Office of the Appointment Secretary. The Appointment Secretary 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 registered candidate for the clerical services of this office. Communications should be addressed to the Manager of the Bureau of Guidance and Placement, 123 Education Building, University of California, Los Angeles, California.

UNDERGRADUATE SCHOLARSHIPS

The Committee on Scholarships of the University of California at Los Angeles recommends annually for award a limited number of scholarships to undergraduate students in residence on the Los Angeles campus. Because of the limited number of scholarships available, the Committee must restrict the awards to students who have been in attendance at least one term (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 Registrar on or before March 25 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.

The Registrar will, upon request, supply detailed information concerning scholarships and the necessary forms of application.

Awards of scholarships for the coming academic year have already been made; therefore none is available for 1943-1944.

Alumni Freshman Scholarships

The California Alumni Association makes available each year a certain number of scholarships to entering freshmen. These Alumni Freshman Scholarships consist of cash awards of varying amounts for freshmen who enroll on any of the three campuses. Candidates for the Alumni Freshman Scholarships may receive information by writing to the Executive Manager, California Alumni Association, 301 Stephens Union, University of California, Berkeley. Applications must be on file on or before February 15 in any one year. Awards for 1943-1944 have already been made.

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

LOANS

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

PRIZES

The generosity of alumni and friends of the University also provides each year for competitive prizes and awards in several fields. A complete list of available prizes, together with the regulations governing each competition, may be had from the Registrar.

UNIVERSITY CURRICULA

COLLEGE OF LETTERS AND SCIENCE

The largest college within the University is the College of Letters and Science, which offers majors leading to the degree of Bachelor of Arts in the following fields:

Anthropology	Geography	Philosophy
Astronomy	Geology	Physics
Bacteriology	German	Physics-Meteorology
Botany	Greek	Political Science
Chemistry	History	Psychology
Economics	Latin	Sociology
English	Mathematics	Spanish
French	Music	Zoology

In addition to the above-listed major fields, the College offers curricula covering work in more than one department in the fields of American culture and institutions, applied physics, international relations, medical technology (with a major in bacteriology), and public service. The student may also take a "general major" if he does not wish to specialize in any one field. Because of its flexibility, the general major appeals especially to students who are working toward teaching credentials or toward such professional objectives as law and journalism, as well as to those who desire a broad general cultural background.

Courses in the College of Letters and Science at Los Angeles also give the necessary preparation for admission to various academic and professional curricula, which may be carried to completion in the colleges or schools of the University at Berkeley or San Francisco. These curricula include chemistry, dentistry, law, librarianship, and medicine.

Detailed information about the lower division requirements in the College of Letters and Science leading to the degree of Associate in Arts, and about the requirements and curricula for the Bachelor of Arts degree will be found in the ANNOUNCEMENT OF THE COLLEGE OF LETTERS AND SCIENCE. A copy of this bulletin will be sent, upon request, by the Registrar, or the Dean, College of Letters and Science, University of California, Los Angeles, California.

Meteorology

The work in meteorology is offered for the duration in special sessions to which may be admitted only students sent by the Armed Forces or by other government services. This limitation is imposed because all University facilities in this field of instruction are needed in the war program.

COLLEGE OF BUSINESS ADMINISTRATION

The College of Business Administration is a professional college of the University of California and offers majors in accounting, banking and finance, marketing, management and industry, office management, and in general busi-

ness. The completion of the lower division requirements leads to the degree of Associate in Arts, and completion of the regular four-year curriculum to the degree of Bachelor of Science.

The purpose of the College is to give the student a well-balanced introduction to a professional career in business through the study of business subjects and the solution of illustrative problems. This introduction should assist him to adapt himself more easily to the requirements of business and to understand the place that business fills in modern economic life. Through the study of practical problems the student is given an appreciation of business realities, and through the opportunity afforded him to visit various types of organizations, he gets first-hand information about going concerns.

In general, the best preparation for the curriculum of the College of Business Administration is to be found in the standard high school courses in English, mathematics, history, civics, chemistry, and foreign language, or in the equivalent training outside of high school. The student who intends to enter the College of Business Administration is urged not to emphasize vocational courses in his preparatory program, but to seek a broad foundation upon which later specialization may be built. The study of chemistry, physics, and foreign language in high school is particularly recommended. These subjects will prove valuable not only in the preparation for the business curriculum, but their completion will release the student from a part of the lower division requirements in the College and thereby increase his opportunity for elective study in the freshman and sophomore years. The curriculum of the College of Business Administration contains a prescribed course for which algebra is prerequisite, and the necessary foundation for this work must be obtained in high school.

In the ANNOUNCEMENT OF THE COLLEGE OF BUSINESS ADMINISTRATION, which may be obtained from the Dean of the College or from the Registrar, complete information about the fields of specialization and the requirements for the Associate in Arts and B.S. degrees will be found.

COLLEGE OF APPLIED ARTS

The College of Applied Arts was established to meet a demand for curricula of a specialized character which have to a considerable extent technical or professional appeal, and to maintain and develop certain curricula leading to special secondary teaching credentials.

The College offers four-year curricula in art, drama, and music, leading to the degree of Bachelor of Arts; and curricula in dance, home economics, mechanic arts, and physical education, leading to the degree of Bachelor of Science. For properly qualified graduate nurses, a curriculum is also offered in public health nursing, leading to the Bachelor of Science degree and the Certificate in Public Health Nursing. In all these curricula, except dance, drama, and public health nursing, the Special Secondary Teaching Credential

may be obtained by following closely the regulations laid down by the School of Education. It is possible, however, to obtain the bachelor's degree without working for the teaching credential.

Courses in the College of Applied Arts also provide the necessary preparation for admission to various academic and professional colleges and schools of the University in Berkeley and in San Francisco. These curricula include engineering, mining, nursing, optometry, and pharmacy.

In addition to the subjects required for admission to the University, as outlined on page 9, certain preparatory subjects are recommended for each curriculum or major in the College of Applied Arts, which, if included in the high school program, will give the student a more adequate background for his chosen field of study. Detailed information about these recommended subjects and the requirements for the degree of Associate in Arts, which comprise the studies of the freshman and sophomore years and are prerequisite to upper division work in the College, will be found in the ANNOUNCEMENT OF THE COLLEGE OF APPLIED ARTS. This bulletin may be obtained by addressing the Dean, College of Applied Arts, or the Registrar, University of California, Los Angeles, California.

Engineering

The attention of prospective engineering students is directed to the fact that the first two years of curricula in agricultural, civil, electrical, mechanical, and mining engineering are offered on the Los Angeles campus. The advanced work is available only at Berkeley.

COLLEGE OF AGRICULTURE

The Los Angeles campus of the University is the center for instruction in general horticulture as it relates to subtropical fruits, ornamental plant materials, and flower crops. The laboratory and classroom facilities are modern and efficient.

Forty-six acres on the campus have been allocated to the College of Agriculture, consisting of a 16-acre subtropical horticulture area and a 30-acre ornamental horticulture area. The latter was provided for the purpose of developing instruction and research in floriculture and ornamental horticulture. On the subtropical horticulture area a laboratory orchard has been developed which consists of collections and demonstrations of many kinds of fruits, and a small nursery and complete propagation unit have been established.

Horticulture is at present the only major in agriculture that can be completed in its entirety on the Los Angeles campus of the University, and has recently been expanded to include courses in floriculture and ornamental horticulture. There are also supporting courses such as entomology, irrigation, soil science, plant pathology, and agricultural economics, as well as all the basic courses in other departments which are required in the agricultural curricula. This makes it possible for the student whose agricultural major is given either

at Berkeley or Davis to enroll for at least one-year, and in most instances, two years at Los Angeles before transferring to complete the work of his major.

The PROSPECTUS OF THE COLLEGE OF AGRICULTURE, which may be obtained from the Registrar, or the Dean, College of Agriculture, gives complete information about all agricultural curricula and about the requirements for the Bachelor of Science degree.

SCHOOL OF EDUCATION

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

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

Detailed information about curricula, requirements, and procedures in the School of Education are contained in the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION, LOS ANGELES. Although enrollment in the curricula of the School is contingent upon the attainment of full junior standing, representatives of the School will be glad to advise interested students concerning the most effective preparation for various teaching fields, during their freshman and sophomore years. Students are urged to seek such advice as early as possible in their academic careers.

ANNOUNCEMENT OF COURSES FOR THE SUMMER AND FALL TERMS, 1943

The course offerings listed in this ANNOUNCEMENT are subject to change without notice, because of war conditions.

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 term, 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 summer term, and II for the fall term. A course given throughout the period July to February is designated: Yr. The assignment of hours is made in the SCHEDULE OF CLASSES AND DIRECTORY to be obtained at the time of registration.

Year courses. A course given in a period of two terms is designated by a double number. Economics 1A-1B is an example. Each half of the course constitutes a term'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 term. Unless otherwise noted, the student may take the first half only and receive final credit for it.

AGRICULTURE

Letters and Science List.—Agricultural Economics 3, 104, Entomology 1, 134, Plant Pathology 120, Soil Science 110. For regulations governing this list see the CIRCULAR OF INFORMATION.

Upper Division Courses.—All upper division courses announced by this department presuppose at least junior standing in the College of Agriculture. Juniors and seniors in other colleges may elect such courses in the Department of Agriculture as they are qualified to pursue.

Preparation for the Major in Horticulture.—Horticulture 2 and 10 or the equivalent, and the requirements in the Plant Science Curriculum (see the CIRCULAR OF INFORMATION, or the PROSPECTUS OF THE COLLEGE OF AGRICULTURE).

The Major in Horticulture.—Twelve units of upper division courses. Inclusion of Horticulture 100, 101, and 102 is recommended for those who plan to specialize in fruit culture.

Preparation for Other Majors or Curricula.—See the PROSPECTUS OF THE COLLEGE OF AGRICULTURE and consult the appropriate advisers for students in Agriculture.

Laboratory Fees.—Horticulture 100, \$3.50.

AGRICULTURAL ECONOMICS

LOWER DIVISION COURSE

†3. Agricultural Background of American Civilization. (2) II.

The character of American agriculture; its evolution from pioneer life to modern industry; principal types; European background; technology on the farm; population and migration; rural and urban relationships; economic and social problems; agrarian movements and governmental activities.

UPPER DIVISION COURSES

101A. Principles of Marketing Agricultural Products. (3) II.

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.

104. Agricultural Economics. (3) II.

Prerequisite: Economics 1A-1B.

A study of the application of the principles of economics to the problems of agricultural production.

118. Farm Management: Business Organization. (3) II.

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

† To be given if a sufficient number of students enroll.

ENTOMOLOGY

UPPER DIVISION COURSES

†134. **Insects Affecting Subtropical Fruit Plants.** (4) II.

Lectures, two hours; laboratory, six hours. Recommended preparation: Zoölogy 1, Entomology 1.

Specialized study of the biology, damage caused by, and control of the more important insects affecting citrus and other subtropical fruit plants.

199A-199B. **Special Study for Advanced Undergraduates.** (2-4; 2-4) Yr.

Prerequisite: senior standing and the consent of the instructor.

HORTICULTURE

LOWER DIVISION COURSES

†2. **Elements of Fruit Production.** (3) I, II.

Prerequisite: Botany 1A-1B or equivalent. This course is equivalent to Pomology 2A, given at Berkeley and at Davis.

The principles and practices of fruit growing, with special reference to subtropical regions. The climatic, soil, and moisture requirements and adaptations of fruit trees; selection of site, propagation, planting, orchard management practices, harvesting, and preparation for market.

†10. **Plant Propagation.** (2) II.

Laboratory, six hours. Prerequisite: Botany 1A-1B and course 2, or the equivalent.

The principles of plant propagation, with special reference to horticultural plants.

UPPER DIVISION COURSES

100. **Systematic Pomology.** (4) II.

Lectures, two hours; laboratory, six hours. Prerequisite: course 2, or the equivalent. Fee, \$3.50.

The botanical classification and relationships of the principal fruits; horticultural races and groups; growth and bearing habits; bud and fruit morphology; varietal characters.

†104. **Advanced Horticulture.** (3) I, II.

Lectures and discussions, three hours. Prerequisite: course 2 or the equivalent, Botany 7 or the equivalent, course 100, and course 102.

An analysis of the knowledge concerning the responses of fruit trees to environmental and cultural influences, with special reference to subtropical regions.

†107. **Minor Subtropicals and Hardy Tropicals.** (2) I, II.

Lectures, two hours; one Saturday field exercise. Prerequisite: course 2 or the equivalent; course 100 recommended. Offered alternately with course 102.

A survey of the knowledge concerning the requirements and responses of the minor subtropical fruit plants and the hardy tropicals. The fruits considered will include the pomegranate, tuna or prickly pear, passion fruit or granadilla, loquat, cherimoya, guava, jujube, white sapote, feijoa, pistachio, macadamia, carob, litchi, mango, and papaya.

† To be given if a sufficient number of students enroll.

†112. Fruit Physiology and Storage Problems. (2) II.

Lectures and discussions, two hours. Prerequisite: the consent of the instructor.

Ripening processes of fruit on the tree; maturity standards and tests; ripening and respiration as affected by ethylene gas treatment; chemical and physiological changes at low temperatures; cold storage and refrigerated gas storage; role of volatile substances; differences in species and varietal responses.

131A-131B. Taxonomic Classification and Ecology of Ornamental Plants. (3-3) Beginning II only.

Lectures, two hours; laboratory, three hours. Prerequisite: courses 2 and 10, or the equivalent (course 10 may be taken concurrently).

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.

Lectures, two hours; laboratory, six hours. Prerequisite: Botany 1A-1B, and courses 2 and 10, or the equivalents.

Principles and practices of general floriculture, with special reference to the more important flower crops grown in California.

141. Plant Cytogenetics. (4) I.

Lectures, two hours; laboratory, six hours. Prerequisite: Zoölogy 130 and 131 or Genetics 100 (Berkeley or Davis), or the equivalent.

Selected topics in cytology, with special reference to their bearing on genetics and plant breeding.

199A-199B. Special Study for Advanced Undergraduates. (2-4; 2-4) Yr.

Prerequisite: senior standing and the consent of the instructor.

GRADUATE COURSES**†255A-255B. Seminar in Horticulture. (1-1) Yr.****281A-281B. Research in Horticulture. (1-6; 1-6) Yr.****IRRIGATION****UPPER DIVISION COURSES****†110. Principles of Irrigation. (4) I, II.**

Lectures, three hours; laboratory, three hours. Prerequisite: Physics 2A-2B or the equivalent.

Irrigation as a factor in agriculture; effect of soil characteristics upon the movement and storage of water; the availability of soil moisture to plant growth; development of the farm irrigation water supply. To fill a need of subtropical horticulture majors, some time is spent on the study of the origin, evolution, characteristics, classification, and conservation of soils.

199A-199B. Special Study for Advanced Undergraduates. (2-4; 2-4) Yr.

Prerequisite: senior standing and the consent of the instructor.

† To be given if a sufficient number of students enroll.

PLANT PATHOLOGY**UPPER DIVISION COURSES****†130. Diseases of Subtropical Fruit Plants. (4) I, II.**

Lectures, three hours; laboratory, three hours. Prerequisite: Botany 1A-1B or the equivalent, and Bacteriology I; 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 the consent of the instructor.

SOIL SCIENCE**UPPER DIVISION COURSES****†110. The Soil as a Medium of Plant Growth. (4) II.**

Lectures, three hours; one additional period to be arranged. Prerequisite: Chemistry 1A-1B, 8.

Nutritional requirements of plants; studies of the absorption of mineral elements by plants, and related processes; chemical composition of soils; current views of the soil solution and of base exchange; factors determining productivity of soils; soil and plant interrelations.

199A-199B. Special Study for Advanced Undergraduates. (2-4; 2-4) Yr.

† To be given if a sufficient number of students enroll.

ANTHROPOLOGY AND SOCIOLOGY

Letters and Science List.—All undergraduate courses in anthropology and sociology are included in the Letters and Science List of Courses. For regulations concerning this list, see the CIRCULAR OF INFORMATION.

MAJOR IN ANTHROPOLOGY

Preparation for the Major.—Required: Anthropology 1A–1B and at least 6 units chosen from a list of approved courses. Copies of this list may be obtained from the adviser or from the chairman of the department.

The Major.—Courses 101A–101B, 105, and 9 units chosen from upper division courses in anthropology; and 6 additional units which may be chosen from upper division courses in anthropology or sociology, or from an approved list of related courses in other departments. Copies of this list may be obtained from the adviser or from the chairman of the department.

MAJOR IN SOCIOLOGY

Preparation for the Major.—Required: Sociology 30A–30B, Economics 40 or 142 or Statistics 1 (taken either in lower or upper division), and at least 6 units of courses in other departments selected from a recommended list in accordance with the student's proposed field of specialization. Copies of this list should be obtained from the faculty adviser.

The Major.—Twenty-four upper division units; 6 to 9 units of courses in other departments will be accepted toward completion of the major. A list of such courses, which are prescribed in accordance with various fields of specialization, should be obtained from the faculty adviser.

Graduate Work.—The master's degree in anthropology and sociology is offered with a concentration in one discipline. The department will follow Plan II, Comprehensive Examination. For details of requirements for the examination consult the departmental adviser.

Social Welfare.—The University of California at Los Angeles offers no graduate professional training in social welfare. Students interested in this type of training are referred to the Department of Social Welfare at Berkeley. The major in sociology may be offered in satisfaction of the entrance prerequisites of the Department of Social Welfare at Berkeley and other approved schools of social work. Specified courses in other departments are also required for those wishing preprofessional training in social welfare. A list of such courses may be secured from the faculty adviser.

ANTHROPOLOGY

LOWER DIVISION COURSES

1A. General Anthropology. (3) I.

Origin, antiquity, and races of man; physical anthropology; race problems; current racial theories.

1B. General Anthropology. (3) II.

Origin and growth of culture. Problems in invention, material culture, social institutions, religion, language.

UPPER DIVISION COURSES

Courses 1A, 1B or the equivalent are prerequisite to all upper division courses, except for majors in economics, geography, history, political science, psychology, or sociology.

101A-101B. World Ethnography. (3-3) Yr.

A descriptive survey of representative primitive cultures, including backward people of civilized countries.

103. Culture History. (3) II.

A general survey of the origin and development of early civilizations of the Old World: Europe, Asia, Africa, Oceania.

105. The American Indian. (3) I.

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

125. Comparative Society. (3) I.

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.

199A-199B. Special Problems in Anthropology. (2-2) Yr.

Prerequisite: six units of upper division anthropology, and the consent of the instructor.

GRADUATE COURSES**252A-252B. Theory and Method of Anthropology; Seminar. (2-2) Yr.****†256A-256B. Primitive Social Institutions; Seminar. (2-2) Yr.****SOCIOLOGY****LOWER DIVISION COURSE****30A-30B. Social Institutions. (3-3) Yr.**

This course or its equivalent is prerequisite for admission to upper division courses in sociology. Students presenting credit for another elementary course in sociology may, by special permission, take 30A-30B for credit also.

The social institutional order; the originating factors, functions and problems of marriage, the family, government, and other institutions.

UPPER DIVISION COURSES

Course 30A-30B or its equivalent is a prerequisite to all upper division courses in sociology except 142.

120. Social Maladjustment. (3) I, II.

Selected problems in social and societal maladjustment.

142. Marriage and the Family. (3) I.

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

143. Urban Sociology. (3) II.

Urban and rural cultures; the characteristics of cities in western civilization with emphasis on the American metropolis.

† To be given if a sufficient number of students enroll.

181. Care of Dependents. (2) II.

Prerequisite: course 120.

Various types of dependency analyzed from the standpoint of social isolation and social control.

182. The Sociology of Crime. (2) I.

Prerequisite: course 120.

Varieties and theories of crime and punishment in contemporary and other societies; criminal behavior systems.

189. Race and Culture. (2) II.

Prerequisite: senior standing.

The contact and interaction of races and cultures in the modern world, with particular reference to social consequences of amalgamation, hybridization, cultural assimilation, conflict, accommodation.

199A-199B. Special Problems in Sociology. (2-2) Yr.

Prerequisite: six units of upper division sociology taken in the University with at least a B average, and the consent of the instructor.

Contemporary sociological theories and research methods; theoretical or field investigation of a special phenomenon or problem.

GRADUATE COURSE**249A-249B. American Cultural Minorities. (2-2) Yr.**

ART

College of Applied Arts

Preparation for the Major.—Courses 1A-1B, 2A, 2B, 4A, 4B, 14A, 14B, 32A-32B, and four units chosen from the following: 15, 21A, 21B, 22, 48.

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

(1) *Curriculum in Appreciation and History.*

Courses 101A, 101B, 121A-121B, 131A, 131B, 144A, 144B, 161A-161B, 174A-174B; and 12 units to be approved by the departmental adviser.

(2) *Curriculum in Painting or Commercial Art.*

Courses 121A-121B, 134A-134B, 135, 144A, 144B, 164A-164B, 165A, 174A-174B; and 12 units to be approved by the departmental adviser selected from 101B, 131A, 131B, 161A-161B, 165B, 182A-182B, 183A-183B, 199A-199B.

(3) *Curriculum in Industrial Design.*

Courses 101A, 117A-117B, 121A-121B, 127A-127B, 132A-132B, 147A, 147B, 156A, 177; and 10 units to be approved by the departmental adviser.

(4) *Curriculum in Interior Decoration and Costume Design.*

Courses 101A, 101B, 121A-121B, 156A, 156B, 173, 183A-183B, 186A, 186B; and 14 units to be approved by the departmental adviser, selected from 117A, 127A, 132A-132B, 147A, 164A-164B, 174A-174B; Home Economics 108, 164A, 175; Business Administration 180, 186; Mechanic Arts 101.

(5) *Curriculum in Teaching of Art.*

Courses 117A, 121A-121B, 127A, 132A, 147A, 156A, 165A, 168A, 173 or 183, 174A, 180; and 12 units from one of the above curricula to be approved by the departmental adviser.

College of Letters and Science

Programs for the General Major.—Two programs are offered in partial satisfaction of the requirements for the general major:

(A) *History and Appreciation of Art*; lower division preparation, courses 1A, 2A, 2B, 4B, 32B; the major, 12 to 15 units chosen from courses 121A-121B, 131A-131B, 161A-161B.

(B) *Painting*; lower division preparation, courses 2A, 4A, 4B, 14A, 32B; the major, 12 to 15 units chosen from courses 134A-134B, 144A-144B, 164A-164B, 174A-174B.

Letters and Science List.—Courses 1A-1B, 2A, 2B, 4A, 4B, 21, 32A-32B, 42, 121A-121B, 131A, 131B, 134A-134B, 144A, 144B, 161A-161B, 164A-164B, and 174A-174B are included in the Letters and Science List of Courses. For regulations governing this list, see the CIRCULAR OF INFORMATION. A major in art is not offered in the College of Letters and Science.

Laboratory Fees.—Courses 27A, 27B, 117A, 117B, 144B, 147A, 182A-182B, 330, \$2.50; 164A-164B, \$4.50.

LOWER DIVISION COURSES

1A-1B. *Art and Civilization.* (2-2) Yr.

The origin and function of the arts and their practical relation to contemporary civilization.

2A. Art Structure. (2) I, II.

Fundamental course in creative design and color theory.

2B. Art Structure. (2) I, II.

Prerequisite: course 2A.

Basic study of the elements of art as related to two-dimensional decorative design, applicable to industrial techniques and processes.

4A. Drawing. (2) I, II.

The application of free and mechanical perspective to the problems of drawing and industrial design.

4B. Drawing. (2) I, II.

Prerequisite: course 4A.

Objective drawing of natural forms from observation and memory.

14A. Water-color Painting. (2) I.

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

Still life; the study of water-color techniques; observation of color as related to form, light, and space.

14B. Water-color Painting. (2) II.

Prerequisite: course 14A.

Development of techniques as related to industrial design, costume, and interior decoration.

15. Lettering. (2) I, II.

Prerequisite: courses 1A, 2B.

The design of lettering; composition using type forms; simple problems in layout.

21A. Costume. (2) I.

Lectures and demonstrations.

Appreciative study of modern dress.

21B. House Furnishing. (2) II.

Lectures and demonstrations.

Appreciative study of modern house furnishing.

22. Design in Three Dimensions. (2) I, II.

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

The fundamental processes of the major crafts; principles of design as related to three-dimensional form; experiments in the use of plastic materials in abstract composition.

27A. Minor Crafts. (2) I, II.

Fee, \$2.50.

A course designed to meet the needs of recreational workers, occupational therapists, social workers, and others interested in handcraft.

27B. Crafts Workshop. (2) I, II.

Fee, \$2.50.

A continuation of course 27A; crafts involving floor equipment.

32A-32B. Design in Painting. (2-2) Beginning either term.

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

The development of the ability to compose imaginatively with line, space, and color.

42. Introduction to Art. (3) I, II.

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.

48. Art of the Theater. (2) I, II.

The visual art of the theater; use of materials and equipment of the modern stage.

UPPER DIVISION COURSES

101A. History of Furniture. (2) I.

The history of furniture from ancient to modern times.

101B. History of Costume. (2) II.

The history of costume from ancient to modern times.

117A-117B. Ceramics. (2-2) Yr.

Prerequisite: course 22. Fee, \$2.50 a term.

Pottery, related to art and industry.

†121A-121B. Survey of the History of Art. (2-2) Yr.

Prerequisite: course 1A.

A critical study of important phases in the development of Western art after 1500.

127A-127B. Bookbinding. (2-2) Yr.

Practical work in bookbinding, using various types of book construction and binding materials.

†131A. Art Epochs: Gothic and Renaissance. (2) I.

†131B. Art Epochs: Romantic and Modern. (2) II.

132A-132B. Design in Industry. (2-2) Yr.

Prerequisite: course 14B.

Study of materials, processes and functions of the art industries, leading to original design.

134A-134B. Landscape Painting. (2-2) Yr.

Prerequisite: course 32B.

The development of personal vision and individual expression as applied to landscape painting. Survey of modern and traditional schools.

135. Book Illustration. (2) II.

Prerequisite: courses 144A, 164A.

Pen and ink, wood engraving, and color.

† To be given if a sufficient number of students enroll.

144A. Oil Painting. (2) I.

Prerequisite: course 32B.

The techniques of oil painting; development of perception and understanding of the essential qualities of form, light, color, and their integration in painting.

144B. Oil Painting. (2) II.

Prerequisite: course 144A. Fee, \$2.50.

A continuation of course 144A.

147A. Weaving. (2) I.

Prerequisite: course 22. Fee, \$2.50.

History and development of weaving; experience with techniques and processes.

147B. Weaving. (2) II.

Prerequisite: course 147A.

A continuation of course 147A.

155. Publicity and Propaganda. (2) I.**156A. Interior Decoration. (2) I, II.**

Lectures, laboratory, and demonstrations. Prerequisite: course 21B.

The consideration of the home as a unit; the arrangement of garden, house, floor plan, and furniture as functional and decorative problems.

156B. Interior Decoration. (2) I, II.

Prerequisite: course 156A.

The study of the historical periods in relation to interior decoration; adaptation and original design.

†161A-161B. Oriental Art. (2-2) Yr.

Prerequisite: course 1A and the consent of the instructor.

Selected problems from phases of Oriental art.

164A-164B. Life Drawing. (2-2) Yr.

Fee, \$4.50 a term.

Objective drawing and expressive interpretation of the human figure; its use in original composition.

165A. Advertising Illustration. (2) I.

Prerequisite: courses 15, 32B.

Design for advertising; emphasis upon type forms and composition; posters, booklets, layouts, etc.

165B. Advertising Illustration. (2) II.

Prerequisite: course 165A.

Psychological factors in design and their relationship to merchandising.

168A. Design for Theater Productions. (2) I, II.

Prerequisite: course 48.

The use of form, space, and color in the theater terms, and the employment of historical material.

† To be given if a sufficient number of students enroll.

168B. Supervision of Theater Productions. (2) I, II.

Prerequisite: course 168A.

A practical course in supervision and organization with experience in design and execution of actual productions.

173. Costume of the Theater. (2) I.

The decorative, historical, and psychological aspects of creative costume.

174A-174B. Painting: Mediums and Techniques. (2-2) Yr.

Prerequisite: senior standing.

Further experience in coördinating all the factors entering into a painting, and a technical study of methods and materials.

180. Theory and Philosophy of Art Education. (2) II.

Economic and social significance of aesthetic development. A comparative study of existing theories and practices.

182A-182B. Design in Sculpture. (2-2) Yr.

Prerequisite: courses 22, 164A-164B. Fee, \$2.50 a term.

Problems in creative expression; modeling of figures in terra cotta; portraiture.

183A-183B. Modern Costume. (2-2) Yr.

Prerequisite: course 21A.

186A. Advanced Interior Decoration. (2) I.

Prerequisite: course 156B.

The study of color harmonies and form arrangements; the influence of fashion in interior decoration.

186B. Advanced Interior Decoration. (2) II.

Prerequisite: course 186A.

The technique of interior decoration; shop practice through actual problems in interior design in stores and homes.

199A-199B. Special Studies for Advanced Students. (1-4; 1-4) Yr.

Prerequisite: senior standing, an average grade of B or higher in courses in art, and the consent of the instructor.

Advanced individual work upon specific problems connected with art and education.

GRADUATE COURSES

†271A-271B. Advanced History of Art: Seminar. (2-2) Yr.**299A-299B. Special Studies for Advanced Students. (1-6; 1-6) Yr.**

PROFESSIONAL COURSES IN METHOD

330. Industrial Arts for the Elementary School. (3) I, II.

Fee, \$2.50.

370A. Principles of Art Education. (2) I, II.

A study of objectives, child growth and development; general educational principles as related to art education.

370B. Principles of Art Education. (2) I, II.

A study of method and the curriculum in art education.

† To be given if a sufficient number of students enroll.

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 the CIRCULAR OF INFORMATION.

Preparation for the Major.—Required: general astronomy and practice in observing (Astronomy 7A–7B and 2); general physics (Physics 1A–1B–1C–1D or, in exceptional cases, Physics 2A–2B); plane trigonometry, plane analytic geometry, and differential and integral calculus (Mathematics CF, 3A, 3B, and 4A); and first-year English (English 1A–1B). Recommended: Public Speaking 1A–1B and a reading knowledge of at least one modern foreign language.

The Major.—At least 18 upper division units of astronomy, and as many more upper division units as are required to total 24, selected from courses in astronomy, physics, or mathematics, all subject to the approval of the Department of Astronomy.

LOWER DIVISION COURSES

There are two courses in general elementary astronomy, namely, a term course, Astronomy 1, without prerequisites, and a year course, Astronomy 7A–7B, with prerequisites in physics and mathematics. Students, particularly those majoring, or intending to major, in a physical science or mathematics, who have the prerequisites for Astronomy 7A–7B, are advised to take that course rather than Astronomy 1, which is not open to students who have had Astronomy 7A or 7B.

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

Lectures, three hours; discussion section, one hour.

The general principles and the fundamental facts of astronomy, with particular emphasis on the solar system.

†2. Practice in Observing. (1) II.

Prerequisite: course 1 and plane trigonometry, or credit or registration in course 7A or 7B.

Practical work for beginners, including constellation studies, telescopic observations of celestial objects, laboratory exercises cognate to the material of courses 1 and 7A–7B, and regularly scheduled excursions to the neighboring observatories and planetarium.

3. Practical Astronomy for Engineering Students. (1) II.

Prerequisite: Civil Engineering 1FA and credit or registration in Civil Engineering 1FB.

A course for students of civil engineering; 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.

7A–7B. General Astronomy. (3–3) Beginning II only.

Prerequisite or concurrent: a college course in physics and Mathematics 3A. Course 7B may be taken before 7A. Course 2 may be elected for observational and laboratory work in connection with this course, which is de-

† To be given if a sufficient number of students enroll.

signed especially for students majoring, or intending to major, in a physical science or mathematics, and is required of those preparing to major in astronomy.

The general principles and the fundamental facts of astronomy in all of its branches, with special emphasis on the solar system, developed and discussed in detail.

12. Celestial Navigation. (3) I, II.

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.

15. Spherical Astronomy for Navigation Students. (3) I, II.

Prerequisite: two years of high school algebra, or Mathematics 8, and plane trigonometry (Mathematics 6F or its equivalent).

A course in the fundamentals of spherical astronomy, designed especially for students of sea and air navigation, including spherical trigonometry and its applications to the coördinates on the Earth and the celestial sphere; time; the correction of observations; the use of star maps and almanacs; and computing.

UPPER DIVISION COURSES

Lower division courses in astronomy are not prerequisite to upper division courses unless specified.

107. The Reduction of Observations. (3) I.

Prerequisite: Mathematics 3B-4A.

Analytical, arithmetical, and graphical methods employed in the handling of numerical and observational data, including the theory of errors and least squares and its application to the solution of astronomical, physical, chemical, and engineering problems.

†108. Interpolation. (3) II.

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.

†118. Meteoritics. (3) II.

Open to students whose major subject is some physical science, particularly astronomy, geology, or chemistry.

The science of meteorites and meteors.

199. Special Studies in Astronomy or Astrophysics. (1 to 4) I, II.

Prerequisite: the consent of the instructor. Sec. 2, "Special Studies in Astrophysics," is acceptable in partial fulfillment of the requirements of the major in physics.

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

† To be given if a sufficient number of students enroll.

BACTERIOLOGY

Letters and Science List.—All undergraduate courses in bacteriology and public health are included in the Letters and Science List of Courses. For regulations governing this list, see the CIRCULAR OF INFORMATION.

Preparation for the Major.—Bacteriology 1, Chemistry 1A-1B, Zoölogy 15, Botany 1A or 1B, Physics 2A-2B, French or German. Recommended: Chemistry 6A, 8; Zoölogy 4.

The Major.—Bacteriology 103, either 105 or 106, 106C; also 16 units of upper division work in related subjects, these to be selected from the following series: Bacteriology 104, 105, 106, 106C, 107; Public Health 101A, 101B; Botany 105A, 119, 126, 127, 191A, 191B; Zoölogy 101, 105, 106, 107, 107C, 111, 111C, 111H, 118; Chemistry 107, 107B, 108, 109A, 109B; Home Economics 159; Soil Science 110. Courses are to be chosen with the approval of the department.

Curriculum for Medical Technicians.—For details, see the ANNOUNCEMENT OF THE COLLEGE OF LETTERS AND SCIENCE, LOS ANGELES.

Curricula in Pre-Nursing and in Public Health Nursing. For details, see the ANNOUNCEMENT OF THE COLLEGE OF APPLIED ARTS.

Laboratory Fees.—Course 1, \$14.50; 103, \$17.50; 105, \$11.50; 106C, \$14.50; 107, \$8; 199A, 199B, \$9; Public Health Nursing 420, \$20.

LOWER DIVISION COURSES

1. Fundamental Bacteriology. (4) I, II.

Prerequisite: Chemistry 1A. Students who have credit for course 6 will receive only three units for course 1. Fee, \$14.50.

Early history of bacteriology; effects of physical and chemical agencies upon bacteria; biochemical activities of bacteria; the bacteriology of the air, water, soil, milk and dairy products, other foods; industrial applications. The laboratory exercises include an introduction to bacteriological technique.

6. General Bacteriology. (2) II.

Students who have credit for course 1 will receive only one unit for course 6.

A cultural course for nontechnical students.

UPPER DIVISION COURSES

103. Advanced Bacteriology. (4) II.

Prerequisite: course 1. Fee, \$17.50.

The more advanced principles of the life activities, growth, and morphology of bacteria. The etiology of disease.

105. Serology. (4) II.

Lecture, one hour; laboratory, nine hours. Prerequisite: course 103. Limited to twelve students. Fee, \$11.50.

The theory and practice of serological methods.

106. Metabolism of Bacteria. (2) I.

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; purefactions; protein sparing action; fermentations; bacterial photosynthesis; bacterial metabolic methods.

106C. Metabolism of Bacteria Laboratory. (2) I.

Prerequisite or concurrent: course 106. Fee, \$14.50.

107. Public Health Bacteriology. (4) I, II.

Lecture, one hour; laboratory, nine hours. Prerequisite: course 103. Designed for students who plan careers in the fields of public health and clinical bacteriology. Fee, \$8.

A study of diagnostic procedures.

195. Proseminar. (2) I, II.

Prerequisite: course 103.

Library problems.

199A-199B. Problems in Bacteriology (2 to 4 each term) Yr.

Prerequisite: the consent of the instructor. Fee, \$9 a term.

MICROBIOLOGY

GRADUATE COURSES

†210. Advanced Bacterial Physiology. (3) II.

Prerequisite: Bacteriology 106.

Physiological activities of microorganisms in the light of more advanced principles.

†251A-251B. Seminar in Microbiology. (2-2) Yr.

293A-293B. Research in Microbiology. (2-5; 2-5) Yr.

PUBLIC HEALTH

UPPER DIVISION COURSES

101A. Public Health and Preventive Medicine. (3) I.

Prerequisite: Bacteriology 1 or Zoölogy 1; or, for students in the Public Health Nursing Curriculum, the consent of the instructor.

Beginnings and backgrounds of medicine. Nature of infection and immunity. Discussion of the most important communicable diseases with special emphasis on their control and prevention.

101B. Public Health and Preventive Medicine. (3) II.

Prerequisite: Bacteriology 1 or Zoölogy 1; or, for students in the Public Health Nursing Curriculum, the consent of the instructor.

Development, organization and administration of public health; social trends of medicine; collection and interpretation of vital statistics; environmental sanitation; principles of epidemiology with some special control programs such as tuberculosis, venereal disease, mental hygiene, degenerative diseases.

† To be given if a sufficient number of students enroll.

PUBLIC HEALTH NURSING**LOWER DIVISION COURSE****11. Home Nursing. (1) I, II.**

Class discussion and laboratory. Students completing the course satisfactorily receive the American Red Cross Certificate.

Procedures of home nursing.

14. Volunteer Nurse's Aide Training. (1) Nine weeks in II.

Lecture and demonstrations, 12 hours total; laboratory, 24 hours total. Prerequisite: acceptance by American Red Cross. Limited to 20 students.

15. Volunteer Nurse's Aide Training Practice. (1) Nine weeks in II.

Supervised practice in designated local hospital wards, 40 hours total. Prerequisite: course 14. Students completing satisfactorily courses 14 and 15 receive the Red Cross Volunteer Nurse's Aide Certificate.

PROFESSIONAL COURSES**370. Supervised Teaching in Home Nursing. (1 to 4) I, II.**

Prerequisite: senior standing, course 401, and the consent of the instructor.

401. Methods of Teaching Home Nursing. (3) I, II.

Discussion, demonstration; student planning, presentation, and practice of methods of procedure of the Red Cross Home Nursing Course.

402. Family Case Work as Related to Public Health Nursing. (2) II.

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.

419. Administration and Organization of Public Health Nursing. (3) II.

The history and development of public health nursing to meet individual, family, and community health needs. The policies and trends in the organization of national, state, local, municipal, and rural public health nursing services; application of these policies to official and nonofficial agencies.

420. Field Experience in Public Health Nursing. (6) I, II.

Prerequisite: completion of the academic program for the Public Health Nursing Certificate. Sixteen weeks of continuous supervised field assignment with designated affiliating agencies of the Los Angeles vicinity. Students carry no outside work or other study during the field program. This period does not affect the residence requirement. Fee, \$20.

BOTANY

Letters and Science List.—All undergraduates courses in this department are included in the Letters and Science List of Courses. For regulations governing this list, see the CIRCULAR OF INFORMATION.

Preparation for the Major.—Botany 1A-1B, 6 and 7, Chemistry 1A-1B or 2A-2B, German 1, 2. In addition to these courses, certain phases of botanical work require Geology 3, 5, Physics 2A-2B, Bacteriology 1, and Zoölogy 1, 2.

The Major.—Seventeen units of upper division botany, including courses 105A-105B and 106A-106B; and in addition, 7 units in botany or related courses—bacteriology, chemistry, geology, paleontology, and zoölogy—to be chosen with the approval of the department.

Laboratory Fees.—Course 7, \$3.50; 6, 113, \$2.50.

LOWER DIVISION COURSES

1A. General Botany. (4) I, II.

Lectures, two hours; laboratory, four hours.

An introduction to the structure, functions, and environmental relations of the seed plants.

1B. General Botany. (4) II.

Lectures, two hours; laboratory, four hours. Prerequisite: course 1A.

The evolution of the plant kingdom, dealing with the comparative morphology of all the great plant groups.

6. Plant Anatomy. (3) I.

Lecture, one hour; laboratory, six hours. Prerequisite: course 1A. Fee, \$2.50.

The microscopic structure of the higher plants with particular reference to the development and differentiation of vegetative tissues.

7. Plant Physiology. (4) II.

Lecture, two hours; laboratory, six hours. Prerequisite: course 6, and chemistry. Fee, \$3.50.

Experimental work designed to demonstrate various activities of the plant.

UPPER DIVISION COURSES

Botany 1A, 1B are prerequisite to all upper division courses.

103. Botany of Economic Plants. (2) I.

Designed for students of economics, geography, agriculture, and botany.

The general morphology, classification, ecology and geographic distribution, origin, and uses of economic plants.

105A. Algae and Bryophytes. (4) I.

Lectures, two hours; laboratory, six hours.

A study of the structure, development, and phylogenetic relationships of the principal orders of fresh water and marine algae, and of liverworts and mosses.

105B. Morphology of Vascular Plants. (4) II.

Lectures, two hours; laboratory, six hours.

Structure, development, and phylogenetic relationships of the principal groups of pteridophytes and spermatophytes.

106A-106B. Angiosperms. (3-3) Yr.

Lecture, one hour; laboratory, six hours, and additional field work to be arranged. Designed for botany majors, teachers of nature study, and students in the College of Agriculture.

A survey of the chief orders and families of the flowering plants involving a study of their gross structure, phylogenetic classification, and geographical distribution.

113. Physiological Plant Anatomy. (3) II.

Lecture, one hour; laboratory, six hours. Prerequisite: courses 6 and 7. Fee, \$2.50.

A study of the tissues of the higher plants in relation to function; a survey of the visible structural and reserve materials of the plant body.

119. Mycology. (3) I.

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.

127. Technical Mycology. (4) II.

Lectures, two hours; laboratory, six hours. Prerequisite: course 1B and Bacteriology 1. Fee, \$2.50.

A study of the morphology, physiology, and taxonomy of the parasitic fungi of man, and of the fungi of technical importance in the arts and industries; designed for students in bacteriology, parasitology, and medicine.

152. Ecological Phytogeography. (3) II.

Lectures, two hours; laboratory and field, three hours. Prerequisite: course 106A-106B.

Field and laboratory studies of plant communities and their relation to the environment.

153A-153B. Advanced Systematic Botany. (2-2) Yr.

A systematic survey of the flowering plants by a comparison of the two principal schemes of relationship; origin of the group and concept of speciation.

191A. Molecular Structure of Biological Materials. (2) II.

Prerequisite: senior standing, or the consent of the instructor; Physics 2A-2B, Chemistry 8, and Botany 1A-1B or Zoology 1, 2, and in addition advanced courses in biological fields.

An adaptation of our knowledge of atomic and molecular structure to our biological conceptions of protoplasm and cell parts.

199A-199B. Problems in Botany. (2-2) Yr.

Prerequisite: senior standing.

GRADUATE COURSES

252A-252B. Seminar in Principles and Theories of Botany. (2-2) Yr.

253A-253B. Seminar in Special Fields of Botany. (1-1) Yr.

253C-253D. Second Seminar in Special Fields of Botany. (1-1) Yr.

278A-278B. Research in Botany. (2-6; 2-6) Yr.

BUSINESS ADMINISTRATION**College of Business Administration**

Preparation for the Major.—Business Administration 1A-1B, Economics 1A-1B, English 1A, Public Speaking 1A, Mathematics 8 and 2, Geography 5A-5B.

The Upper Division.

1. General requirements: (a) in the junior year, courses 18A-18B, 120, 140, 160A, 180, and Economics 135; (b) in the senior year, course 100.

2. Special elective: 3 units chosen from the following: courses 110, 116, 117, 132 (except for finance majors), 145, 154; Economics 131A-131B, 150, 170, 171, 173.

3. Nine upper division units in one of the following six majors: Accounting, Banking and Finance, Management and Industry, Marketing, Office Management, General Business.

Electives.—All undergraduate courses in the Letters and Science List (see the CIRCULAR OF INFORMATION), 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, 140, 145, 153, and 180. For regulations governing this list, see the CIRCULAR OF INFORMATION.

Fees.—Courses 3A, 3B, \$2.50; 140, \$3.50.

LOWER DIVISION COURSES

1A-1B. Principles of Accounting. (3-3) Beginning either term.

Two hours lecture, and two hours laboratory. Prerequisite: sophomore standing.

2A-2B. Accounting Laboratory. (1-1) Yr.

Should be taken concurrently with course 1A-1B.

3A-3B. Secretarial Training. (2-2) Beginning either term.

Fee, \$2.50 each term.

A study of typewriting in which the groundwork is laid for a thorough understanding of office management and business teaching problems. Principles of operating various kinds of typewriters, special adaptations of each, and bases of speed and accuracy development are included.

4A-4B. Secretarial Training. (3-3) Beginning either term.

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.

18A-18B. Business Law. (3-3) Yr.

Prerequisite: junior standing.

Law in its relationship to business. Essentials of the law of contracts, agency, bailments, sales, and negotiable instruments.

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.**

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.

120. Business Organization. (3) I, II.

A study of the business unit and its functions from the points of view of both society and management. The coordination of production, finance, marketing, personnel, and accounting in a going business. The relation of the enterprise to the industry in general, to the business cycle, to law and government, and to the public.

***121A. Industrial Management. (3) I.**

Prerequisite: course 120.

A study of the evolution and development of the industrial system. The application of scientific management and scientific methodology. A consideration of modern methods of approach to present-day production problems.

***121B. Industrial Management. (3) II.**

Prerequisite: course 121A. Classroom discussions and field trips; written reports and class discussions.

The theory and practice of modern factory management.

124. Work Simplification and Time Study. (2) II.

Prerequisite: courses 120 and 121A.

The specific procedures used in simplifying, standardizing, and timing manual work. Process and operation analysis, principles of motion economy, micromotion study and film analysis, time standards as a basis for wage payment plans and the calculation of costs, and fatigue study. Motion pictures are used in presenting case material.

***125. Organization and Management Problems. (3) I, II.**

Prerequisite: senior standing.

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) II.

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.

* Open only to students registered in College of Business Administration and to graduate students who have had the necessary preliminary preparation.

132. Investments. (3) I.

Prerequisite: Economics 135.

The principles underlying investment analysis and investment policy; the chief characteristics of civil and corporate obligations and stocks. Investment trusts and institutional investors, forms, problems, and policies. Relation of money markets and business cycles to investment practice.

140. Business Statistics. (4) I, II.

Lectures, two hours; laboratory, four hours. Students who have credit for Economics 40 will receive only one unit of credit for this course. Fee, \$3.50.

Sources of statistical data; construction of tables, charts, and graphs; study of statistical methods; averages, measures of deviation, index numbers, secular trend, seasonal variation, correlation; study of business cycles; practical application of statistical methods in business problems.

***144. Business and Statistical Research. (2) I.**

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) II.

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.**

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) II.**

Prerequisite: courses 3A-3B, 4A-4B.

A study of stenographic office problems, including the development of expert skill and ability in transcription. A consideration of the principles underlying the editing of dictated letters and reports and of the requirements and standards of stenographic positions in Civil Service as well as in various types of private offices.

†*152. Secretarial Problems. (3) II.

Prerequisite: course 151.

A study of non-stenographic office problems and their solutions, including those encountered in filing, preparing statistical reports, handling incoming and outgoing correspondence, and proofreading. A study of the rules of conduct affecting all office employees, and development of understanding of various types of office machines.

* Open only to students registered in College of Business Administration and to graduate students who have had the necessary preliminary preparation.

† To be given if a sufficient number of students enroll.

153. Personnel Management. (3) II.

A study of the administration of human relations in industry; the development of employment relations; problems and methods of selecting and placing personnel; problems and methods of labor maintenance; the joint control of industry; the criteria of effective personnel management.

***154. Office Organization and Management. (3) II.**

Analysis of functions of various office departments, their organization and management. Methods used in selecting and training office personnel; office planning and layout; selection and care of office supplies and equipment; methods and devices used to improve operating efficiency; types and uses of office appliances; techniques for performing office duties.

160A. Advanced Accounting. (3) I, II.

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) II.

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.**

Prerequisite: course 160A.

Distribution of department store expenses, general factory accounting, process costs, job-lot accounting, foundry accounting, budgets and control of costs, expense distributions, burden analyses, differential costs, by-products and joint-products, and standard costs.

***162. Auditing. (3) II.**

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.**

Prerequisite: course 160B.

A study of the current federal revenue acts as relating to income taxation, excess profits taxes, estate taxes, and individual, partnership, and corporation gift taxes.

†*165. Municipal and Governmental Accounting. (3) II.

Prerequisite: course 160B.

A study of fund accounting as applied to governmental accounting and non-profit institutions. It includes problems of budgeting, tax levies, appropriations, and accounting for revenues and expenditures. The following funds are included: general, special revenue, bond, sinking, working capital, special assessment, trust and agency, and utility. Special problems on nonprofit institutions.

* Open only to students registered in College of Business Administration and to graduate students who have had the necessary preliminary preparation.

† To be given if a sufficient number of students enroll.

180. Elements of Marketing. (3) I, II.

A survey designed to give a basic understanding of the major marketing methods, institutions, and practices. The problems of retailing, wholesaling, choosing channels of distribution, advertising, coöperative marketing, pricing, market analysis, and marketing costs are defined from the standpoint of the consumer, the middleman, and the manufacturer.

***184. Sales Management. (3) I.**

Prerequisite: course 180.

An intensive study, principally by the case method, of sales methods from the point of view of the sales manager. Includes the study of merchandising policy, choice of channels of distribution, market research and analysis, prices and credit terms, sales methods and campaigns; organization of sales department, management of sales force, and budgetary control of sales.

***185. Advertising Principles. (3) I, II.**

Prerequisite: course 180.

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 coördination.

***186. Retail Store Management. (3) II.**

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. (2-2) Yr.**

Prerequisite: senior standing, 6 units of upper division courses in business administration, and the consent of the instructor.

GRADUATE COURSE**290. Problems in Business Administration. (1 to 4), I, II.****PROFESSIONAL COURSES IN METHOD****†370A. Methods of Teaching Secretarial Subjects. (2) I.**

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.

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.

* Open only to students registered in College of Business Administration and to graduate students who have had the necessary preliminary preparation.

† To be given if a sufficient number of students enroll.

†370C. Methods of Teaching Handwriting. (2) I, II.

A course in the improvement of handwriting; a survey of methods of teaching handwriting in the secondary schools, including analyses of handwriting difficulties and study of clinical procedures.

†370D. Methods of Teaching Handwriting. (2) II.

Prerequisite: course 370C.

A course in the improvement of handwriting primarily for teachers of elementary subjects. A survey of methods of teaching penmanship and of relating writing to pupil activities at different levels of development.

† To be given if a sufficient number of students enroll.

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 the CIRCULAR OF INFORMATION.

Preparation for the Major.—Required: Chemistry 1A-1B, 6A, Physics 1A-1C, trigonometry, Mathematics 8, 3A-3B, 4A, English 1A, Public Speaking 1A or English 1B, and a reading knowledge of German. Recommended: an additional course in chemistry, Physics 1D, Mathematics 4B.

Students are warned that the lower division curriculum prescribed for the College of Chemistry at Berkeley does not meet the requirements for the degree of Associate in Arts in the College of Letters and Science at Los Angeles.

The Major.—A limited amount of upper division credit may be allowed for chemistry courses from the group 6A, 6B, 8, and 9, provided such courses were taken by the student while he was in the upper division. Not more than 9 units total of such credit will be counted as upper division units, either for the chemistry major or for other University curricula. The minimum requirement for the major is: Chemistry 6A-6B (6), 8 and 9 (6), 110A-110B (6), 111A-111B (4). The remainder of the 24 required upper division units are to be taken in chemistry, and not less than two courses are to be selected from the following group: courses 101, 103, 107A, 107B, and 121.

In order to be eligible for full membership in the American Chemical Society in the minimum time after graduation a chemistry major must fulfill the minimum requirements adopted by the Society for professional training of chemists. Special attention is directed to the fact that at least 6 units of lecture courses and 4 units of laboratory work are required in organic chemistry. Further details of the requirements are obtainable from department advisers.

Laboratory Fees.—These fees cover the cost of material and equipment used by the average careful student. Any excess over this amount will be charged to the individual responsible. The fees are as follows: Courses 1A, 1B, \$16; 2A, \$11.50; 6A, 6B, \$19.50; 9, \$31; 10, \$11.50; 101, \$31; 103, 107A, 107B, \$17.50; 108, \$7.50; 111A, 111B, \$14; 121, 199, \$17.50.

LOWER DIVISION COURSES

Certain combinations of courses involve limitations of total credit, as follows: 2A and 1A, 5 units; 2A-2B and 1A, 8 units; 2A and 1A-1B, 10 units; 2A-2B and 1A-1B, 10 units.

1A. General Chemistry. (5) I, II.

Lectures, three hours; laboratory and quiz, six hours. Prerequisite: high school chemistry, or its equivalent. Required in the Colleges of Agriculture,

Chemistry, Engineering, and of pre dental, premedical, premining, prepharmacy and preoptometry students; also of majors in applied physics, bacteriology, chemistry, geology and physics and of medical technicians, and of students in home economics (curriculum C) in the College of Applied Arts. Fee, \$16.

A basic course in principles of chemistry with special emphasis on chemical calculations.

1B. General Chemistry. (5) I, II.

Lectures, three hours; laboratory and quiz, six hours. Prerequisite: course 1A. Required in the same curricula as course 1A. Fee, \$16.

Continuation of course 1A with special applications to the theory and technique of qualitative analysis; periodic system; structure of matter.

2A. Introductory General Chemistry. (5) I.

Lectures and quizzes, four hours; laboratory, three hours. This course satisfies the chemistry requirements for nurses as prescribed by the California State Board of Nursing Examiners; it satisfies the chemistry requirements for the majors in physical education and is required of certain home economics majors in the College of Applied Arts. Fee, \$11.50.

An introductory course emphasizing the principles of chemistry and including a brief introduction to elementary organic chemistry.

6A. Quantitative Analysis. (3) I, II.

Lectures, discussions, and quizzes, two hours; laboratory, six hours. Prerequisite: course 1A-1B. Required of chemistry majors, economic geologists, petroleum engineers, sanitary and municipal engineers, medical technicians, and of premedical, College of Chemistry, metallurgy, and certain agriculture students. Fee, \$19.50.

Principles and technique involved in fundamental gravimetric and volumetric analyses.

6B. Quantitative Analysis. (3) I, II.

Lectures, discussions, and quizzes, two hours; laboratory, six hours. Prerequisite: course 6A. Required of chemistry majors, economic geologists, and College of Chemistry students. Fee, \$19.50.

A continuation of course 6A but with greater emphasis on theory. Analytical problems in acidimetry and alkalimetry, oxidimetry, electrolytic deposition, and semiquantitative procedures.

8. Organic Chemistry. (3) I, II.

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, chemistry, home economics, some agriculture majors, and College of Chemistry students.

An introductory study of the compounds of carbon, including both aliphatic and aromatic derivatives.

9. Methods of Organic Chemistry. (3) I, II.

Lectures and quizzes on principles of laboratory manipulation, two hours; laboratory, six hours. Prerequisite or concurrent: course 8. Required of chemistry majors, College of Chemistry students, premedical and pre dental students, and majors in petroleum engineering. Fee, \$31.

Laboratory work devoted principally to synthesis, partly to analysis.

10. Organic and Food Chemistry. (4) I.

Lectures, three hours; laboratory, three hours. Prerequisite: courses 1A and 1B, or 2A. Arranged primarily for majors in home economics, Fee, \$11.50.

UPPER DIVISION COURSES

†101. Organic Synthesis. (3) I.

Lecture, one hour; laboratory, eight hours. Prerequisite: courses 8 and 9 and the ability to read scientific German. Fee, \$31.

Advanced organic preparations; introduction to research methods.

102. Advanced Organic Chemistry. (3) I, II.

Prerequisite: course 8 and laboratory work in organic chemistry.

Condensations; mechanism of reaction; isomerism; alicyclic series, dyes, etc.

†103. Qualitative Organic Analysis. (3) I, II.

Lecture, one hour; laboratory, six hours. Prerequisite: courses 6A-6B, 8, and 9. Fee, \$17.50.

Classification, reactions, and identification of organic compounds.

107A. Amino Acids and Proteins. (4) I.

Lectures, two hours; laboratory, six hours. Prerequisite: course 6A, 8, and 9. Fee, \$17.50.

†107B. Carbohydrates and Fats. (4) II.

Lectures, two hours; laboratory, six hours. Prerequisite: courses 6A, 8, and 9. Fee, \$17.50.

108. General Biochemistry. (4) I.

Lectures, three hours; laboratory or demonstrations, three hours. Prerequisite: course 8; recommended, courses 6A, 9. May not be offered by chemistry majors as fulfilling part of the laboratory requirements in organic chemistry. Fee, \$11.50.

110A. Physical Chemistry. (3) I.

Prerequisite: course 6B; Physics 1A, 1C; Mathematics 4A. Required of chemistry majors.

110B. Physical Chemistry. (3) II.

Prerequisite: course 110A and Mathematics 4A. Required of chemistry majors.

A continuation of course 110A.

110G. Physical Chemistry. (3) I.

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.

110H. Physical Chemistry. (3) II.

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.

† To be given if a sufficient number of students enroll.

111A. Physical Chemistry Laboratory. (2) I.

Laboratory, six hours. Prerequisite or concurrent: course 110A. Required of chemistry majors. Fee, \$14.

Physicochemical problems and measurements.

111B. Physical Chemistry Laboratory. (2) II.

Laboratory, six hours. Prerequisite: course 110A; concurrent: course 110B. Required of chemistry majors. Fee, \$14.

A continuation of course 111A.

†121. Advanced Inorganic Chemistry. (3) II.

Lecture, one hour; laboratory, six hours. Prerequisite: course 6B. Fee, \$17.50.

Equilibrium and reaction rate; periodic classification. Laboratory work principally synthetic and analytic, involving special techniques.

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.

Prerequisite: junior standing, a good scholastic record, and such special preparation as the problem may demand. Fee, \$17.50.

GRADUATE COURSES**203. Chemical Thermodynamics. (3) II.****221. Physical Aspects of Organic Chemistry. (3) II.****280A-280B-280C-280D. Research in Chemistry.**

(3 to 6 units each term.)

290A-290B-290C-290D. Advanced Research in Chemistry.

(3 to 6 units each term.)

† To be given if a sufficient number of students enroll.

CLASSICS

Letters and Science List.—All undergraduate courses in classical languages are included in the Letters and Science List of Courses. For regulations governing this list, see the CIRCULAR OF INFORMATION.

The student may take the major in classical languages either in Latin or in Greek.

Preparation for the Major.

A. Latin.—Required: four years of high school Latin, or two years of high school Latin and courses 1 and 2; courses 3A-3B, 5A, 5B. Recommended: English, French, German, Greek, Italian, Spanish.

B. Greek.—Required: either course 1A-1B or two years of high school Greek; and 5A or 5B, 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, 104A-B-C-D, 106, 115, 117, 120, 191, plus 4 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.

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.

LATIN

LOWER DIVISION COURSES

A. Beginning Latin. (3) I.

B. Latin Readings. (3) II.

Prerequisite: course A or one year of high school Latin.

GA. Latin Prose Composition. (1) I.

Intended primarily for students entering with two years of high school Latin taken at least two years before matriculation in the University.

GB. Latin Prose Composition. (1) II.

Prerequisite: course B or GA, or two or three years of high school Latin.

1. Review of Grammar; Ovid. (3) I.

Prerequisite: course B or at least two years of high school Latin.

2. Vergil. (3) II.

Prerequisite: course 1, or course B with special permission of the instructor. Designed for students who have not studied Vergil in the high school.

3A-3B. Latin Prose Composition. (2-2) Yr.

Prerequisite: course 1 or three years of high school Latin.

5A. A Survey of Latin Literature. (3) I, II.

Prerequisite: course 2 or four years of high school Latin.

5B. A Survey of Latin Literature. (3) II.

Prerequisite: course 5A.

UPPER DIVISION COURSES

102. **Silver Latin.** (3) I.
Prerequisite: courses 5A, 5B.
- 104C-104D. **Latin Composition.** (1-1) Yr.
Prerequisite: course 3A-3B.
Ciceronian prose.
106. **Tacitus: Annals.** (3) II.
Prerequisite: course 102.
115. **Ovid: Carmina Amatoria and Metamorphoses.** (3) I.
Prerequisite: courses 102, 106.
117. **Lucretius: Selections; Vergil: Eclogues and Georgics.** (3) II.
Prerequisite: courses 102, 106.
- 199A-199B. **Special Studies in Latin.** (2-2) Yr.
Prerequisite: senior standing and at least 12 units of upper division Latin.

GRADUATE COURSES

- †200. **History of Classical Scholarship, Bibliography, and Methodology.**
(3) I.
Required of all candidates for the M.A. degree in Latin.
- †202. **Cicero's Philosophical Works.** (3) II.
- †210. **Vergil's Aeneid.** (3) I.
- †253. **Seminar in Latin Studies.** (3) II.
Textual criticism.
- †254. **Seminar in Latin Studies.** (3) II.
Latin comedy.

PROFESSIONAL COURSE IN METHOD

370. **The Teaching of Latin.** (3) I.
Prerequisite: a foreign language minor.

GREEK

LOWER DIVISION COURSES

- 1A-1B. **Greek for Beginners, Attic Prose.** (3-3) Yr.
- 5A-5B. **Readings in Greek.** (2-2) Yr.
40. **Greek Element in English.** (2) II.
For science majors and others interested in an understanding of the terms they meet. A knowledge of Greek is not required.

† To be given if a sufficient number of students enroll.

UPPER DIVISION COURSES

100C-100D. Prose Composition. (1-1) Yr.

Prerequisite: course 1A-1B.

101. Homer: *Odyssey*; Herodotus: *Selections*. (3) I.

Prerequisite: course 1A-1B.

102. Plato: *Apology* and *Crito*; Lyric Poets. (3) II.

Prerequisite: course 101.

104. Historical Prose: Herodotus and Thucydides. (3) I.

Prerequisite: courses 101, 102.

105. Greek Drama: Aeschylus and Sophocles. (3) II.

Prerequisite: courses 101, 102.

199A-199B. Special Studies in Greek. (1-4; 1-4) Yr.

Prerequisite: senior standing and at least 12 units of upper division Greek.

Problems in classical philology.

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 the CIRCULAR OF INFORMATION.

Preparation for the Major.—Required: Economics 1A–1B, Business Administration 1A–1B and either History 4A–4B or History 5A–5B. Economics 40 is required of all majors in economics (unless they are prepared to take Economics 142 or Statistics 131A), but it may be taken in either lower or upper division.

The Major.—Twenty-four upper division units, including two units from Economics 100A, 100B, 102, or 103. A maximum of 6 units may be offered toward the major from the following list of courses: Business Administration 131, 132, 145, 153, 160A–160B, 180, or 6 upper division units in sociology, or History 131A–131B; the 6 units must be entirely in one department.

Not more than a total of 30 upper division units in economics and business administration may be counted toward the bachelor's degree.

Students planning to undertake graduate work in economics will do well to study mathematics. For those who have not the background or the time for more extended work, Mathematics 2 or 7 is recommended.

Civil Service.—Students planning to take civil service examinations for positions as economists should include in their major economic theory, courses 135 and 138, should concentrate in two major fields in economics, and should take political science courses in public administration and constitutional law. They should consult with the departmental adviser on civil service examinations.

Majors Other than Economics.—Students with majors other than economics who wish training in economics for professional careers are advised to take courses 101, 142, 150, 158, and 170.

General Secondary and Special Secondary Credentials.—Students planning to undertake work leading to the General Secondary Credential in Business Education or with Social Science Field Major, or the Special Secondary Credential in Business Education, should consult the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION (Los Angeles).

Laboratory Fee.—Economics 40, \$2.50.

LOWER DIVISION COURSES

1A–1B. Principles of Economics. (3–8) Beginning either term.

Lectures, two hours; quiz, one hour. Open only to lower division students or to upper division majors in economics.

40. Economic and Social Statistics. (3) II.

Lectures, two hours; laboratory, one two-hour period. Prerequisite: sophomore standing. Statistics 131A may be substituted for this course in preparation for the major in economics. Fee, \$2.50.

An introduction to methods of analyzing economic and statistical data, with emphasis on analysis; sources and interpretation of economic and social statistics. Mathematical treatment is reduced to the simplest possible terms.

UPPER DIVISION COURSES

Courses 1A–1B or 101 are prerequisite to all upper division courses in economics.

100A. General Economic Theory. (3) I.

An introduction to economic theory with emphasis upon its application to practical problems.

101. Principles of Economics. (3) II.

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.

107. Comparative Economic Systems. (3) I.

The concepts and agencies of economic and social progress; an analysis of the theories and programs of modern reform movements.

131A-131B. Public Finance. (2-2) Yr.

The principles underlying the raising and spending of public money. Property, income, corporation, inheritance, sales taxes, and other sources of revenue. Public borrowing. Budgetary procedure. Economic and social significance of the fiscal structure and policies.

†133. Federal Finance. (3) II.

A study of the federal budget, federal expenditures, national defense, and financing of federal projects such as R.F.C., A.A.A., and public works.

135. Money and Banking. (3) I, II.

The principles and history of money and banking, with principal reference to the experience and problems of the United States.

136. Monetary and Financial History. (3) II.

Prerequisite: course 135.

The monetary and financial history, together with the major theoretical issues of the period; although the principal emphasis is laid upon financial conditions in the United States, the international setting is also considered, particularly with reference to England, France and Germany.

138. Business Cycles. (3) II.

A study of fluctuations in business, as in prices, production, wages, and profits, whether there is a common or general fluctuation; theories of causation; feasibility of forecasting; adjustment of business management to the cycles; possibility of controlling the cycle or alleviating its social effects.

150. Labor Economics. (3) I, II.

The problems of labor; the rise of modern industrialism; the principal causes of industrial strife, and the basis of industrial peace.

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) II.

Basis of the Social Security program; unemployment insurance, workmen's compensation, old age pensions, insurance against sickness.

158. Industrial Relations. (3) II.

Employer-employee relations; industrial arbitration; mediation; wage contracts; wage determination; state and federal administration; union management and control.

† To be given if a sufficient number of students enroll.

170. Economics of Industrial Control. (3) II.

The economic functions of business organizations; the economics of industrial production and pricing; the control of competitive enterprise; combinations and monopolies and their control; governmental regulation and economic planning.

171. Public Utilities. (3) II.

The economics of public service corporations from both the public and private points of view; the economic problems of regulation; problems of finance, rate-making, and valuation; state, national, and international problems arising from the development of public utilities; public ownership.

176. Economics of War. (3) II.

Nature of a war economy; mobilization for war; war finance; priorities; rationing; price control and inflation; wartime economic administration.

177. Postwar Reconstruction. (3) I.

The economic problems to be faced in rebuilding a peacetime economy; the role of private enterprise; regulation of industry; rehabilitation of economic life; proposals for reconstruction.

195. Principles of International Trade. (3) II.

An introduction to the principles and practices of international trade and foreign exchange. A survey of the historical development of the theories of foreign trade. A brief introduction to methods and practices of exporting and importing.

196A. International Economics. (3) I.

Fundamental factors in international economic relations; theories of capital movement; theories of public policy.

196B. Problems in International Economics. (3) II.

Distribution of world's population and resources, commercial policies, international controls.

GRADUATE COURSES**†232A-232B. The Relations of Government to Economic Life. (3-3) Yr.**

A study of government in economic life with special reference to institutional factors, economic problems of regulation, price policies and economic planning, wartime controls.

†235. Monetary Theory. (2) II.**†242. Studies in Industrial Relations. (2) II.****†255. Value and Distribution. Seminar. (2) I.**

Prerequisite: the consent of the instructor.

290. Special Problems. (1-6) I, II.

† To be given if a sufficient number of students enroll.

EDUCATION

An undergraduate major is not offered in the Department of Education at Los Angeles. Students desiring to qualify for certificates of completion leading to teaching and administration credentials should consult the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION, LOS ANGELES.

College of Letters and Science

Letters and Science List.—Courses 101A–101B, 102, 106, 110, 111, 112, 114, 119, 170, 180 are included in the Letters and Science List of Courses. For regulations governing this list, see the CIRCULAR OF INFORMATION.

UPPER DIVISION COURSES

History and Theory of Education

****101A–101B. History and Philosophy of Education.** (3–3) Yr.

The story of instruction from its beginning in Greece; the account of Athens, the practices of the Athenians and the critical thinking of Socrates, Plato, and Aristotle; Roman education; a survey of the philosophy of education exhibited in the writings of educational leaders since 1900.

102. History of American Education. (3) I, II.

The development of significant educational movements in the United States as a basis for analysis of present-day problems.

106. The Principles of Education. (3) I, II.

A critical analysis of the assumptions underlying education in a democratic social order.

Educational Psychology

Psychology 21, 22, or the equivalent, are prerequisite to all courses in educational psychology.

110. The Conditions of Learning. (3) I, II.

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.

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.

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.

** Course 101B will be given in the summer term; 101A in the fall term.

114. Educational Statistics. (2) II.

Students who are taking or who have taken any other course in statistics will receive only one unit of credit for this course.

Statistical procedures applicable to educational problems and educational research.

117. Principles of Guidance. (3) II.

The philosophy, techniques, and present practices of guidance as applied to the problems of pupil personnel and counseling in the public schools.

119. Educational Measurement. (2) I, II.

Use of standardized tests in problems of group and individual diagnosis and evaluation.

Early Childhood Education

123. Social Backgrounds of Child Development. (3) II.

Prerequisite: Psychology 21 and 22.

A study of the factors conditioning growth, development, and learning in early childhood.

125A. Kindergarten-Primary Education. (3) I.

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.

Prerequisite: course 125A. Required for the kindergarten-primary teaching credential.

Organization, curricula, and procedures in the nursery school, kindergarten, and primary grades.

Elementary Education

136. Rural School Curriculum Adaptations. (3) II.

The development and direction of the curriculum in a rural school situation; the availability and use of the educational resources in the local environment.

139. The Elementary Curriculum. (3) I, II.

Prerequisite: senior standing.

An introduction to the problem of curriculum organization as exemplified in representative courses of study. Emphasis is laid on the planning of activity units appropriate to the varying maturity levels of children.

Educational Administration and Supervision

149. Field Work in Administration and Supervision. (2) I, II.

To be taken concurrently with or subsequent to elementary or secondary school administration.

Vocational Education

160. Vocational Education. (2) II.

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.

The organization, administration, and teaching of business education in secondary schools.

*Secondary Education***170. Secondary Education. (3) I, II.**

Prerequisite: senior standing and Psychology 21, 22.

A study of secondary education in the United States, with special reference to the needs of junior and senior high school teachers.

*Social and Adult Education***180. Social Foundations of Education. (3) II.**

Education as a factor in social evolution. Analysis of current educational practices in the light of modern social needs.

181. Adult Education. (2) II.

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.

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) II.**199B. Studies in Curriculum. (2 to 4) I, II.****199C. Studies in Educational Psychology. (2 to 4) II.****199D. Studies in Rural Education. (2 to 4) II.****199E. Studies in Administration. (2 to 4) I, II.****199F. Studies in Guidance. (2 to 4) II.****†199G. Studies in Elementary School Supervision. (2 to 4) I, II.****GRADUATE COURSES§****240. Organization and Administration of Education. (2) I.****241A-241B. City School Administration. (2-2) Yr.****250A-250B. History of Education. Seminar. (2-2) Yr.****†251A-251B. Supervision of Instruction and Curriculum. Seminar. (2-2) Yr.****253A-253B. Early Childhood Education. Seminar. (2-2) Yr.****254. Experimental Education. Seminar. (2) I.**

§ A thesis is required of all candidates for the degree of Master of Arts with major in education.

† To be given if a sufficient number of students enroll.

255. School Surveys. Seminar. (2) II.

256A. Principles of Education. Seminar. (2) II.

Prerequisite: course 106 or its equivalent.

****260A-260B. Educational Psychology. Seminar. (2-2) Yr.**

Prerequisite: course 110 or Psychology 110, and course 114 or 119.

262A-262B. The Elementary School Curriculum. Seminar. (2-2) Yr.

270A-270B. Secondary Education. Seminar. (2-2) Yr.

274. Education and the War. Seminar. (2) II.

Prerequisite: at least two years of teaching experience.

A critical study of the problems, principles, and methods involved in school administration resulting from the impact of the war with special consideration given to the immediate and long-term implications.

292A. Research in Educational Administration. (1 to 4) II.

Prerequisite: teaching experience in elementary or secondary schools.

COURSES PREPARATORY TO SUPERVISED TEACHING

330. Introduction to Elementary Teaching. (4) I, II.

Prerequisite: courses 110, 111, and a C average or better in all work taken in the University of California. This course precedes by one term all teaching in kindergarten-primary and general elementary grades.

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.

370. Introduction to Secondary Teaching. (3) I, II.

Prerequisite: regular graduate status; courses 170 and one of: 101A, 101B, 102, 106, 112, 140, 180, or Psychology 110.

An intensive study of teaching and learning in the secondary school. This course is prerequisite to courses 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) Fairburn Avenue Elementary School; (4) University High School and Emerson Junior High School of Los Angeles City; (5) other high schools of Los Angeles and Santa Monica, as requirements demand.

** Course 260B will be given in the summer term, 260A in the fall term.

‡ Limited offerings in supervised teaching have been arranged for the summer term, to begin at the opening of the public schools, September 13. Applications for assignments must be made on or before July 8 in Education Building 229.

The work is organized and administered by the directors of training and a corps of supervisors and training teachers, chosen in every case by the University authorities.

All candidates for supervised teaching must secure the approval of a university physician prior to assignment. Formal application for assignment must be made at the office of the Director of Training about the middle of the term preceding that in which such teaching is to be done. For the last dates of application without late fee, see the Calendar, page 3.

Undergraduate candidates for kindergarten-primary, elementary, or special secondary teaching must have maintained at least a C average in all courses in education, in all courses comprising the major, and in all work completed at the University of California.

For Permit to Serve in Child-care Centers

N334. Supervised Care of Preschool Children. (2 to 4) I, II.

Required of candidates for permit to serve in child-care centers; does not meet the requirement in supervised teaching for kindergarten-primary or general elementary credentials.

Observation of and participation in the supervision and care of children two to five years of age.

For Kindergarten-Primary, General Elementary and General Junior High School Credentials

K335A-K335B. Supervised Teaching: Kindergarten-Primary. (4-4) II.

Prerequisite: senior standing, Physical Education 330, 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) II.

Prerequisite: senior standing, Physical Education 330, 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. Supervised Teaching: Art. (3 or 4) II.

A376. Supervised Teaching: Art. (1 to 4) 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. Supervised Teaching: Business Education. (3 or 4) II.

B376. Supervised Teaching: Business Education. (1 to 4) 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. Supervised Teaching: Home Economics. (3 or 4) II.**H376. Supervised Teaching: Home Economics. (1 to 4) I, II.**

Prerequisite: senior standing, course 170, Home Economics 370. A total of 6 units required of all candidates for the Special Secondary Credential in Homemaking.

MA375. Supervised Teaching: Mechanic Arts. (3 or 4) II.**MA376. Supervised Teaching: Mechanic Arts. (1 to 4) I, II.**

Prerequisite: senior standing, course 170, Mechanic Arts 370. A total of 6 units required of all candidates for the Special Secondary Credential in Industrial Arts Education.

M375. Supervised Teaching: Music. (3 or 4) II.**M376. Supervised Teaching: Music. (1 to 4) 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. Supervised Teaching: Physical Education. (3 or 4) II.**P376. Supervised Teaching: Physical Education. (1 to 4) I, II.**

Prerequisite: senior standing, course 170, Physical Education for Men 354 and 355A-355B, or Physical Education for Women 321A-321B and 321C-321D.

For General Secondary and Junior College Credentials

G377. Supervised Teaching: General Secondary. (4) II.

Prerequisite: regular graduate status, courses 170, 370. This course is accompanied by a required conference each week; hours for teaching are by individual arrangement. Required of all candidates for the General Secondary Credential.

Supervised teaching, consisting of participation in the instructional activities of one high school class for one term.

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 classroom or other experience not provided in their previous training.

G379. Supervised Teaching: Junior College. (4) II.

Prerequisite: courses 279, 370, or the equivalents, and the consent of the Director of Training. Restricted to candidates for the Junior College Credential alone who are teaching classes in the University or in a junior college.

383. Supervised Teaching: Supplementary. (1 to 6) I, II.

Prerequisite: course 170.

TEACHING REQUIREMENTS FOR MORE THAN ONE CREDENTIAL

- †1. *Kindergarten-Primary and General Elementary Credentials:*
Education K335A-K335B, and E335A; or E335A-E335B, and K335A.
2. *General Elementary and General Junior High School Credentials:*
E335A-E335B, and J374 (in a minor field).
- †3. *General Elementary and Special Secondary Credentials:*
A minimum of 6 units of teaching in the special field, and E335A.
4. *General Elementary and General Secondary Credentials:*
E335A-E335B; and G377 or G378; or G377, and E335A.
- †5. *Special Secondary and General Junior High School Credentials:*
A minimum of 6 units of teaching in the special field, and J374 (in a minor field).
6. *Special Secondary and General Secondary Credentials:*
A minimum of 6 units of teaching in the special field, and G377 or G378; or G377, and a minimum of 6 units of teaching in the special field.
7. *Junior College and General Secondary Credentials:*
G379, and G377 or G378.

† These combinations are in greatest demand.

ENGLISH

Students must have passed Subject A (either examination or course) before taking any course in English or Public Speaking. Regulations concerning Subject A will be found in the CIRCULAR OF INFORMATION.

Letters and Science List.—All undergraduate courses in English and public speaking are included in the Letters and Science List of Courses. For regulations governing this list, see the CIRCULAR OF INFORMATION.

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.—1. Students 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. The program may be amended from time to time after consultation with the department representative.

2. The program must comprise 24 units of upper division courses, including (1) English 117J, to be taken in the junior year; (2) one of the Type courses; (3) two of the Age courses; (4) English 151L, to be taken in the senior year.

3. The student must maintain an average grade of C in upper division English courses, and at the end of the senior year must pass a comprehensive final examination.

LOWER DIVISION COURSES

Freshman Course

1A–1B. First-Year Reading and Composition. (3–3) Beginning either term.

Open to all students who have received a passing grade in Subject A.

Sophomore Courses

Course 1A–1B is prerequisite to all sophomore courses in English except course 40.

31. Intermediate Composition. (2) I, II.

36A. Survey of English Literature, 1500 to 1700. (3) I, II.

36B. Survey of English Literature, 1700 to 1900. (3) I, II.

UPPER DIVISION COURSES

Courses 1A–1B and 36A–36B are prerequisite to all upper division courses in English, except 190A–190B, for which only 1A–1B 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.

A. The Junior Course: Course 117J. Required of juniors whose major or minor subject is English.

B. *The Type Courses:* Courses 114A-114B, 122A-122B, 125C-125D, and 125G-125H. It is understood that major students in English will take one of these courses.

C. *The Age Courses:* Courses 156, 157, 167, 177, and 187. It is understood that major students in English will take two of these courses.

D. *General Courses:* Courses 106A, 106C, 106F, 110, 111, 115, 130A-130B, 131, 132, 153, and 190A-190B.

E. *The Senior Course:* Course 151L. Required of seniors whose major subject is English.

106A. *The Short Story.* (2) II.

106C. *Critical Writing.* (2) II.

111. *The English Language in America.* (3) II.

114A-114B. *English Drama from the Beginning to the Present.* (3-3) Yr.

117J. *Shakespeare.* (3) I, II.

A survey of from twelve to fifteen plays, with special emphasis on one chronicle, one comedy, and one tragedy.

125C-125D. *The English Novel from the Beginning to the Present.* (3-3) Yr.

130A-130B. *American Literature.* (2-2) Yr.

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.

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.

132. *American Literature: the Age of Exile.* (3) II.

American world-wanderers and the American and European environment; the study of such figures as Melville, Bayard Taylor; Lafcadio Hearn and the Orient; Mark Twain, the traveler and critic; Stephen Crane; Henry Adams; Henry James; George Santayana; T. S. Eliot.

151L. *Chaucer.* (3) I, II.

153. *Introduction to the Study of Poetry.* (3) I, II.

156. *The Age of Elizabeth.* (3) I.

157. *The Age of Milton.* (3) I.

167. *The Age of Pope and Johnson.* (3) II.

187. *The Victorian Age: 1832-1892.* (3) II.

190A. *Literature in English from 1900.* (2) II.

Criticism; the novel; biography.

190B. *Literature in English from 1900.* (2) I.

Poetry; the drama; the essay.

COMPREHENSIVE FINAL EXAMINATION

The Comprehensive Final Examination in the undergraduate major in English must be taken at the end of the senior year. It will consist of one two-hour paper and one three-hour paper. The examination will cover English literature from the beginning to 1900. The papers will be set by the examining committee of the department. The student's preparation for this examination will presumably extend throughout the entire college course.

This examination is not counted as part of the 24-unit major but is counted on the 36-unit upper division requirement and on the 120 units required for graduation. It does not affect study-list limits, and should at no time be entered by the student upon his study list. However, the student is advised to limit his program to 13 units during his last term. Upon his passing the examination the grade assigned by the department will be recorded. Given each term; credit, 3 units.

GRADUATE COURSES

- †208. The Development of Modern English. (3) I.
- †211A. Old English. (3) II.
- †225A. The Ballad. (3) I.
- †226. Sir Walter Scott: The Ballads and Romances. (3) II.
- †230A. American Literature to 1850. (3) II.
- †231. Marlowe. (3) II.
- †242. Fielding. (3) I.
- †245. Spenser. (3) I.
- †250. The Theory of Fiction (1600-1700). (3) II.
- 290. Special Problems. (1 to 6) I, II.

PROFESSIONAL COURSE IN METHOD

- 370. The Teaching of English. (3) I, II.

May be counted as part of the 18 units in education required for the secondary credential. Required of candidates for the General Secondary Credential in English.

PUBLIC SPEAKING§

LOWER DIVISION COURSES

- 1A-1B. Elements of Public Speaking. (3-3) Beginning each term.
- 2A-2B. The Fundamentals of Expression and Interpretation. (3-3) Beginning each term.

† To be given if a sufficient number of students enroll.

§ The University of California at Los Angeles does not offer a major in public speaking. Students wishing to satisfy the requirement for a major in public speaking are referred to the CIRCULAR OF INFORMATION, DEPARTMENTS AT BERKELEY.

UPPER DIVISION COURSES

110A. Third-Year Public Speaking. (3) I.

Prerequisite: course 5A-5B.

Oral argumentation and debate; preparation of briefs; presentation of arguments.

110B. Third-Year Public Speaking. (3) II.

Prerequisite: course 110A and the consent of the instructor.

Practice in extemporaneous speaking; preparation of the occasional address.

111C. Literary Interpretation. (3) II.

Prerequisite: course 2A-2B.

The dramatization of one novel, the oral reading and classroom presentation of selected one-act plays, and the study and abridgment of one three-act play in relation to public reading technique.

122. Diction and Voice. (3) I, II.

Prerequisite: courses 1A and 2A or the equivalent.

155A-155B. Play Production. (3-3) Yr.**156. Play Directing. (3) I, II.**

Study and practice in the direction of plays and group activities of a dramatic nature.

190A. Forensics. (1) II.

Prerequisite: the consent of the instructor.

FOREIGN LANGUAGE GROUP

This group is composed of the departments of Classics, French, Germanic Languages, and Spanish and Italian, and has been organized for the purpose of unifying and coordinating the activities in these fields. Although no attempt is made to curtail the free development of each department, the special committee in charge of the Foreign Language Group endeavors to articulate, for their mutual benefit, the courses and research work of the four departments concerned.

The announcements of the departments comprising this group appear in their alphabetical order.

GENERAL PHILOLOGY AND LINGUISTICS**UPPER DIVISION COURSES****150. Introduction to General Language. (1) II.**

Prerequisite: two years of Latin, or two years each of two other foreign languages.

The interrelation of ancient and modern languages, especially those of common Indo-European origin.

170. Introduction to Linguistics. (3) II.

Open to students with majors in English or the foreign languages.

An introduction to the fundamentals of general and historical linguistics, including phonetics; linguistic elements; grammatical categories; linguistic change; dialect geography; language, race, and culture.

JAPANESE**LOWER DIVISION COURSES****4. Basic Oral Japanese. (3) I, II.****5A. Intermediate Japanese. (3) I, II.**

Prerequisite: course 4.

5B. Advanced Japanese. (3) I, II.

Prerequisite: course 5A or the consent of the instructor.

ROMANCE LANGUAGES AND LITERATURES**GRADUATE COURSE****201A. Historical Grammar and Methodology of Romantic Linguistics.**

(2) II.

A knowledge of Latin is indispensable.

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 the CIRCULAR OF INFORMATION.

Preparation for the Major.—French 1, 2, 3, 4, 42A–42B, or their equivalents. Two years of high school Latin, or Latin A and B, or the equivalent, must be completed before the beginning of the senior year. History 4A–4B, Philosophy 3A–3B, and a modern language are strongly recommended.

The Major.—Required: 24 units of upper division French, including courses 101A–101B, 109A–109B, 112A–112B.

Any of the remaining upper division courses except 109M–109N may be applied on the major. With the permission of the department 4 units of the 24 may be satisfied by appropriate upper division courses in English, German, Greek, Latin, Spanish, Italian, or Philosophy.

Students with majors in French will also be required to take a comprehensive examination covering history, geography, literature, and other general information concerning France. Two units credit toward the major will be given for satisfactory record in this examination which will be given on the second Friday in October and on the second Friday in February.

LOWER DIVISION COURSES

The ordinary prerequisites for each of the lower division courses are listed under the description of these courses. Students who have had special advantages in preparation may, upon examination, be permitted a more advanced program; or, such students may be transferred to a more advanced course by recommendation of the instructor.

1. Elementary French. (4) I, II.

1G. Reading Course for Graduate Students. (No credit) II.

Three hours a week.

2. Elementary French. (4) I, II.

Prerequisite: course 1 or two years of high school French.

3. Intermediate French. (4) I, II.

Prerequisite: course 2 or three years of high school French.

4. Intermediate French. (4) I, II.

Prerequisite: course 3 or four years of high school French.

8A–8B–8C–8D. French Conversation. (1 unit each term) Beginning each term.

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.

Prerequisite: course 4.

42A–42B. French Civilization. (2–2) Yr.

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 101A-101B, 109A and 109B are ordinarily prerequisite to other upper division courses.

All upper division courses, with the exception of 109M and 109N, are conducted mainly in French.

101A-101B. Composition, Oral and Written. (3-3) Beginning each term.

109A. Survey of French Literature and Culture. (3) I.

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.

Prerequisite: course 109A.

The eighteenth, nineteenth, and twentieth centuries.

109M. A Survey of French Literature and Culture. (3) I.

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.

Prerequisite: course 109M.

The eighteenth, nineteenth, and twentieth centuries.

112A. The Nineteenth Century. (2) I.

Prerequisite: courses 101A-101B, 109A, and 109B.

From 1789 to 1830.

112B. The Nineteenth Century. (2) II.

Prerequisite: course 112A.

From 1830 to 1885.

118A-118B. The Sixteenth Century. (2-2) Yr.

†120A-120B. The Seventeenth Century. (2-2) Yr.

130A-130B. Grammar, Composition, and Style. (3-3) Yr.

Prerequisite: an average grade higher than C in French courses. This course is required of all candidates for the certificate of completion of the teacher-training curriculum, or for the degree of Master of Arts.

Practice in oral and written composition based on selected models.

199A-199B. Special Studies in French. (2-2) Yr.

Prerequisite: senior standing and at least 12 units of upper division French.

† To be given if a sufficient number of students enroll.

GRADUATE COURSES

206A. Reading and Interpretation of Old French Texts. (2) II.

†214A-214B. French Versification. (2-2) Yr.

†257A-257B. Seminar in the French Renaissance. (2-2) Yr.

290. Research in French. (1 to 6) I, II.

†298A-298B. Special Studies in Literary Criticism. (2-2) Yr.

PROFESSIONAL COURSE IN METHOD

370. The Teaching of French. (3) II.

Prerequisite: courses 101A-101B and 109A-109B, the latter being permitted concurrently.

† To be given if a sufficient number of students enroll.

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 the CIRCULAR OF INFORMATION.

Preparation for the Major.—Required: Geography 1A-1B, 3, and 5B; Geology 5 or its equivalent; English 1A. Recommended: Anthropology 1A-1B, Botany 1A, 36, Economics 1A-1B, Geology 3, one year of history, Physics 1A-1B, Political Science 3A-3B, and at least one modern foreign language, preferably French or German.

The Major.—The minimum requirement is 24 units of upper division work in geography, including courses 101, 105, 113, 115, and two of the following: 121, 122A, 122B, 123A, 123B, 124A, 124B, 125, 131, plus 6 units in courses in other departments. A list of courses approved for this purpose may be secured from the departmental adviser for geography majors.

LOWER DIVISION COURSES

1A. Elements of Geography. (3) I, II.

Students who have had courses 5A-5B or 100 will receive only half credit for course 1A.

A study of the elements of geography, especially the basic elements (climate, land forms, soils, etc.), followed by a short introduction to regional geography.

1B. Elements of Geography. (3) I, II.

Prerequisite: course 1A or the equivalent. Students who have had courses 5A-5B or 100 will receive only half credit for course 1B.

A study of the world's major geographic regions.

3. Introduction to Climate and Weather. (3) I, II.

A survey of the earth's atmospheric phenomena, with special reference to the causes and regional distribution of climate and weather.

5A. Economic Geography. (3) I.

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 1B will receive only 1½ units of credit for course 5A.

A study of those elements of the natural environment essential to the geographic interpretation of economic activities.

5B. Economic Geography. (3) II.

Prerequisite: course 5A or 1A-1B.

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.

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 factors of physical environment as they affect life on the earth and the activities of man.

108. The Geographic Basis of Human Society. (3) I.

Prerequisite: course 1A-1B, or 5A-5B, or 100.

The geographic element in the evolution of primitive cultures and of advanced civilizations. A study of various types of physical habitat in relation to social organization and institutions, together with the corresponding human culture.

111. The Conservation of Natural Resources. (3) I.

Prerequisite: the consent of the instructor.

The general principles of conservation and their application, especially to the United States.

†113. General Climatology. (3) II.

Prerequisite: course 1A-1B or 5A-5B, or 100; 3 is especially desirable. To be taken by major students normally in the junior year.

A study of the causes of climatic phenomena and of the larger features which characterize the climates of the earth.

115. Physical Bases of Geography. (3) II.

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 land forms, soils, drainage, and natural vegetation.

121. The Geography of Anglo-America. (3) I, II.

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 Latin America. (3) II.

Prerequisite: course 1A-1B or 5A-5B, or 100.

A study of the physical conditions characterizing the countries of South America, particularly in relation to the life of the inhabitants.

†122B. The Geography of Latin America. (3) II.

Prerequisite: course 1A-1B or 5A-5B, or 100.

A study of the physical conditions characterizing Mexico, Central America, and the West Indies, particularly in relation to the life of the inhabitants.

123A. The Geography of Europe. (3) II.

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.

125. The Geography of Australia and Oceania. (3) II.

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.

† To be given if a sufficient number of students enroll.

131. The Geography of California. (3) II.

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.

†181. Current Problems in Political Geography. (3) II.

Prerequisite: the consent of the instructor.

Consideration of the geographical basis of selected problems in domestic and international affairs, with stress upon the geographic principles involved.

199. Problems in Geography. (3) I, II.

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.

275. Advanced Field Problems in Local Geography. (3) I, II.

290. Research in Geography. (3 or 6) I, II.

† To be given if a sufficient number of students enroll.

GEOLOGY

Preparation for the Major.—Geology 5, 3; Mineralogy 3A-3B; Chemistry 1A-1B; Physics 2A-2B; Mechanical Engineering D or equivalent; Mathematics 8, and CF or 3A; Civil Engineering 11A-11B, 1FA-1FB (geology section). Recommended: English 1A-1B; a reading knowledge of German and French is essential for advanced work. Certain lower division requirements may be postponed to the upper division by permission of the department.

The Major.—A minimum of 25 units of upper division courses, including Geology 102A-102B, 103, 107, 116, and 118 or 199 (4 units); Paleontology 111A-111B. Mathematics 3A-3B is also required. The department will certify to the completion of a major program for graduation only on the basis of at least C grades in Geology 102B and 103.

Students whose major interests lie in the fields of mineralogy, petrology, petrography, economic geology, petroleum geology, stratigraphic geology, or geomorphology and who expect to continue work for the master's degree should complete also Mathematics 4A in their undergraduate program, since this is required for the higher degree. Mathematics 4B (or 109), 119, Physics 105, and Chemistry 109A-109B, 120 are also recommended for students in the fields named above.

Students whose major interests lie in the fields of paleontology or historical geology and who expect to continue work for the master's degree should complete Zoölogy 1, 2, and 112 in their undergraduate program since these are required for the higher degree. Zoölogy 104 is also recommended for such students.

Oral and written proof of ability to use the English language adequately and correctly must be furnished to the department. Each program for a major is to be made out in accordance with some definite plan approved by the department.

Laboratory Fees.—Geology 118, \$35; Mineralogy 3A, 3B, \$2.50.

GEOLOGY

LOWER DIVISION COURSES

2. General Geology: Physiographic. (3) I, II.

Not open to students who have taken or are taking course 5.

An elementary course dealing with the earth's surface features and the geological laws governing their origin and development.

2L. General Geology: Laboratory. (1) I, II.

Prerequisite: course 2 (may not be taken concurrently). Open only to students who have completed course 2 or 1A offered in previous years and who need credit for course 5 or its equivalent; the consent of the instructor is required.

Laboratory practice in physical geology.

3. General Geology: Historical. (3) I, II.

Prerequisite: course 2 or 5.

A study of the geological history of the earth and its inhabitants, with special reference to North America.

5. General Geology: Dynamical and Structural. (4) I, II.

Lectures, three hours; laboratory, three hours. Prerequisite: elementary chemistry. Not open to students who have taken or are taking course 2 or who have credit for course 1A.

A study of the materials and structures of the earth and the processes and agencies by which the earth has been and is being changed.

25. Interpretation of Airplane Photographs and Maps. (1) I, II.

Prerequisite: the consent of the instructor.

Interpretation of various types of topographic maps and airplane photographs with practical applications in the field.

UPPER DIVISION COURSES**†102A. Field Geology. (3) I, II. Saturdays.**

Prerequisite: courses 3, 103 (may be taken concurrently), Civil Engineering 1LA, 1FA, 1LB, 1FB (geology sections). Credit toward the major is given only to students who take both 102A and 102B.

Introduction to field geology. Theory and practice of geologic mapping, and practice in the observation and interpretation of geologic phenomena, entailing weekly field trips into the nearby hills, and occasional longer excursions to points of special interest in a region remarkably rich in geologic features.

†102B. Field Geology. (3) I, II. Saturdays.

Prerequisite: courses 102A, 103 (with a grade C or higher).

A continuation of course 102A.

†103. Introduction to Petrology. (4) I.

Lectures, two hours; laboratory, six hours. Prerequisite: course 5, Mineralogy 3A-3B, and Chemistry 1B (may be taken concurrently).

The general characteristics, origins, mode of occurrence and nomenclature of rocks, and description of the more common types, accompanied by determinative laboratory practice.

†106. Economic Geology: Metalliferous Deposits. (3) II.

Prerequisite: courses 3 and 103.

A systematic study of ore occurrences, and of the genetic processes and structural factors involved.

†107. Physical Geology of North America. (2) I, II.

Prerequisite: course 3.

A course in advanced general geology with special reference to a regional study of North America.

†108. General Economic Geology. (3) I.

Prerequisite: course 3.

Geologic occurrence and geographic distribution of the important minerals; special attention is given to strategic war minerals.

†111. Petroleum Geology. (3) I, II.

Lectures, map work, problems, and field trips to nearby oil fields. Prerequisite: courses 102A, 116.

Geology applied to exploration for petroleum; the geology of the principal oil fields of the world with emphasis upon United States fields; and field methods in oil explorations.

† To be given if a sufficient number of students enroll.

†116. Structural Geology. (3) II.

Lectures, two hours; laboratory, three hours. Prerequisite: courses 102A and 103. A working knowledge of descriptive geometry is desirable.

The phenomena of fracture, folding, flow, and the graphic solution of problems.

199. Problems in Geology. (1 to 4) I, II.

Open only to seniors who are making geology their major study. Reports and discussions.

GRADUATE COURSES**†215A-215B. Advanced Petrographic Laboratory. (2-5; 2-5) Yr.**

Prerequisite: Mineralogy 109B.

Metamorphic rocks.

†236. Physical Geology of California. (3) I.**†237. Paleontology and Stratigraphy of California. (8) II.****†251. Seminar in Petrology. (3) II.**

Advanced study of igneous and metamorphic rocks with emphasis on petrogenesis.

†260A-260B. Seminar in Structural Geology. (3-3) Yr.

The second term of this course may be taken without the first.

†263. Seminar in Economic Geology. (3) I.**299. Research in Geology. (1 to 6) I, II.****MINERALOGY****LOWER DIVISION COURSE****†3A-3B. Introduction to Mineralogy. (3-3) Yr.**

Lecture, one hour; laboratory, six hours; discussion, one hour (3A only). Prerequisite: elementary chemistry and physics; Geology 5 (may be taken concurrently with 3A); or the consent of the instructor. Fee, \$2.50 a term.

Crystal morphology and projection, determination of minerals by their physical and chemical properties, and descriptive mineralogy.

UPPER DIVISION COURSES**†101. Paragenesis of Minerals. (2) II.**

Prerequisite: course 3A-3B, Chemistry 1A-1B.

†109A. Optical Mineralogy and Petrography. (2) I.

Laboratory, six hours. Prerequisite: course 3B; Geology 103 (which may be taken concurrently).

Study of the optical properties of minerals; mineral recognition under the microscope. The study and description of rocks, and their microscopic characters.

†109B. Optical Mineralogy and Petrography. (4) II.

Lecture, one hour; laboratory, nine hours. Prerequisite: course 109A.

A continuation of course 109A.

† To be given if a sufficient number of students enroll.

GRADUATE COURSES

†281. **Problems in Mineralography.** (2 to 4) I.

†282. **Problems in Goniometry.** (2 to 4) II.

PALEONTOLOGY†

UPPER DIVISION COURSE

†111A-111B. **Systematic Paleontology.** (3-3) Yr.

Lectures, two hours; laboratory, three hours. Prerequisite: Geology 3 or Paleontology 1.

A general introduction to the study of invertebrate fossils.

GRADUATE COURSE

†215. **Systematic Conchology and Echinology.** (3) I.

Lecture, one hour; laboratory, six hours. Prerequisite: course 111A-111B, Geology 3.

An introduction to the classification and identification of the western American marine Cenozoic mollusca and echinoidea.

† To be given if a sufficient number of students enroll.

‡ Courses in vertebrate paleontology may be found under the announcement of the Department of Zoölogy (p. 143).

GERMANIC LANGUAGES

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 the CIRCULAR OF INFORMATION.

Preparation for the Major.—Required: courses 1, 2, 3, 4, 6, and 7 or their equivalents. Recommended: History 4A-4B, English 1A-1B, Philosophy 3A-3B.

The Major in German.—Twenty-four units in upper division courses, of which 10 units must be in junior courses, including 106A, 106B, and either 109A or 109B; the balance must be made up from senior courses, including 117, 118A, and 118B. 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. A comprehensive final examination is required at the end of the senior year.

|| *The Comprehensive Final Examination.*—The comprehensive final examination in the undergraduate major in German must be taken at the end of the senior year. This examination will cover German literature from the beginnings to the present and will be divided into two sections of three hours each. In order to insure adequate preparation a program of tutorial aid is offered the student. A reading list is provided for which the student will be held responsible. Through conferences with individual candidates the staff of the department will provide assistance in the interpretation of works read outside of courses.

This examination is not counted as part of the 24-unit major but is counted on the 36-unit upper division requirement and on the 120 units required for graduation, and the grade assigned by the department will be recorded for the student. The examination is given each term and carries 3 units of credit.

GERMAN

LOWER DIVISION COURSES

The ordinary prerequisites for each of the lower division courses are listed under the description of these courses. Students who have had special advantages in preparation may, upon examination, be permitted a more advanced program; or such students may be transferred to a more advanced course by recommendation of the instructor.

1. Elementary German. (4) I, II.

This course corresponds to the first two years of high school German.

2. Elementary German. (4) I, II.

Prerequisite: course 1, or courses 1A and 1B, or two years of high school German.

3. Intermediate German. (4) I, II.

Prerequisite: course 2 or three years of high school German.

Readings in literary German.

3L. Intermediate German. (4) I.

Prerequisite: course 2 or three years of high school German.

Readings in the biological sciences.

|| During the present period of emergency the comprehensive final examination will not be required, but is optional with the student.

3M. Intermediate German. (4) I, II.

Prerequisite: course 2 or three years of high school German.
Readings in military and aeronautical German.

3P. Intermediate German. (4) I, II.

Prerequisite: course 2 or three years of high school German.
Readings in the physical sciences.

3S. Intermediate German. (4) II.

Prerequisite: course 2 or three years of high school German.
Readings in the social sciences.

4. Intermediate German. (4) I, II.

Prerequisite: Any one of courses 3, 3L, 3M, 3P, or 3S, or four years of high school German.

Advanced readings in literary German.

6. Review of Grammar, Composition, and Conversation. (2) I, II.

Prerequisite: course 2 or three years of high school German.

7. Rapid Readings in Nineteenth Century Literature. (2) I, II.

Prerequisite: course 3B or the equivalent.

8A-8B. German Conversation. (1-1) Beginning each term.

The class meets two hours weekly.

Open to students who have completed course 2 or its equivalent with grade of A or B.

UPPER DIVISION COURSES

The prerequisite for all upper division courses is course 3 (or 4) or the equivalent. Major students are also required to take course 6.

105. Lessing's Life and Works. (3) I.

Lectures and reading of selected texts.

106A-106B. Grammar, Composition, and Conversation. (2-2) Yr.**106C-106D. Grammar, Composition, and Conversation. (2-2) Yr.**

Prerequisite: course 106A-106B.

108. Schiller's Life and Works. (3) II.

Lectures and reading of selected texts.

109A. Introduction to Goethe. (3) II.

Goethe's prose.

109C. Goethe's Dramas. (3) I.**110. The German Lyric and Ballad. (3) I.**

Prerequisite: 6 units of upper division German.
A survey from 1750 to the present.

111. The German Novelle. (3) II.

Prerequisite: 6 units of upper division German.

114. **German Literature from 1885 to the Present.** (3) II.
Prerequisite: 6 units of upper division German.
A survey of recent dramatic and narrative literature.
117. **History of the German Language.** (3) I.
Prerequisite: course 106A-106B.
- 118A. **History of German Literature.** (3) I.
Prerequisite: 6 units of upper division German.
The Middle Ages.
- 118B. **History of German Literature.** (3) II.
Prerequisite: 6 units of upper division German.
From the Reformation to 1850.
119. **Middle High German.** (3) II.
Prerequisite: courses 117 and 118A.
Outline of grammar, selections from the Nibelungenlied, Kudrun, and the Court Epics.
- 199A-199B. **Special Study for Advanced Undergraduates.** (1 to 3) I, II.
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.
208. **German Literature from Opitz to Bodmer: 1624-1740.** (2) II.
- 212A-212B. **The Age of Romanticism.** (2-2) Yr.
222. **Goethe's *Faust*.** (2) II.
230. **Survey of Germanic Philology.** (3) II.
- 298A-298B. **Special Studies.** (1-3; 1-3) Yr.

PROFESSIONAL COURSE IN METHOD

370. **The Teaching of German.** (3) II.
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

11. **Elementary Danish and Norwegian.** (3) I.
12. **Intermediate Danish and Norwegian.** (3) II.

UPPER DIVISION COURSE

141. **Modern Scandinavian Literature in English Translation.** (3) II.
No prerequisite; open to all upper division students.

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 the CIRCULAR OF INFORMATION.

Preparation for the Major.—Required: (1) courses 4A-4B or 5A-5B, and (2) course 7A-7B or 8A-8B, or equivalent preparation for students transferring from other departments or other institutions. History majors who do not take course 7A-7B must take three units of United States history in the upper division.

The Major.—Twenty-four units of upper division work in history. The major must include a year sequence in European history and a year sequence in American history. The major must also include course 199A-199B in a field for which preparation has been made in the junior year. This course must be taken in proper sequence on the advice of the departmental adviser.

LOWER DIVISION COURSES

4A-4B. History of Europe. (3-3) Yr.

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.

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.

This course satisfies the requirement in American Institutions.

8A-8B. History of the Americas. (3-3) Yr.

A survey of the history of the Western Hemisphere.

†9A. Great Personalities: United States. (2) II.**10. Makers of the Modern World. (2) I.**

The lives of some of the leading figures in world history during the last hundred years, American, British, and Continental European.

39. Pacific Coast History. (2) I, II.

UPPER DIVISION COURSES

The prerequisite for all upper division courses is course 4A-4B, or 5A-5B, or 7A-7B, or 8A-8B, or other preparation satisfactory to the instructor.

†101. History of American Institutions and Ideals. (2) I, II.

This course satisfies the requirement in American Institutions.

111A. Greek History to the Roman Conquest. (3) I.**111B. Roman History to the Accession of Augustus. (3) II.**

† To be given if a sufficient number of students enroll.

121A. The Early Middle Ages. (3) I.

Prerequisite: course 4A-4B or 5A-5B, or the consent of the instructor.

A survey of the main events of European history from the fall of the Roman Empire to about 1050 A.D.

121B. The Civilization of the Later Middle Ages. (3) II.

Prerequisite: course 4A-4B or 5A-5B, or the consent of the instructor.

A survey of European history, 1050-1450, with emphasis upon social, cultural, religious, and economic foundations of western Europe.

†140. Plans for International Organization and World Peace, 1300-1914.

(2) II.

A survey of the proposals made and put into effect to organize the community of nations for peace, since the time of the Renaissance.

142. Europe in the Seventeenth and Eighteenth Centuries. (3) I.

European society, politics, and international relations from the Thirty Years War and Louis XIV to the Enlightened Despots and the Seven Years War.

143. Enlightened Despotism, the French Revolution, and Napoleon. (3) II.

A study of the culture of the Enlightenment and of European politics and international relations from the Seven Years War to the fall of Napoleon.

144. Europe from Napoleon to the Congress of Paris. (3) I.

The history of Europe from the rise of Napoleon to the end of the Crimean War.

145. Europe from the Congress of Paris to the Peace Conference of Versailles.

(3) II.

The history of Europe with special stress on the unification of Germany and Italy, the causes of the World War, and the World War itself.

146B. History of Slavic Europe and the Balkans. (3) II.

The history of Russia, Poland, Serbia, Bulgaria, Roumania, and Greece from the Napoleonic period to the present treated in the light of internal conditions and European diplomacy.

†147. History of Wars in Europe. (2) II.**153A-153B. History of the British People in Modern Times. (3-3) Yr.**

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.

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.

The structure of the British government, society, and economic life under the Hanoverians.

† To be given if a sufficient number of students enroll.

†157. Great Britain in the Twentieth Century. (3) II.

The changing British scene in war and peace from the accession of Edward VII to the present.

†158B. History of the British Empire. (3) II.

The development of the Empire since 1783, both in its various parts, and in the relationship between Great Britain and the dominions and colonies, with principal reference to Africa, Australasia, and the West Indies.

†160. History of the Caribbean. (3) II.**162A-162B. Hispanic America from the Discovery to the Present. (3-3) Yr.****171. The United States: Colonial Period. (3) I.**

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.

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.

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.

A general survey of political, economic, and cultural aspects of American democracy in recent years.

181. The Westward Movement and the West. (3) I.

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.

Recommended preparation: course 8A-8B or 39.

The economic, social, intellectual, and political development of California from the earliest times to the present.

191A. History of the Far East. (3) I.

China and Japan from the earliest times to the beginning of western civilization.

191B. History of the Far East. (3) II.

Transformation of the Far East in modern times under the impact of western civilization.

† To be given if a sufficient number of students enroll.

196. Early India and the Indies. (3) I.

India from the Vedic period to the decline of the Mogul Empire; colonial rivalries of the European powers in the Indian Ocean area; establishment of the Dutch empire in the East Indies.

197. History of British India. (3) II.

History of the British Empire in India, Burma, and Malaya.

198. Conferences and Reading for Honors. (2) I, II.

Primarily for qualified history majors who intend to take the optional examination for honors in history given each May. Whenever possible students should enroll at the beginning of the junior year. May be taken four times for credit.

199A-199B. Special Studies in History. (3-3) Yr.

Required of all history majors. This course is usually taken in the senior year but students should arrange their programs so as to take it in the correct sequence, if necessary by beginning it in the second term of the junior year.

Section 2. Medieval History.

†Section 3. European History.

Section 5. English History.

Section 6. American Colonial History.

Section 7. The American Revolution.

Section 9. Hispanic-American History.

GRADUATE COURSES

254A-254B. Seminar in Medieval History. (3-3) Yr.**257A-257B. Seminar in European History. (3-3) Yr.**

Studies in continental European history prior to 1914.

260A. Seminar in English History. (3) I.

Studies in the Stuart period.

261B. Seminar in English History. (3) II.

Studies of England in the nineteenth century.

265A-265B. Seminar in Hispanic-American History. (3-3) Yr.

Studies in the colonial and early national periods.

269A-269B. Seminar in United States History. (3-3) Yr.

Studies in the colonial frontier.

290. Research in History. (1 to 6) I, II.

† To be given if a sufficient number of students enroll.

HOME ECONOMICS

College of Applied Arts

The Department of Home Economics offers six majors:

- A. The General Major in Home Economics, for students working toward the general elementary teaching credential, or for those who wish home economics as a background for homemaking.

Preparation for the Major.—Courses 1A–1B, 11A–11B; Art 21A, 42; Chemistry 2A–2B, 10; Zoölogy 13.

The Major.—Courses 108, 118, 120, 143, 162A–162B, 168; 8 units selected from courses 125, 150, 164A–164B, 170, 175, 176; and 12 units selected from the courses listed in one of the following groups: Group I, Art 101A–101B, 132A–132B, 139A–139B, 156A–156B, 168A, 173, 180, 183A–183B; Group II, Psychology 107A–107B, 110, 112, 135, 137A–137B, 145A–145B; Group III, Physical Education for Women 104A–104B, 114A–114B, 120, 133, 135, 192A–192B (or 193); Group IV, Zoölogy 101, 104, 105, 106, 112, 113, 113C, 115, 115C; Group V, Economics 100A, 100B, 106, 107, 150, Geography 100, 108, 113.

- B. The Major for Prospective Home Economics Teachers.

Preparation for the Major.—Courses 1A–1B, 11A–11B; Art 2A or 42, 21A; Chemistry 1A–1B, 8 or 10; Zoölogy 13.

The Major.—Courses 108, 118, 120, 143, 150, 162A–162B, 168, 175; 8 or 9 units chosen from other home economics courses; and 5 or 6 units (to make a total of 36) selected from Art 101A–101B, 156A–156B, Physical Education for Women 104A–104B, Psychology 110, 112.

- C. The Dietetics Major, for students preparing for dietetic internships.

Preparation for the Major.—Course 11A–11B; Bacteriology 1, Business Administration 1A, Chemistry 1A–1B, 8, Economics 1A–1B, English 1A–1B or Public Speaking 1A–1B, Psychology 21, 22, Zoölogy 13.

The Major.—Courses 110, 118, 119, 120, 125, 136A–136B, 159, 370 (or Psychology 110), Business Administration 153, 180; and 4 units chosen from courses 143, 150, 162A–162B, 168, 199, Agricultural Economics 104, Economics 150, Psychology 112, Public Health 101A–101B.

- D. The Major in Food and Nutrition, for students preparing for promotional work with food or utility companies.

Preparation for the Major.—Course 11A–11B, Art 2A or 42, Business Administration 1A, Bacteriology 1, Chemistry 1A–1B or 2A–2B, 8 or 10, Economics 1A–1B, English 1A, Public Speaking 1A, Physics 10A–10B, Zoölogy 13.

The Major.—Courses 110, 118, 120, 125, 136A–136B, 162A–162B, Business Administration 140, 180, 185; and 5 units selected from courses 119, 150, 159, 199A–199B, Psychology 101.

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.—Course 11A–11B, Bacteriology 1, Chemistry 1A–1B, 8, Mathematics CF and 8 (or the equivalent), 3A–3B, Physics 2A–2B, Zoölogy 13.

The Major.—Courses 110, 118, 119, 120, 125, 159, 199 (4 units or more); Physics 112; the remainder of the 36-unit major to be selected from courses 143, 150, Bacteriology 103, 105, Physics 107A–107B, 113, 113C.

The minor should be in chemistry and should include Chemistry 6A–6B (taken in the upper division) and either Chemistry 109A–109B or Chemistry 6A and 9 (taken in the upper division) and either Chemistry 101 or 102.

F. The Major in Clothing.

Preparation for the Major.—Courses 1A–1B; Art 1A, 2A–2B, 21A; Chemistry 1A–1B, 8; Economics 1A–1B.

The Major.—Courses 108, 162A, 170, 175, 176; Art 101A–101B, 183A–183B; Psychology 101; other units to make 36 chosen from courses 143, 162B, 168, 199; Art 121A–121B, 147A–147B, 173.

College of Letters and Science

Letters and Science List.—All undergraduate courses except 108, 125, 150, 175 and 176 are included in the Letters and Science List of Courses. For regulations governing this list, see the CIRCULAR OF INFORMATION.

Laboratory Fees.—Courses 1A, 1B, 175, 176, \$1.50; 11B, 108, 136A, 136B, 150, \$2; 119, 199A–199B (Sec. 2), \$2.50; 110, \$3.50; 11A, 12, \$4; 120, 125, \$5; 159, \$7.

LOWER DIVISION COURSES

1A. Elementary Clothing. (3) I, II.

Prerequisite: matriculation credit in "clothing" or Art 2A or 42. Fee, \$1.50.

Fundamental problems of clothing construction, including the use of commercial patterns and the selection, care, and use of equipment.

1B. Elementary Clothing. (3) II.

Prerequisite: course 1A. Fee, \$1.50.

Problems involved in clothing and textile buying; an elementary study of textiles, with attention to prices, quality differences, consumer aids, labels, advertising, and the selection of suitable textiles and designs.

11A. Elementary Food. (3) I, II.

Prerequisite: high school chemistry or Chemistry 1A or 2A. Fee, \$4.

The classification, occurrence, and general properties of foodstuffs; the principles involved in food preparation and preservation; compilation of recipes; practice in judging food preparations and in meal service.

11B. Food Economics. (3) II.

Prerequisite: course 11A. Fee, \$2.

The production, transportation, and marketing of food materials; the legal and sanitary aspects of food products handled in commerce; prices in relation to grades and standards.

12. Dietetics and Food Preparation. (3) I.

Fee, \$4.

The composition of foods, the principles involved in food preparation, the requirements for dietary essentials.

32. Elements of Nutrition. (2) I, II.

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**108. Textiles. (2) II.**

Prerequisite: course 1B, Chemistry 8 or 10. Fee, \$2.

A study of chemical and physical properties of textile materials with opportunity to apply textile analysis to problems in retail buying.

110. Food Analysis. (3) I, II.

Prerequisite: course 118. Fee, \$3.50.

The application of qualitative and quantitative methods to the study of foods.

118. Nutrition. (3) I, II.

Prerequisite: Chemistry 8 or 10, Zoölogy 13.

The chemistry of digestion and the metabolism of carbohydrates, fats, and proteins; a study of minerals and vitamins in relation to human nutrition.

119. Nutrition Laboratory. (2) II.

Prerequisite: Chemistry 8 or 10, Zoölogy 13.

The chemistry of digestion and the metabolism of carbohydrates, fats, and proteins; a study of minerals and vitamins in relation to human nutrition.

120. Diet in Health and Disease. (3) I, II.

Prerequisite: courses 11A, 11B, 118, and Chemistry 8 or 10. Fee, \$5.

Human requirements for dietary essentials for infancy, childhood, adult life; dietary calculations; modification of normal diet for specific diseases.

125. Experimental Cookery. (3) I.

Prerequisite: courses 11A and 110 or Chemistry 9, Chemistry 1A-1B. Fee \$5.

Quantitative methods in food preparation under controlled conditions.

†136A. Institution Economics. (3) II.

Prerequisite: course 11B and Economics 1A-1B. Fee, \$2.

The economic principles and problems involved in the organization and administration of institution households such as residence halls, hotels, hospitals, and school lunchrooms.

†150. Family Food Service. (3) II.

Prerequisite: courses 11A-11B, 118, Art 2A, Chemistry 1A-1B. Fee, \$2.

Organization and management of family food service at different economic levels. Emphasis is placed on standard products, meal service, use and care of kitchen and dining equipment.

159. Metabolism Methods. (3) II.

Prerequisite: course 110 or the equivalent. Fee, \$7.

Observations of the influence of special diets upon various phases of metabolism; practice in the methods of determining blood constituents, basal metabolic rate, and nitrogen and mineral excretions.

† To be given if a sufficient number of students enroll.

162A. The Economic Problems of Families. (2) I.

Distribution of families as to size, composition, domicile, income, and expenditures. Economic and social developments which have influenced the activities of the members of the household and brought about changes in the family's economic problems and standards of living.

162B. Management of Individual and Family Finances. (2) II.

Methods of payment for goods, budgeting, property laws, investments, and insurance; the business cycle as a factor in financial planning.

†164A. Housing. (2) II.

The contemporary housing situation, essentials of healthful housing, improvement in housing, and municipal, state, and federal activities.

168. Family Relationships. (2) II.

Discussions of the contributions of the family to personal and group well-being, of problems of the modern family, and of bases for satisfying family relationships and for successful family life.

170. Clothing Economics. (3) II.

Methods of clothing production and distribution and their effects on clothing costs and values; the consumption of clothing.

†175. Dress Design. (3) II.

Prerequisite: course 1A, Art 21. Fee, \$1.50.

Flat pattern designing; study and construction of coats and suits.

176. Advanced Dress Design. (3) I.

Prerequisite: course 175. Fee, \$1.50.

French draping; selection and manipulation of fabrics; creation of original designs.

199A-199B. Problems in Home Economics. (2-4; 2-4) Yr.

Prerequisite: senior standing with such special preparation as the problem may demand. Section 1, field investigations and statistical studies; the expense of the problem to be met by the student. Section 2, laboratory; fee, \$2.50 a term.

Assigned problems for individual investigation, the work of each student to be directed by the instructor in whose division of the field the problem lies.

GRADUATE COURSES**255. Food Technology. Seminar. (2) II.****282A-282B. Selected Problems. (2-4; 2-4) Yr.**

Laboratory or field investigation in nutrition, foods, or household economics.

ITALIAN (See pages 137-139)

JAPANESE (See page 73)

† To be given if a sufficient number of students enroll.

LIFE SCIENCES GROUP

This group is composed of the departments of Bacteriology, Botany, and Zoölogy, and has been organized for the purpose of unifying and coördinating the activities in these fields. Although no attempt is made to curtail the free development of each department, the special committee in charge of the Life Sciences Group endeavors to articulate, for their mutual benefit, the courses and research work of the three departments concerned.

The announcements of the departments comprising this group appear in their alphabetical order.

BIOLOGY**LOWER DIVISION COURSES****1. Fundamentals of Biology. (3) I, II.**

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

Important principles of biology illustrated by studies of structure and activities of living organisms, both plants and animals.

12. General Biology. (3) II.

Lectures, three hours; demonstration, one hour; one required field trip in the term. Prerequisite: course 1, Botany 1A, or Zoölogy 1.

A course in systematic and ecologic biology with emphasis on local species.

24A-24B. Introduction to Scientific Illustrating. (3-3) Yr.

Lectures, two hours; laboratory, three hours. Prerequisite: the consent of the instructor.

Illustration with particular reference to the life sciences; emphasis upon the various techniques in use, and upon the relation of biological forms to design in art.

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 the CIRCULAR OF INFORMATION.

Preparation for the Major.—Required: courses CF (or the equivalent), 8, 3A, 3B, 4A, 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 8. Recommended: physics, astronomy, and a reading knowledge of French and German.

The Major.—Courses 109 (or 4B), 111, 112A–112B, and 119, together with enough additional upper division units to total 24, must be included in every mathematics major. 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 101, 111, 370.

Business Administration.—Freshmen in this college are required to take courses 8 and 2, except that students who have completed two years of high school algebra and also trigonometry may be excused, upon examination, from course 8.

Pre-Engineering.—The University of California offers at Los Angeles the first two years of the curricula of the College of Engineering, which is in Berkeley. Students intending to pursue their studies in this college should consult the departmental pre-engineering adviser before making out their programs.

The minimum requirements for admission to the courses 3A–3B, 4A–4B are high school algebra, plane geometry, plane trigonometry, and course 8 unless excused as noted above. Prospective engineering students are urged, however, to add, in their high school course, another half-year of algebra and solid geometry to this minimum preparation.

Fees.—Civil Engineering 1FA, 1FB, 4, \$6; Civil Engineering 3, \$25.

LOWER DIVISION COURSES

CF. Trigonometry. (3) I, II.

Prerequisite: two years of high school algebra or course 8. Students with one and one-half years of high school algebra may enroll in course CF concurrently with course 8. Two units only of credit will be allowed to students who have had trigonometry in high school.

†F. Spherical Trigonometry. (1) II.

Prerequisite: plane trigonometry.

2. Mathematics of Finance. (3) I, II.

Prerequisite: course 8.

3A. Plane Analytic Geometry. (3) I, II.

Prerequisite: courses CF and 8, or the equivalent.

3B. First Course in Calculus. (3) I, II.

Prerequisite: course 3A.

† To be given if a sufficient number of students enroll.

3A-3B. Analytic Geometry and First Course in Calculus. (6) II.

Prerequisite: trigonometry and course 8, or the equivalent.

†3K. Analytic and Descriptive Geometry. (2) I.

Prerequisite: course 3A.

4A. Second Course in Calculus. (3) I, II.

Prerequisite: course 3B.

4B. Third Course in Calculus. (3) I, II.

Prerequisite: course 4A. Course 4B may be substituted for Mathematics 109 with the approval of the department.

4A-4B. Second and Third Courses in Calculus. (6) I.

Prerequisite: course 3B.

8. College Algebra. (3) I, II.

Prerequisite: at least one year of high school algebra. Students who need extra drill in this subject will be required to enroll in sections which meet five days a week.

8CF. Algebra and Trigonometry. (6) I, II.

This course covers the material of courses 8 and CF.

10A-10B. Advanced Engineering Mathematics. (4) II.

Prerequisite or concurrent: course 4B.

18. Fundamentals of Arithmetic. (2) I, II.

Prerequisite: sophomore standing.

UPPER DIVISION COURSES

Students may not elect upper division courses unless they have taken or are taking Mathematics 3B and 4A or their equivalent.

101. College Geometry. (3) I.

Prerequisite: course 3A.

Selected topics in geometry with particular emphasis on recent developments.

102. Introduction to Higher Algebra. (3) II.

Prerequisite: courses 8, 3B, 4A.

Selected topics in algebra, with particular reference to modern points of view.

109. Third Course in Calculus. (3) I, II.

Prerequisite: courses 3B and 4A. Course 4B may be substituted for course 109 with the approval of the department.

111. Theory of Algebraic Equations. (3) I, II.

Prerequisite: courses 8, 3B, and 4A.

112A-112B. Introduction to Higher Geometry. (2-2) Yr.

Prerequisite: courses 3B and 4A.

† To be given if a sufficient number of students enroll.

119. Differential Equations. (3) I, II.

Prerequisite: course 109 or its equivalent. Not open for full credit to students who have had course 10B.

122A-122B. Advanced Calculus. (3-3) Yr.

Prerequisite: course 109.

125. Analytic Mechanics. (3) II.

Prerequisite: course 109 or its equivalent, and Physics 105.

128. Potential Theory. (3) I.

Prerequisite: course 109 and one year of college physics.

135. Numerical Mathematical Analysis. (3) II.

Prerequisite: course 4A.

199. Special Problems in Mathematics. (3) I, II.

Prerequisite: the consent of the department.

GRADUATE COURSES**†221A-221B. Higher Algebra. (3-3) Yr.****†224A-224B. Functions of a Complex Variable. (3-3) Yr.****†243. Real Variables—Differential Equations. (3) I.****†244. Real Variables—Integration. (3) II.****260. Seminars in Mathematics. (1 to 3) I, II.**

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.**STATISTICS****LOWER DIVISION COURSE****1. Elementary Statistics. (2) I.**

Emphasis is placed on the understanding of statistical methods. Topics covered are frequency distributions, measures of central tendency, measures of variation, moments, theoretical frequency distributions, sampling, standard errors, linear regression, and linear correlation.

UPPER DIVISION COURSE**131A-131B. Statistics. (3-3) Yr.**

Not open for credit to students who have taken course 1.

† To be given if a sufficient number of students enroll.

CIVIL ENGINEERING

11A-11B. Plane Surveying Lectures. (2-2) Beginning either term.

Prerequisite: trigonometry and geometric drawing.

1FA-1FB. Plane Surveying Field Practice. (1-1) Beginning either term.

Prerequisite or concurrent: course 11A-11B. Fee, \$6 a term.

†4. Plane Surveying. (2) II.

Field practice, calculations, mapping. Prerequisite: course 11B and 1FB. This course replaces course 3 during the war emergency. Fee, \$6.

8. Materials of Engineering Construction. (2) I, II.

Prerequisite: sophomore standing.

15. Engineering Mechanics. (3) II.

Prerequisite: Mathematics 3A.

† To be given if a sufficient number of students enroll.

MECHANIC ARTS

College of Applied Arts

Preparation for the Major.—Mechanical Engineering D; Mechanic Arts 11, 12, 14; 15, 16, 17. Recommended: Physics 2A-2B; Mathematics OF, 8, and Art 2A.

The Major.—Thirty-six units of coördinated upper division courses approved by the department.

The Minor.—Twenty units of coördinated courses, not fewer than 6 of which must be in the upper division.

Special Secondary Teaching Credential in Industrial Arts Education.—For the requirements see the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION, LOS ANGELES.

Laboratory Fees.—Mechanic Arts 11, 12, 14, 17, 21, 24, 29A, 29B, 101, 102, 104, 107A, 107B, 111, 112, 114, 121, 135, 145, 155, \$3.50; Mechanical Engineering 10B, \$6.

MECHANICAL ENGINEERING§

D. Engineering Drawing. (3) I, II.

Lettering, orthographic projection, pictorial representation, developed surfaces and intersections, dimensioning, fastenings for machinery, working drawings, topographical drawing.

†1. Elements of Heat Power Engineering. (3) I.

Heat engines, steam power plants, boiler room equipment, steam engines, turbines; Diesel and other internal combustion engines; fuels.

2. Descriptive Geometry. (3) I, II.

Lecture, one hour; laboratory, six hours.

6. Machine Drawing. (3) I, II.

Lecture, one hour; laboratory, six hours.

Design and delineation of simple machine parts in the drafting room, with special emphasis upon the production of drawings which conform to standard practice.

†10B. Treatment of Engineering Materials. (2) I, II.

Prerequisite: Civil Engineering, 8. Fee, \$6.

MECHANIC ARTS

LOWER DIVISION COURSES

†11. Bench and Machine Work in Wood. (3) I.

Fee, \$3.50.

Fundamental hand tool and joinery operations; the layout and development of joints essential in wood construction. Maintenance and operation of stationary and portable woodworking machinery.

§ The University of California offers at Los Angeles the first two years in preparation for admission to the junior year of the College of Engineering at Berkeley. Students intending to pursue their studies in this college should present their programs for approval to the pre-engineering adviser.

† To be given if a sufficient number of students enroll.

†12. **General Metal Work.** (3) I.

Fee, \$3.50.

A survey of the fundamental elements of metal work; metals and metal working processes; construction of articles with applications involving industrial design; metalcraft, gem cutting and jewelry making.

†14. **Elements of Practical Electricity.** (3) I.

Fee, \$3.50.

The fundamental principles of electricity, both direct current and alternating current, electric and magnetic circuits; electrical measuring instruments and other simple electrical equipment.

†15. **Automobile Problems for the Purchaser and User.** (3) I, II.

Lectures and demonstrations.

The operation of the modern automobile; unit study. Fuel; lubrication; tires, accessories, and supplies. Analysis of repairs; operation for safety and economy. Financing; insurance; depreciation. Future developments in motor cars.

†16. **Architectural Drawing.** (2) I.

An introduction to architectural drawing; the house, plans, elevations, sections, working drawings; architectural symbols and details; perspective drawing; lettering; reproduction by the blue print and other printing processes.

17. **Machine Shop.** (3) I, II.

Fee, \$3.50.

Elementary machine shop practice; fundamental operations and tool processes; operations of standard power tools. Layout and bench work. Distinguishing various metals; working from blue prints and sketches; tool sharpening.

†21. **General Woodwork.** (2) II.

Fee, \$3.50.

Fundamentals of construction as applied to recreational activities; skis, paddle boards and small boats.

†24. **Elementary Electronics and Radio Circuits.** (3) I, II.

Fee, \$3.50.

A course for the beginner in radio, covering high frequency circuits and the use of thermionic vacuum tubes. Laboratory work in set construction and repair, and in the use of testing equipment.

†25. **Elements of Aeronautics.** (3) I, II.

A general survey of the field of aeronautics, including principles of flight, control of aircraft, essentials of servicing and operation, power plant types, materials, elements of navigation, weather, safety and civil air regulations.

†29A-29B. **Applied Photography.** (2-2) Yr.

Fee, \$3.50 a term.

Fundamentals of photography; exposure, developers and their characteristics, films, filters, and development of negatives and prints. Contact and projection printing; composition; photomicrographs.

† To be given if a sufficient number of students enroll.

UPPER DIVISION COURSES

†101. **Cabinet Making. (3) I.**

Fee, \$3.50.

Case and furniture making with emphasis on variety of typical elements. Preparation and application of paints, stains, varnishes and lacquers.

†102. **General Shop. (3) I, II.**

Fee, \$3.50.

Fundamentals of handicraft: shop procedures and properties of materials used in craft projects. The tooling of copper and leather, glass etching, sand blasting, plaster casting; types of finishes; the uses, properties, and handling of plastics.

104. **Alternating Currents. (3) II.**

Prerequisite: course 14, Physics 1C, or Physics 2B. Fee, \$3.50.

Electrical theory and applications, with particular attention to generators, motors, and transformers; circuit testing, switchboard work, and the use of electrical measuring instruments.

†106A-106B. **Industrial Drawing. (2-2) Yr.**

Technical sketching, lettering, assembly and detail drawings, design, tracing and reproduction.

†107A-107B. **Machine Shop. (3-3) Yr.**

Prerequisite: course 17; no prerequisite for graduate students on consent of the instructor. Fee, \$3.50 a term.

Advanced machine shop practice. Layout work and use of precision instruments; machine construction and repair; principles of tool and die work; jigs and fixtures; individual projects and model making.

†111. **Wood Pattern Making. (3) II.**

Fee, \$3.50.

Pattern making and foundry practice.

†112. **General Metal Work. (3) II.**

Fee, \$3.50.

A study of ferrous and nonferrous metals. The use of hand tools and machines and their application to metal working. Bench work and heat treatments; forging and ornamental iron work; oxyacetylene and electric arc welding; foundry practice and metal casting.

†114. **Industrial Arts Electricity. (3) II.**

Prerequisite: course 14, Physics 1C or 2B. Fee, \$3.50.

The design and construction of simple electrical and radio projects, particularly those suitable for teaching purposes in secondary schools.

†121. **Industrial Arts Woodwork. (2) II.**

Fee, \$3.50.

Design and development of projects in wood suitable for classes in secondary schools.

† To be given if a sufficient number of students enroll.

†135. Automotive Power Plants. (3) I.

Fee, \$3.50.

Diesel and gasoline engines; principles of operation in laboratory and field; fuels and lubricants; drives and controls. Practice in taking down, assembling and adjusting. Survey of Diesel fuel systems and their operation. Approved methods of maintenance. Field trips to industrial plants.

†145. Automotive Laboratory. (3) II.

Fee, \$3.50.

Principles of the automobile and its adjustment. The taking down, assembly, and operation of automotive units. Diagnostic tests and measurements for mechanical condition. Study of tolerances and clearances of the various parts. Survey of fuels, lubricants and problems of automotive lubrication.

†155. Automotive Service. (3) II.

Fee, \$3.50.

Principles of automobile service; engines and engine reconstruction; trouble location, "tune up" methods. Automotive electrics, storage batteries and circuits. Body and fender maintenance methods.

199A-199B. Special Problems in Technical Related Subjects. (2-2) Yr.

Tools, materials, processes of industry, and special studies in the field of mechanic arts.

PROFESSIONAL COURSE IN METHOD**†370. Industrial Arts Education. (2) II.**

A study of the objectives, content, organization, methods, and techniques of teaching the industrial arts in the secondary schools.

† To be given if a sufficient number of students enroll.

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 the CIRCULAR OF INFORMATION.

The courses in military training are those prescribed by the War Department for infantry and coast artillery units of the senior division of the Reserve Officers' Training Corps. The United States furnishes arms, equipment, uniforms, and some textbooks for the use of the students belonging to such units. An amount necessary to replace articles not returned by the students will be collected by the Cashier.

The student who is found by the Medical Examiner to be ineligible for enrollment in military science and tactics may be assigned by the Examiner to the individual gymnastics section of Physical Education for Men 3.

BASIC COURSE

The purpose of this course is to produce better citizenship through sound character development, under the guidance of the Constitution of the United States.

The basic course is prescribed for all first-year and second-year undergraduates male students who are citizens of the United States, able-bodied and under twenty-four years of age at the time of admission to the University. A first-year or second-year student claiming exemption because of non-citizenship, physical disability, or age 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.

1A-1B. Basic Military Training. (1½-1½) Yr.

Two hours of field instruction and one hour of class instruction each week.

Instruction in National Defense Act. Obligations of citizenship, military history and policy, current international situation, military courtesy, military hygiene and first aid, map reading, military organization, rifle marksmanship, primary instruction in Coast Artillery ammunition, weapons and material, and leadership to include the duties of a private.

2A-2B. Basic Military Training. (1½-1½) Yr.

Two hours of field instruction and one hour of class instruction each week.

Instruction in characteristics of infantry weapons, automatic rifle, musketry, scouting and patrolling, combat principles of the squad; primary Coast Artillery instruction in position finding for antiaircraft artillery; leadership to include the duties of a corporal.

MILITARY BAND AND DRUM AND BUGLE CORPS

Students who play musical instruments suitable for use in the Military Band or in the Drum and Bugle Corps may take such work under the appropriate sections of courses 1A-1B, 2A-2B.

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 except 7A-7B, 26A-26B, 27A-27B, 46A-46B-46C-46D, 108A-108B, and 115A-115B are included in the Letters and Science List of Courses. For regulations governing this list, see the CIRCULAR OF INFORMATION.

Preparation for the Major.—Courses 1A-1B, 2A-2B, 14A-14B, 35A-35B. Recommended: a reading knowledge of French, German, Italian, or Spanish, Physics 10A-10B, and some ability in piano playing.

The Major.—Twenty-four units of upper division courses, including (a) course 104A-104B; (b) 6 units chosen from courses 111A-111B, 124, 125, 126, 127, 128, 129, 130, 131, 134, 136, 138, 142, 145, 151, 199, sec. 2; and (c) 14 units chosen from courses 105A-105B, 106A-106B, 109A-109B, 114A-114B, 122A-122B, 199, sec. 1, and courses under (b) not duplicated. By arrangement with the department, four units chosen from courses 110A-110B, 116A-116B, and 117A-117B may be substituted for four units under (c).

College of Applied Arts

Two curricula are available:

A. For the bachelor's degree alone.

Preparation for the Major.—Courses 1A-1B, 2A-2B, 14A-14B, 35A-35B. Recommended: a reading knowledge of French, German, Italian, or Spanish, Physics 10A-10B, and some ability in piano playing.

The Major.—Thirty-six units of upper division courses, including (a) course 104A-104B; (b) 6 units chosen from courses 111A-111B, 124, 125, 126, 127, 128, 129, 130, 131, 134, 136, 138, 142, 145, 151, 199, sec. 2; and (c) 26 units chosen from upper division courses in music, with the exception of courses 108A-108B and 115A-115B. Six to 8 units of upper division courses in related fields will be accepted upon departmental approval.

B. For the bachelor's degree leading to the special secondary teaching credential. This curriculum meets the departmental requirements for admission to the graduate courses leading to the general secondary credential.

Preparation for the Major.—Courses 1A-1B, 2A-2B, 7A-7B, 14A-14B, 35A-35B. Recommended: a reading knowledge of French, German, Italian, or Spanish, Physics 10A-10B, and some ability in piano playing.

The Major.—Courses 104A-104B, 105A-105B, 108A-108B, 109A-109B, 115A-115B; 6 units chosen from courses 111A-111B, 124, 125, 126, 127, 128, 129, 130, 131, 134, 136, 138, 142, 145, 151, 199, sec. 2; together with 12 additional units in upper division courses in music. Six to 8 units in related fields will be accepted upon departmental approval.

The Minor in Music.—Twenty units of coordinated courses, 6 of which must be in the upper division.

An acceptable minor with emphasis upon community music consists of course 1A-1B, together with not more than 8 other lower division units chosen from courses 9A-B-C-D, 10A-B-C-D, 26A-26B, 27A-27B, 37A-37B, and 46A-B-C-D. The upper division courses consist of 109A-109B, 145, and 2 or more units chosen from courses 110A-110B, 116A-116B, 117A-117B, and 151.

An acceptable minor with emphasis upon administration and direction of bands and orchestras consists of courses 1A-1B, 35A-35B, together with not more than 2 other lower division units chosen from courses 26A-26B, 27A-27B, and 46A-B-C-D. The upper division courses consist of 109A-109B and 114A-114B.

LOWER DIVISION COURSES

1A-1B. Solfege. (3-3) Beginning either term.

Elementary theory, dictation, and music reading. Basic course for the major in music.

2A-2B. The History and Appreciation of Music. (2-2) Yr.

The consideration of music from formal, aesthetic, and historical standpoints.

7A-7B. Elementary Voice. (2-2) Yr.

Restricted to music majors working toward the special secondary and the general secondary teaching credentials.

9A-B-C-D. Chorus and Glee Club. (1 unit each term.)

***10A-B-C-D. University Symphony Orchestra. (2 units each term.)**

Prerequisite: the consent of the instructor.

The study and performance of standard symphonic literature.

11A-B-C-D. A Cappella Choir. (2 units each term.)

Prerequisite: the consent of the instructor.

The study and performance of standard choral works for unaccompanied voices.

14A-14B. Counterpoint. (2-2) Yr.

Prerequisite: course 35A-35B.

***26A-26B. Brass, Intermediate. (2-2) Yr.**

Prerequisite: the consent of the instructor.

Technical studies, ensemble playing, and repertoire for brass wind instruments.

***27A-27B. Woodwind, Intermediate. (2-2) Yr.**

Prerequisite: the consent of the instructor.

Technical studies, ensemble playing, and repertoire for woodwind instruments.

35A-35B. Harmony. (3-3) Yr.

Prerequisite: course 1A-1B or its equivalent; may be taken concurrently with 1A-1B with the consent of the instructor.

37A-37B. Piano, Intermediate. (2-2) Yr.

46A-B-C-D. University Band. (1 unit each term.)

Prerequisite: the consent of the instructor.

* To be given fall term only, 1943-1944.

UPPER DIVISION COURSES

The piano requirement for music majors, prerequisite to junior standing, is the ability to play such music as the accompaniments in the Teacher's Manuals of the Music Hour Series and the Progressive Series, four-part hymns and folk songs, and contrapuntal compositions equivalent to 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.

104A-104B. Form and Analysis. (2-2) Yr.

Prerequisite: course 35A-35B.

Analysis of homophonic and contrapuntal music.

105A-105B. Composition. (2-2) Yr.

Prerequisite: courses 14A-14B, 35A-35B, 104A-104B, and the consent of the instructor; 104A-104B may be taken concurrently.

Vocal and instrumental compositions in the smaller forms.

106A-106B. Structural Functions of Harmony. (2-2) Yr.

Prerequisite: courses 35A-35B, 104A-104B (may be taken concurrently).

The application of harmonic progressions to form and composition.

108A-108B. Advanced Voice. (2-2) Yr.

Prerequisite: course 7A-7B. Restricted to music majors working toward the special secondary and the general secondary credentials.

109A-109B. Conducting. (1-1) Yr.

Prerequisite: courses 1A-1B; 35A-35B, or the consent of the instructor.

The theory and practice of conducting choral and instrumental organizations.

***110A-110B. Chamber Music Ensemble. (2-2) Yr.**

Prerequisite: the consent of the instructor.

The study and interpretation of chamber music literature.

111A-111B. History of Music in Western Civilization. (3-3) Yr.

Prerequisite: courses 2A-2B, 35A-35B, or their equivalent.

The stylistic development of music with a background of its relationship to other arts and to culture in general.

114A-114B. Instrumentation. (2-2) Yr.

Prerequisite: course 35A-35B.

The theory and practice of writing for instrumental ensembles. The study of orchestral scores and an introduction to symphonic orchestration.

115A-115B. Instrumental Technique and Repertoire. (2-2) Yr.

Prerequisite: course 35A-35B. Restricted to music majors working toward the special secondary and the general secondary credentials.

A theoretical and practical study of the instruments of the orchestra and band, including the principles of arranging music for representative combinations. Appropriate literature for instrumental ensembles.

* To be given fall term only, 1948-1944.

116A-116B. Piano, Advanced. (2-2) Yr.

Prerequisite: the consent of the instructor.

117A-117B. Madrigal Choir. (2-2) Yr.

Prerequisite: the consent of the instructor.

The study and performance of significant music of the madrigal school.

***122A-122B. Advanced Counterpoint. (2-2) Yr.**

Prerequisite: course 14A-14B, and the consent of the instructor.

Invertible counterpoint, choral prelude and fugue.

126. The History of the Sonata. (2) I.

Prerequisite: courses 2A-2B, 35A-35B.

The development of the sonata from its beginnings to the close of the romantic period.

128. Modern Tendencies in Music. (2) II.

Prerequisite: courses 14A-14B, 35A-35B.

A study of form, style, and idiom in contemporary music.

130. History and Literature of Church Music. (2) II.

Prerequisite: courses 2A-2B, 35A-35B.

A study of the history and development of church music, including worship forms and liturgies.

131. Oratorio Literature. (2) I, II.

Prerequisite: courses 2A-2B, 35A-35B.

A survey of oratorio music from its inception until the present day.

134. Brahms. (2) I.

Prerequisite: course 2A-2B or its equivalent.

136. Folk Music. (2) I.

Prerequisite: the consent of the instructor.

Origins, types, and illustrations of the folk music of various countries.

138. Music and Politics in Modern Europe. (2) II.

Prerequisite: the consent of the instructor.

The interrelationship between political ideologies and the arts, particularly music, in Soviet Russia, Nazi Germany, and Fascist Italy; the cultural policies of totalitarianism; the state as a patron of music.

142. History of Music in America. (2) I.

Prerequisite: course 2A-2B or its equivalent.

A survey of music in the United States from the colonial period to the present day.

* To be given fall term only, 1948-1944.

151. Music for the Theater, Cinema, and Radio Drama. (2) I.

Prerequisite: course 2A-2B or its equivalent.

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.

199. Special Studies in Music. (2) II.

Prerequisite: the consent of the instructor.

GRADUATE COURSES**205. History of Pianoforte Style. (2) II.****207. The Variation Forms. (2) I.**

Prerequisite: courses 105A-105B and 111A-111B or their equivalents.

253A-253B. Seminar in Musicology. (3-3) Yr.

Prerequisite: course 111A-111B or the equivalent.

261. Special Studies for Composers. Seminar. (2) I.**PROFESSIONAL COURSES IN METHOD****330. Elementary Music Education. (3) I, II.**

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.

Prerequisite: junior standing. Course 370B is required of candidates for the general secondary credential with music as a major.

Organization and administration of music in secondary schools.

NAVAL SCIENCE AND TACTICS

Letters and Science List.—All undergraduate courses in this department are included in the Letters and Science List of Courses. For regulations governing this list, see the CIRCULAR OF INFORMATION.

NAVAL RESERVE OFFICERS' TRAINING CORPS

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

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

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

Beginning with the summer term, 1943, all enrollments in the Naval R.O.T.C. will be made from students who have completed the first two terms of the Navy V-12 program. Selected students are given four additional consecutive terms in advanced naval subjects leading to a commission as Ensign in the U. S. Naval Reserve or as 2d Lieutenant in the U. S. Marine Corps Reserve. After one year of active service in the Fleet, or comparable service in the field in the Marine Corps, such graduates may become eligible for a commission in the regular Navy or Marine Corps.

Second Class

†1B. Seamanship. (1) II.

Types of ships, the hull and fittings of a ship, ground tackle, docking, mooring, elementary ship handling, station keeping and maneuvering.

†2A-2B. Ordnance. (1-1) Yr.

Practical and theoretical use of small arms; elementary principles of gun construction and of the manufacture and use of explosives and projectiles.

†3. Naval History. (1) I.

The history of the United States Navy from 1775 to the present time.

†4. Communications. (1) II.

Visual signal methods and procedure, flags, Morse code and semaphore.

10. Navigation and Piloting. (2) I.

Lectures and practical work, two hours. Prerequisite: trigonometry.

Introduction to practical navigation, the compass, the sailings, lines of position, piloting, chart work.

† To be given if a sufficient number of students enroll.

11A-11B. Seamanship. (1-1) Yr.

Weather and the laws of storms; handling of ships within the storm area; ocean currents and icebergs; rules for preventing collisions at sea; advanced ship handling; naval leadership.

12. Ordnance. (1) I.

Details of naval guns, sights and mounts, ammunition details, manufacture, proof, and use of armor, chemical warfare, and safety precautions.

15. Electricity. (1) I.

Electromagnetism, storage batteries, generators, motors, and shipboard electrical applications.

20. Navigation and Nautical Astronomy. (3) I.

Lectures two hours weekly; classroom practical work two hours biweekly; sextant field work as directed. Prerequisite: course 10.

Nautical astronomy, circles of equal altitude, sextant and chronometer, computed altitude and azimuth, time, nautical and air almanacs, latitude, practical observations of heavenly bodies, day's work, tides and currents, maneuvering board.

24. Communications. (1) II.

Organization and operation of the Naval Communication Service.

*First Class**

30. Navigation and Nautical Astronomy. (3-3) Yr.

Lectures two hours weekly; classroom practical work two hours biweekly; sextant field work as directed. Prerequisite: course 20.

A continuation of course 20.

32. Gunnery. (1) I.

Elementary principles of naval gunnery training and fire control, methods and means of firing, range finding and range keeping; the fire control problem as applied to different types of ships.

36. Aviation. (1) II.

Mission and history of naval aviation, types and uses of naval aircraft, aircraft carriers, aircraft engines and instruments, aerial navigation.

38. Gunnery. (1) II.

Torpedo and anti-aircraft control; submarine mines and depth charges; offensive and defensive tactics; elementary exterior ballistics.

39A-39B. Administration. (1-1) Yr.

Naval policy and administration, naval organization ashore and afloat, Navy regulations, discipline, Naval Reserve regulations, international law.

* Upper division students may receive upon petition upper division credit for courses under this heading.

OCEANOGRAPHY

The courses in oceanography are given at the Scripps Institution of Oceanography at La Jolla, California. For further information concerning the Institution write to the Director.

Advanced degrees.—Work leading to the master's or Ph.D. degree in oceanography and certain other marine sciences is offered to a limited number of qualified students subject to the rules and regulations of the University as set forth in the ANNOUNCEMENT OF THE GRADUATE DIVISION, SOUTHERN SECTION. The student must be well trained in the fundamentals before coming to La Jolla. Usually at least two terms of resident work at Los Angeles or Berkeley will be required of prospective candidates for the doctor's degree, and at least one term 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) course 101 (3); (g) basic courses in one or more of the biological sciences (8). Preparation in physical chemistry, organic chemistry, integral calculus, and geology is recommended.

In addition to these preliminary requirements the student is required to complete at least 2 units of work in each of four marine sciences besides the research work in his special field.

Requirements for an advanced degree in other fields of study.—Through a cooperative arrangement with other departments of the University, a student may do his research work in certain fields of study closely related to oceanography; i.e., biochemistry, physicochemical biology, geological sciences, microbiology, comparative physiology, and zoölogy. The preliminary requirements are the same as those listed under the corresponding departments or fields of study in this catalogue and in the ANNOUNCEMENT OF THE GRADUATE DIVISION, SOUTHERN SECTION. In addition the student is required to complete at least 2 units of work in each of three marine sciences besides course 101 and 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 COURSE

199A–199B. Special Studies in Marine Sciences. (2–4; 2–4) Yr.

Introduction to the research problems, experimental methods and literature of the different marine sciences listed below. Open to advanced students by special arrangement with the chairman of the division in which the work is to be done, subject to the approval of the Director of the Institution.

GRADUATE COURSES

250A-250B. Seminar in Oceanography. (1-1) Yr.

Research Courses

The following are primarily research courses in the different aspects of oceanography. 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 the fall term.

281A-281B. Physical Oceanography. (2-4; 2-4) Yr.

A study of the physical properties of sea water, oceanic circulation and its causes.

282A-282B. Marine Meteorology. (2-4; 2-4) Yr.

Interrelations between the circulation of the oceans and that of the atmosphere.

284A-284B. Chemical Oceanography. (2-4; 2-4) Yr.

Chemistry applied to the study of sea water, plankton and other marine materials.

285A-285B. Marine Microbiology. (2-4; 2-4) Yr.

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.

286A-286B. Phytoplankton. (2-4; 2-4) Yr.

Qualitative and quantitative studies of marine phytoplankton.

288A-288B. Marine Biochemistry. (2-4; 2-4) Yr.

Comparative biochemistry of marine animals; biochemical relationships between marine organisms and certain environmental factors.

289A-289B. Biology of Fishes. (2-4; 2-4) Yr.

The ecology and physiology of fishes with special reference to problems of adaptation to specific factors of marine environment.

290A-290B. Comparative Physiology. (2-4; 2-4) Yr.

Studies of various physiological functions with special reference to evolutionary position and environmental factors.

PHILOSOPHY

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 the CIRCULAR OF INFORMATION.

Preparation for the Major.—Twelve units of lower division courses in philosophy, including courses 20, 21.

The Major.—Twenty-four units in upper division courses, 6 of which may be in related courses in other departments with the approval of the departmental adviser. At the beginning of the senior year, the student must submit for approval to the department a statement of the courses which he expects to offer in fulfillment of major requirements for graduation.

LOWER DIVISION COURSES

All lower division courses are introductory and carry no prerequisites.

2A-2B. Introduction to Philosophy. (3-3) Yr.

Introducing the student to the central problems of philosophy in their relations to science and society.

4. Short Introduction to Philosophy. (2) II.

Not open for credit to students who have completed 2A.

This course acquaints the student with the chief problems and types of philosophy.

20. History of Greek Philosophy. (3) I, II.

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.

The main developments in modern philosophy from the Renaissance to the present.

22. Deductive Logic. (3) I.

The elements of formal logic; Aristotle's logic; modern symbolic logic. The forms of reasoning and the fallacies.

23. Inductive Logic and Scientific Method. (3) II.

Logic in use; the place of formal reasoning in science and practical life; the canons of scientific method; hypothesis and probability; statistical method.

UPPER DIVISION COURSES

Upper division courses in philosophy include: (a) *General Studies* (numbered 100 to 150), dealing with the principles of wide fields of inquiry such as the natural sciences, the social sciences, and the humanities; these courses are open to students who in the judgment of the instructor have adequate preparation in philosophy or in the special field under study. (b) *Historical Studies* (numbered 151 to 178), dealing with special periods or with individual thinkers. (c) *Systematic Studies* (numbered 180 to 198), 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.

101. Living Philosophies. (1) II.

A series of lectures: Plato, Aristotle, Aquinas, Bacon, Descartes, Hume, Kant, Hegel, J. S. Mill, Nietzsche, Bergson, Royce, James, Dewey.

104A. Ethics. (3) I.

Morality in theory and practice: the history and development of ethical theory.

104B. Ethics. (3) II.

Morality in theory and practice: 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, free-will, the problem of evil, the relation of church and state, the rivalry of living religions.

121. Political Philosophy. (3) I.

The theory of democracy: in concepts of the individual and the state; the state and society; critique of absolutistic doctrines.

124. Nineteenth-Century Philosophy. (3) I.

A study, in terms of outstanding philosophers, of the social and scientific movements of the nineteenth century.

141B. Present Tendencies of Thought. (2) I.

A general survey of contemporary philosophers and philosophies, centering about pragmatism, positivism, and scientific empiricism.

147. Philosophy of History. (3) II.

The problems of historical knowledge and historical method; the relativists, Beard, Croce, etc.; dialectical history; the relation of history to theory; the establishment of historical truth.

Historical Studies

152. Plato and His Predecessors. (3) I.

153. Aristotle and Later Greek Philosophy. (3) II.

†166. Kant. (2) II.

The three Critiques in their content and interrelation.

†174. Contemporary Philosophy: Realism. (2) II.

Theories of knowledge and nature in Alexander, Moore, Russell, Santayana, Whitehead, Woodbridge, and others.

Systematic Studies

†183. Social Philosophy. (2) II.

Basic concepts and methods of the social sciences; their relation to the biological and physical sciences, and their bearing on our time.

† To be given if a sufficient number of students enroll.

†185. Foundations of Probability and Statistics. (3) II.

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.

199A-199B. Selected Problems in Philosophy. (2-3; 2-3) Yr.

Admission by special arrangement.

GRADUATE COURSES**263. Seminar: Epistemology. (3) I.****†264. Seminar: Logic. (3) II.****298A-298B. Special Study: Selected Problems in Philosophy. (2-4; 2-4) Yr.**

† To be given if a sufficient number of students enroll.

PHYSICAL EDUCATION FOR MEN

Physical Education 3 is prescribed for all first-year and second-year undergraduate male 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.

Medical Examination.—(a) Students entering the University for the first time and (b) reëntering students must pass a medical examination upon admission. All students are given an examination each year. The examiner may exempt the student from required military training; he may assign the student to a restricted exercise section of Physical Education 3.

College of Applied Arts

The Department of Physical Education for Men offers the following curricula:

A. Curriculum for Prospective Teachers.

Preparation for the Major.—Chemistry 1A or 2A; Zoölogy 1 and 13 (or 15), 35; Physical Education for Men 1, 5, 6, 7, 8, 9, 30, 40.

The Major.—Thirty-six units of upper division courses in physical education and related fields, including courses *120, 131, 140, 149, 182, *190, *192A–192B, 356A–356B, and 10 units to be selected from *104B, *114A, *180, 191, 199A–199B, Education 111, 112, Psychology 110.

The Special Secondary Teaching Credential.—In addition to the major, courses 354 and 355A–355B are required, and 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.

B. Curriculum in Physical Therapy.

The curriculum in physical therapy is designed for students who are interested in corrective physical education and therapeutic exercise rather than in teaching. It prepares the student for the professional course offered at the University of California Hospital, Los Angeles Children's Hospital, or any other school of physical therapy approved by the American Medical Association.

Preparation for the Major.—Chemistry 2A, Physical Education 5, 30, *44, Physics 10A–10B, Zoölogy 1 and 13 (or 15), 35. Recommended: Art 27A–27B, Psychology 21, and 22 or 23, Public Speaking 1A–1B or 2A–2B, Sociology 30A–30B.

The Major.—Physical Education 149, 182, *183, *185, *190, *192A–192B, and 16 units to be selected from *104A–104B, *114A–114B, *120, *180, *184, Education 110, 111, 112, 160, 180, Psychology 108, 112, 168.

* Listed under Physical Education for Women.

C. Curriculum for Group Major in Dance.

Preparation for the Major.—Art 1A-1B, 2A-2B, 48, English 1A-1B, 36A-36B, Physical Education *31. Recommended: Chemistry 2A, French 1, 2, Music 2A-2B, Philosophy 2A-2B, or 20 and 21, or 22 and 23, Psychology 21, and 22 or 23, Zoölogy 1 and 13 (or 15), 35.

The Group Major.—Art 101B or 168A, English 114A-114B, Philosophy 136, Psychology 135 or 138, 177, Physical Education *114A, *120, *130A-130B, *135, *136, *321C-321D, and 3 or 4 units to be selected from courses *104A-104B, *114B, 131, *172, *180, *190, *192A, *193. Recommended minor: Art or English.

The Minor in Physical Education.—Twenty units of coördinated courses, not less than 6 of which must be in closely related upper division courses.

College of Letters and Science†

Letters and Science List.—Courses 1 and 3 are included in the Letters and Science List of Courses. For regulations governing this list, see the CIRCULAR OF INFORMATION.

LOWER DIVISION COURSES

1. Hygiene and Sanitation. (2) I, II.

**3. Prescribed Physical Education for Freshmen and Sophomores. (1) I, II.

Classes meet three times weekly. Section assignments are made by the department after students have been classified, according to their performance in the "General Athletic Ability Test" given by the staff to all entering men during the first week of each term. Physical Education 3 may be elected by students in the junior and senior years.

Archery, baseball, basketball, boxing, cricket, dance fundamentals, fencing, folk dancing, American football, golf, group games, elementary tumbling and apparatus, handball, rugby, soccer, social dancing, swimming, tennis, track, water polo, wrestling, restricted gymnastics.

5. First Aid and Bandaging. (2) I, II.

The care of common accidents and emergencies on the playground and athletic field.

8. Professional Activities (Men). (1½) I.

A continuation of course 7.

9. Professional Activities (Men). (1½) II.

A continuation of course 8.

13. Physical Fitness. (1) I, II.

A minimum of five hours of activity designed to provide a conditioning program to meet the requirements of the Armed Forces. The activities are swimming, gymnastics, defense, physical contact games, obstacle course, and cross country.

* Listed under Physical Education for Women.

† The University of California at Los Angeles does not offer a major in physical education in the College of Letters and Science. In the College of Letters and Science at Berkeley a combination major of physical education and hygiene may be taken. Students planning to become candidates for the degree of Bachelor of Arts at Berkeley are referred to the publications of the departments at Berkeley.

** For full statement of the requirement of this course refer to the CIRCULAR OF INFORMATION.

30. Introduction to Physical Education. (1) I.

The scope and significance of physical education in the modern school program.

40. The Technique of Teaching Swimming and Life Saving. (2) I, II.

Preparation for and conduct of the Red Cross Life Saving Test and the Red Cross Life Saving Examiner's Test; advanced techniques in teaching swimming.

UPPER DIVISION COURSES

131. Administration of Physical Education. (3) II.

Prerequisite: Physical Education for Women 120.

The scope of the field of physical education and its relation to modern education theory. Details of the organization of physical education activities, organization and classification of children, planning of school programs, arrangement and construction of equipment and the principles which govern these.

140. Physical Education Tests and Measurements. (2) I.

Anthropometric measurements, cardiovascular and physiological ratings, physical efficiency, and motor ability tests. Common tests used in physical education; statistical method applied to physical education measurement.

149. Kinesiology. (3) I.

Prerequisite: Zoölogy 35.

182. Corrective Physical Education. (3) II.

Two clinic hours a week to be arranged in addition to lecture and demonstration periods. Prerequisite: course 149.

The application of massage and exercise to the treatment of orthopedic and remedial conditions.

191. Conditioning of Athletes and Care of Injuries. (2) II.

Lecture, one hour; laboratory, three hours. Prerequisite: course 190.

Modern principles and practices in conditioning and care of athletes; individual variation and needs as to sleep, diet, health, and activity habits; care of injuries, including massage, physiotherapy, taping, and protective equipment.

199A. Problems in Physical Education. (1-4) I, II.

GRADUATE COURSES

250A-250B. Seminar in Physical Education. (3-3) Yr.

Prerequisite: the consent of the instructor.

A study of the theory of physical education, a critical review of selected studies, literature, and practices.

276. Research in Physical Education. (2) I.

Prerequisite: the consent of the instructor.

The meaning, methods, and techniques of research procedure; applications of this training to the independent solution of a problem.

278. Research Problems. (2 to 4) II.

Prerequisite: the consent of the instructor.

For advanced students who have problems in organization, administration, or biological backgrounds of physical education.

PROFESSIONAL COURSES IN METHOD**354. The Technique of Teaching Elementary School Activities. (2) II.**

The technique of teaching activities in the elementary school leading up to games of higher organization.

356A. The Technique of Teaching Athletic Activities. (2) I.

Prerequisite: courses 6, 7, 8, 9, and the consent of the instructor.

Track, rugby, and basketball.

356B. The Technique of Teaching Athletic Activities. (2) II.

Prerequisite: courses 6, 7, 8, 9, and the consent of the instructor.

Football, baseball, and soccer.

PHYSICAL EDUCATION FOR WOMEN

College of Applied Arts

The Department of Physical Education for Women offers the following curricula:

A. Curriculum for Prospective Teachers.

Preparation for the Major.—Courses 5, 30, 31, 32, 44, Chemistry 1A or 2A; Zoölogy 1 and 13 (or 15), 35.

The Major.—Thirty-six units of upper division courses in physical education and related fields, including courses 120, 149, 171, 172, 182, 190, 192A–192B, and 15 units to be selected from 104A–104B, 114A–114B, 130A–130B, †131, 135, 136, †140; 180, 183, Education 111, 112, 180, Psychology 110.

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.—A teaching major of from 40 to 54 units is required, of which not less than 24 units are upper division or graduate courses approved by the School of Education. For other requirements, including those of the minor, consult the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION, LOS ANGELES.

B. Curriculum in Physical Therapy.

The curriculum in physical therapy is designed for students who are interested in corrective physical education and therapeutic exercise rather than in teaching. It prepares the student for the professional course offered at the Los Angeles Children's Hospital, or any other school of physical therapy approved by the American Medical Association.

Preparation for the Major.—Chemistry 2A, Physical Education 5, 30, 44, Physics 10A–10B, Zoölogy 1 and 13 (or 15), 35. Recommended: Art 27A–27B, Psychology 21, and 22 or 23, Public Speaking 1A–1B or 2A–2B, Sociology 30A–30B.

The Major.—Physical Education 149, 182, 183, 185, 190, 192A–192B, and 16 units to be selected from 104A–104B, 114A–114B, 120, 180, 184, Education 110, 111, 112, 160, 180, Psychology 108, 112, 168.

C. Curriculum for the Group Major in Dance.

Preparation for the Major.—Art 1A–1B, 2A–2B, 48, English 1A–1B, 36A–36B, Physical Education 31. Recommended: Chemistry 2A, French 1, 2, Music 2A–2B, Philosophy 2A–2B, or 20 and 21, or 22 and 23, Psychology 21, and 22 or 23, Zoölogy 1 and 13 (or 15), 35.

The Group Major.—Art 101B or 168A, English 114A–114B, Philosophy 136, Psychology 135 or 138, 177, Physical Education 114A, 120, 130A–130B, 135, 136, 321C–321D, and 3 or 4 units to be selected from courses 104A–104B, 114B, †131, 172, 180, 190, 192A, 193. Recommended minor: Art or English.

The Minor in Physical Education.—Twenty units of coördinated courses, not less than 6 of which must be in closely related upper division courses.

† Listed under Physical Education for Men.

College of Letters and Science*

Letters and Science List.—Courses 2, 4, 44, 114A–114B, 120, 133, 135, 136, 140, 180, and 193 are included in the Letters and Science List of Courses. For regulations governing this list, see the CIRCULAR OF INFORMATION.

LOWER DIVISION COURSES**2. Hygiene. (2) I, II.******4. Prescribed Physical Education for Freshmen and Sophomores. (1) I, II.**

Classes meet three times weekly. Section assignments are made only by the department. This course may be elected for credit by juniors and seniors.

The following activities are offered: archery, badminton, basketball, bowling, character dancing, dance fundamentals, deck sports, fencing, folk dancing, golf, hockey, lacrosse, social dancing, swimming, tennis, volleyball. Students whose physical condition indicates the need of modified activity are assigned to individual physical education classes.

5. Safety Education and First Aid. (2) I, II.

Prevention and care of common accidents and emergencies in the home and school.

23. Recreational Activities. (1) I, II.

Discussion, one hour; laboratory, two hours.

Discussion of philosophy of recreation with emphasis on the place of recreational agencies in our total war effort. Recreational experiences in many types of situations: active and quiet games, hobbies, hiking and related activities, activities for the home. Individual surveys of recreational opportunities in a specific community. This course is particularly designed to develop recreational skills and knowledge for use in the community with special reference to war-time needs.

30. Introduction to Physical Education. (1) I.

The scope and significance of physical education in the modern school program.

31. Professional Activities (Women). (3) I, II.

Open only to students with a major or minor in physical education, dance, or drama. Students are excused from the physical education requirement, course 4, during the term in which they are enrolled in this course.

Fundamental rhythmic activities necessary for teaching on the secondary and college levels; music analysis for dance.

* 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 CIRCULAR OF INFORMATION of the departments at Berkeley.

** For full statement of the requirement of this course refer to the CIRCULAR OF INFORMATION.

32. Professional Activities (Women). (3) II.

Open only to students with a major or minor in physical education. Students are excused from the physical education requirement, course 4, during the term in which they are enrolled in this course.

Theory and practice in the fundamentals of the following activities: swimming, tennis, basketball, field hockey, soccer, speedball, softball, volleyball.

40. The Technique of Teaching Swimming and Life Saving. (2) II.

Prerequisite: Students must be at least twenty years of age, have a Red Cross Senior Life Saving Certificate up to date, and show a definite need for the appointment to receive a Red Cross Life Saving Instructor's Certificate.

Preparation for and conduct of the Red Cross Life Saving Tests and the Red Cross Life Saving Instructor's Test; advanced technique in teaching swimming; special emphasis on water safety.

44. Principles of Health Education. (2) I, II.

A study of personal hygiene and community health problems, including the principles of sanitation.

UPPER DIVISION COURSES

104A. Club Activities. (2) I.

Training course for leaders of clubs and organizations interested in physical and social welfare, such as Girl Scouts, Camp Fire, Junior Red Cross and U.S.O. Practical experience in program making and planning of tournaments.

104B. Camp Craft. (2) II.

Training course for camp counselors. Program making for various types of camps, schools, church, and community groups. Study of fundamental camp activities, including those simple and elementary enough for youth, and those designed especially for adult groups.

114A. Folk Festivals. (2) I.

The purpose, source of material, organization and administration of folk festivals. Presentation of a Christmas folk festival.

114B. Folk Festivals. (2) II.

Study of folklore, festivals, and pageants. An original folk festival or pageant is required from each student.

120. Principles of Physical Education. (2) II.

A survey of the more significant influences which serve as a foundation for theory and practice in physical education. The implications of these factors with respect to objectives, methods, and materials of physical education.

120C. Observation in Physical Education. (1) II.

May be taken separately or concurrently with course 120.

A series of planned observations of physical and health education programs in schools and playgrounds followed by analysis and discussion.

130A-130B. Dance Composition Workshop. (2-2) Yr.

Prerequisite: course 135 or 136, and Art 168A.

An advanced laboratory course in dance composition and production to provide students with an opportunity to apply the work given in course 135 and Art 168A.

135. History of Dance and the Related Arts. (2) I, II.

Prerequisite: course 31 or the equivalent.

A study of the relation of music, costume, and dance in various periods.

136. History of Dance in America. (2) I.

A study of dance in relation to the development of present American culture.

149. Kinesiology. (3) I.

Prerequisite: Zoölogy 85.

A study of the joint and muscular mechanism of movements, especially designed for women in teaching corrective physical education, physical therapy, and occupational therapy.

171. Organization of Athletics. (2) I.

Prerequisite: courses 120, 321A-321B.

A study of practical problems involved in the conduct of athletic programs in secondary schools and colleges. The theory and application of fundamental techniques used in the organization of mass programs for school or community groups. Reports of special investigations and committee work.

172. Organization of Public Performances. (2) I.

The programming and management of public performances in the school, community, U.S.O., and army camps. Consideration of their purpose, type and sources of material. The use of dance, music, lighting, costume, etc.

180. Administration of Community Recreation. (3) II.

A training course for leaders with emphasis on the management of recreation in communities, industrial and social organizations. The needs of women in industry are given special study.

182. Corrective Physical Education. (3) II.

Prerequisite: course 149. Especially designed for teachers, nurses, physical therapy aides, and occupational therapists.

Study of body mechanics and of the causes and treatment of correctible deviations from the normal. Special emphasis is given individual program adaptations and corrective procedures.

183. Massage and Therapeutic Exercise. (3) I.

Prerequisite: course 182.

Study of massage and therapeutic exercises applied in the treatment of disturbances of the cardio-vascular, nervous, muscular, and digestive systems, for teachers, nurses, physical therapy aides, and occupational therapists.

184. Muscle Reëducation. (3) I.

Prerequisite: course 149.

Special technical muscle training techniques for physical therapy and occupational therapy.

†185. Physical Activities for Rehabilitation. (2) II.

Lectures and laboratory.

Special games and activities suitable for the rehabilitation of the physically handicapped.

† To be given if a sufficient number of students enroll.

190. Physiology of Exercise. (3) I.

Prerequisite: Physiology I.

A study of the effects of physical education activities on the human organism and the physiological bases for program construction. Basic course for understanding assignment of activities to individual needs.

192A. Administration of Health Education. (3) I.

Prerequisite: course 190.

Health instruction in the elementary and secondary schools. A study of learning experiences directed toward the development of health knowledge, practices and attitudes and their function in improving health behavior.

192B. Administration of Health Education. (3) II.

Prerequisite: course 190.

Health protection. A consideration of the problems, principles, and methods involved in the supervision of child health in schools, camps, and playgrounds.

193. Social Aspects of Health. (2) I, II.

Not open to majors in physical education or to students who have credit for 192A, 192B. Designed for general students in the College of Letters and Science.

A general survey of health problems in the secondary school, with special emphasis on individual health and development as well as on the social aspects of living.

PROFESSIONAL COURSES IN METHOD

321A-321B. Principles of Teaching Athletics. (2-2) Yr.

Prerequisite: course 32 or the equivalent. Field work in officiating in the city schools and recreation centers is required.

Analysis of problems in teaching athletic activities, including techniques and game forms, with special reference to their use in planning lesson units. Advanced practice is offered in team activities with emphasis on the interpretation of rules and the technique of officiating.

321C-321D. Principles of Teaching Dance. (2-2) Yr.

Prerequisite: course 31 or its equivalent.

A survey of the program in dance from kindergarten to university. Practice in dance fundamentals—intermediate.

330. Physical Education in the Elementary School. (3) I, II.

Prerequisite: junior standing, courses 4 (secs. 1 and 2) and 44, or the equivalent, and Education 111. Men may substitute Physical Education for Men 354, and 9 or 355, for course 4 (secs. 1 and 2). Required of all candidates for the General Elementary Credential. Each student must plan a program with two consecutive hours a week free for observation, between the hours of 9 a.m. and 3 p.m.

PHYSICS

Letters and Science List.—All undergraduate courses in physics and meteorology are included in the Letters and Science List of Courses. For regulations governing this list, see the CIRCULAR OF INFORMATION.

Preparation for the Major in Physics.—Required: Physics 1A, 1B, 1C, 1D, or their equivalents (in meritorious cases Physics 2A–2B may be accepted) with an average grade of C or higher; Chemistry 1A–1B; Mathematics CF, 3A, 3B, 4A, or their equivalents. Recommended: a reading knowledge of German and French.

The Major in Physics.—Twelve units of upper division physics, consisting of 105, 107A, 108B, 108C, and 110A; and 12 units chosen from other upper division courses in physics, Mathematics 119, 122A–122B, 124, 125, Chemistry 110, and Astronomy 117A–117B, 199. At least 8 of these latter 12 units must be courses in the Department of Physics.

Preparation for the Major in Physics-Meteorology.—Physics 2A–2B, or 1A, 1B, 1C, 1D; Mathematics CF, 8, 3A, 3B, 4A, or their equivalents. A reading knowledge of French and German is recommended.

The Major in Physics-Meteorology.—Physics 105, 112; Meteorology 101A–101B, 102, 104; the remaining upper division courses may be chosen from other courses in meteorology, physics, or mathematics. The acceptable courses in mathematics are 119, 122A–122B, 124, 125; Astronomy 117A, Geography 113, 114 are also acceptable toward the major.

Laboratory Fees.—Courses 1A, 1B, 1C, 1D, 2A, 2B, 10C, 10D, \$6; 108A, 109, \$7; 107A, 107B, 108C, 113C, 114C, 116C, 116D, \$14; Meteorology 110A–110B, \$6. The student will, in addition, be held responsible for all apparatus lost or broken.

PHYSICS

LOWER DIVISION COURSES

Prerequisite for 1A, 1B, 1C, 1D: either (1) the high school course in physics, or (2) trigonometry and the high school course in chemistry. **Prerequisite for course 2A–2B:** (1) three years of high school mathematics, or (2) two years of high school mathematics and college algebra. **Prerequisites for course 4A–4B** are elementary algebra and plane geometry.

Physics 1A, 1B, 1D, and 1C constitute a two-year sequence in general physics which is required of, or recommended for, major students in physics and astronomy and of pre-chemistry and pre-engineering students. Physics 1A and 1B are required of students in architecture, and Physics 1A and either 1B, 1C, or 1D are required of major students in chemistry. Other students may elect any part of the course but at least two parts are necessary to meet the laboratory requirement for the degree of Associate in Arts or upper division standing. Physics 1A is prerequisite to any of the other courses in this sequence.

Students who have credit for courses 2A–2B, 4A–4B, or 10A–10B may receive additional credit of not more than $1\frac{1}{2}$ units for each of courses 1A and 1B, and not more than 2 units for each of courses 1C and 1D. In general, not more than 12 units of credit will be given for any amount of lower division work. Credit in excess of 12 units will be given only in exceptional cases, when approved by the department.

***1A. General Physics: Mechanics of Solids. (3)**

1B. General Physics: Mechanics of Liquids, and Heat. (3) I.

Lectures and demonstrations, three hours; laboratory, two hours. Fee, \$6.
Prerequisite: course 1A.

1C. General Physics: Electricity and Magnetism. (3) I, II.

Lectures, two hours; laboratory, three hours. Prerequisite: course 1A and a knowledge of elementary calculus. Fee, \$6.

1D. General Physics: Light and Sound. (3) I.

Lectures, two hours; laboratory, three hours. Prerequisite: course 1A. Fee, \$6.

2A. General Physics: Mechanics and Heat. (4) I, II.

Lectures and demonstrations, four hours; laboratory, two hours. Prescribed for premedical students. Fee, \$6.

2B. General Physics: Electricity and Magnetism, Light, and Sound. (4) I, II.

Lectures and demonstrations, four hours; laboratory, two hours. Prescribed for premedical students. Fee, \$6.

UPPER DIVISION COURSES

Prerequisite for all upper division courses: Physics 1A, 1B, 1C, 1D, or 2A-2B; Mathematics 3B, 4A; or the equivalents.

105. Analytic Mechanics. (3) I.

The statics and dynamics of particles and rigid bodies.

107A. Electrical Measurements. (3) I.

Prerequisite: course 1C. Fee, \$14.

Laboratory exercises in the measurement of direct current quantities, with explanatory lectures on electricity and magnetism.

†108A. Geometrical Optics. (3) I.

Lectures, demonstrations and laboratory. Prerequisite: course 1D or 2B, or equivalent. Fee, \$7.

Geometrical methods applied to the basic optics of mirrors, prisms, and lenses. The Hamiltonian approach to the problems of convergent and divergent optical systems.

108B. Physical Optics. (3) I.

Lectures and demonstrations.

Interference, diffraction, polarization, and their applications.

108C. Physical Optics Laboratory. (1) I.

Fee, \$14.

†109. Modern Optical Instruments. (3) II.

Prerequisite: course 108A. Fee, \$7.

Specialized studies, conducted on a semiseminar basis with lectures and laboratory, in the applied optics of modern instruments as used in industrial laboratories, photogrammetry, astronomy, range-finding, surgery, etc. Attention given to methods of design.

* During the war emergency course 2A will be accepted in place of course 1A, which will not be given.

† To be given if a sufficient number of students enroll.

110A. Electricity and Magnetism. (2) I.

The elementary mathematical theory, with a limited number of experimental demonstrations.

110B. Electricity and Magnetism. (3) II.

Prerequisite: course 110A.

A continuation of course 110A.

112. Heat. (3) I.

Thermodynamics, with applications to physical chemistry.

†113. Introduction to Spectroscopy and Quantum Theory. (3) II.**†113C. Spectroscopy Laboratory. (1) II.**

Prerequisite or concurrent: course 113 or Astronomy 117B. Fee, \$14.

114A. Mechanics of Wave Motion and Sound. (3) II.

Lectures and demonstrations.

Vibration of particles and elastic bodies; sound sources; propagation in elastic media.

114B. Mechanics of Wave Motion and Sound. (3) I.

Lectures and demonstrations. Prerequisite: course 114A.

Propagation of sound in gases; reflection, refraction, interference, and diffraction of sound; acoustic impedance; hearing; ultrasonics; tubes and horns.

†115. Kinetic Theory. (3) II.

The classical kinetic theory of gases, with applications to viscosity, diffusion, and thermal conduction.

116A. Electronics. (3) II.

Prerequisite: senior standing, and course 107A.

The properties of electrons; thermionic and photo-electric emission; the conduction of electricity in solids and gases; vacuum tubes and circuits.

116B. Electronics. (3) I.

Prerequisite: course 116A.

A continuation of course 116A.

116C. Electronics Laboratory. (2) II.

Prerequisite or concurrent: course 116A (or the consent of the instructor). Fee, \$14.

116D. Electronics Laboratory. (2) I.

Prerequisite: courses 116A, 116C; course 116B (may be taken concurrently); or the consent of the instructor. Fee, \$14.

199A-199B. Special Problems in Physics. (2-2) Yr.**GRADUATE COURSES**

Courses 208 or 213A or 213B, 210A, 212 or 215, and 220A are required of all candidates for the master's degree with major in physics.

210A-210B. Electricity and Magnetism; Advanced Course. (3-3) Yr.

Open to graduate students who have taken 110A-110B, and to other graduate students with the consent of the instructor.

Electrostatics, electrodynamics, electron theory, magnetism, restricted theory of relativity, theory of radiation.

† To be given if a sufficient number of students enroll.

- †212. **Thermodynamics.** (3) II.
 215. **Statistical Mechanics.** (3) II.
 220A. **Theoretical Mechanics.** (3) I.
 220B. **Theoretical Mechanics.** (3) II.
 280. **Seminars in Physics.** (2 or 3)
 For 1943: *Advanced Quantum Mechanics.* (3-3) Yr.
 Cosmic Rays. (3) II.
 290A-290B. **Research.** (1-6; 1-6) Yr.

METEOROLOGY*

UPPER DIVISION COURSES

- 102A. **Physics of the Higher Atmosphere.** (1½)
 Prerequisite: Astronomy 117A or Physics 113, or equivalent preparation acceptable to the instructor.
 Constitution of the atmosphere at various levels; the ozone layer; optical, electric, and magnetic phenomena; temperature and radiation; cosmic rays.
103. **Interaction between the Sea and the Atmosphere.** (1)
 The heat balance between the ocean and the atmosphere; the theory of evaporation based on the turbulent transport of water vapor through the surface layer.
- 104A. **Meteorological Physics.** (1½)
 Theory of radiation with particular emphasis on its meteorological applications.
- 105A-105B-105C. **Synoptic Meteorology.** (3-3-3)
 The synoptic weather maps; world wide survey of meteorological elements; radiation, convection, evaporation, condensation, precipitation; the general circulation; tropical cyclones; extra-tropical disturbances; orographical influences; weather forecasting.
- 106A-106B-106C. **Dynamic Meteorology.** (3-3-3)
 The thermodynamics of the atmosphere, including construction of aerological diagrams; elementary dynamics of the atmosphere; the interrelation between the fields of motion, mass, and pressure; dynamic stability, frictional effects, and turbulence; energy transformations, dynamics of the general circulation.
- †110A-110B. **Meteorological Laboratory.** (4-4)
 Fee, \$6 a term.
 Meteorological observations; coding and decoding; map plotting; three-dimensional synoptic analysis; practice weather forecasting.
111. **Meteorological Instruments and Observations.** (3)
 Lectures, laboratory exercises, and field observations in the measurements of the meteorological elements.
 Special attention will be given the determination of conditions aloft by means of pilot balloons and radiosondes.

* In the year 1943 these courses will be given in special sessions, open only to students sent for training by the armed forces and by government agencies.

† To be given if a sufficient number of students enroll.

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 the CIRCULAR OF INFORMATION.

Preparation for the Major.—Course 3A-3B, or its equivalent, and one of the following: Political Science 10, 15, 31, 32, 34. Recommended: Economics 1A-1B, Geography 1A-1B, History 4A-4B, 5A-5B, 7A-7B, 8A-8B.

Students intending to select political science as a major subject are advised to take one course in political science throughout the year in each of the freshman and sophomore years.

The Major.—Twenty-four units in upper division courses, not more than 4 of which may be taken in courses approved by the department in anthropology, business administration, economics, geography, history, philosophy, psychology, or sociology. The work must be divided among the different fields of political science in accordance with the requirements of the department. A copy of the regulations may be obtained from the departmental adviser. The student must maintain an average grade of C or higher in upper division courses in political science.

Related Curricula.—For the Curriculum in Public Service and the Curriculum in International Relations, students are referred to the CIRCULAR OF INFORMATION.

LOWER DIVISION COURSES

3A-3B. American Government. (3-3) Beginning either term.

Students who have credit for American Institutions 101 will receive only one unit for Political Science 3A.

A study of principles and problems in relation to the organization and functions of the American system of government.

10. The Anglo-American Legal System. (3) I.

Prerequisite: sophomore standing.

The development of the English and Roman legal systems; elementary principles of the common law, as modified by statutes and judicial decisions.

32. Government of European Dictatorships. (3) I.

Prerequisite: sophomore standing and course 3A-3B.

An introductory study of the governments of Italy, Germany, and the Soviet Union, with emphasis upon dictatorial technique and ideology, the transformation of governmental institutions, and contemporary problems.

UPPER DIVISION COURSES

Prerequisite for all courses: course 3A-3B, or its equivalent.

110. History of Political Ideas. (3) II.

An exposition and critical analysis of the ideas of the major political philosophers and schools from Plato to Burke, with emphasis on the setting, the logical structure of their systems, and the significance of these ideas in terms of the contemporary scene.

125. Foreign Relations of the United States. (3) I.

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) II.

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; current developments in such matters as boundary disputes, arbitration and conciliation, Pan-American conferences; Latin-American participation in the League of Nations.

127. International Relations. (3) I, II.

A general survey of the institutions and agencies of international government with major stress on outstanding issues in the diplomacy of the post-war period.

128. World War II. (3) II.

A survey of the problems of grand strategy in the struggle of the United Nations against the Axis; the coordination of military, economic, and political efforts; strategic developments in the different theaters of the war.

133. International Law. (3) II.

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.

141. Political Parties and Practical Politics. (3) II.

An analysis of the organization, functions, and activities of political parties; a study of pressure groups and defensive mechanisms to offset political programs; and an introduction to the technique of playing practical politics.

142. Elections. (2) I.

An analysis of the history, rules, procedure, techniques, and politics of the American system of elections.

143. Legislatures and Legislation. (2) II.

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) II.

Prerequisite: one upper division course in political science.

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.

151. The Governments of Latin America. (3) I.

The governments of representative states: a study of constitutional development, political practices, and the elements of strength and weakness in contemporary governmental organization.

156. Administrative Law. (3) I.

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.

158. Government and Business. (3) II.

Governmental activities in the preservation and regulation of competition, with special emphasis upon problems of administration and intergovernmental cooperation. Regulation of trades and professions.

162. Municipal Government. (3) I.

A comparative study of the modern municipality in the United States and the principal countries of Europe; history and growth of cities; relation of city to the state; legal aspects of city government; parties and electoral problems; types of municipal organization, mayor and council, commission, and city manager; problems of metropolitan areas.

163. Municipal Administration. (3) II.

Development of modern concepts and methods of administration in cities; management and control of administrative organization, city planning, financial administration, protection of life and property, health, housing, social welfare, municipal utility administration.

181. Principles of Public Administration. (3) I.

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.

185. Public Personnel Administration. (3) II.

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.

199A-199B. Special Problems in Political Science. (2-2) Yr.

Prerequisite: credit for six 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.

Section 2. Problems in International Relations.

Section 4. Methods of Administrative Management.

Section 6. Problems in Politics and Legislation.

Section 7. Problems in Latin-American Political Institutions.

GRADUATE COURSE**275A-275B. Special Study and Research. (2-6; 2-6) Yr.****AMERICAN INSTITUTIONS****101. American Institutions. (2) I, II.**

This course satisfies the "Requirement of American Institutions." (See page 12. It may not be applied toward the political science major, and is not open to students who have credit for Political Science 3A.

The fundamental nature of the American constitutional system and of the ideals upon which it is based.

PSYCHOLOGY

Letters and Science List.—All undergraduate courses in psychology are included in the Letters and Science List of Courses. For regulations governing this list, see the CIRCULAR OF INFORMATION.

Preparation for the Major.—Required: courses 21 and 22; and a coherent group of courses totaling 16 or more units, chosen with regard to the student's proposed direction of major work in psychology and the ultimate field of application. The list of approvable groups may be obtained from the adviser or from the chairman of the department.

The Major.—Course 106A or 107A, and 15 additional units in upper division psychology; the remaining 6 units may be in upper division courses in psychology, or, subject to the approval of the department, in related courses in other departments.

Laboratory fees.—Courses 106A–106B, 107A–107B, 150B, \$3.50 a term.

LOWER DIVISION COURSES

21. Introductory Psychology. (3) I, II.

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.

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. Social and Mental Adjustment. (3) I, II.

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.

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.

106A–106B. Experimental Psychology. (3–3) Yr.

Lectures and demonstration, two hours; laboratory, two hours; assigned readings. Fee, \$3.50 a term.

Methods, techniques, and typical results in experimental research in psychology.

107A. Mental Measurements. (3) I, II.

Prerequisite: course 23 may be accepted in place of course 22, Fee, \$3.50.

A study of the construction, techniques of application, and interpretation of tests and scales. Practice in statistical procedures applicable to data derived from tests.

107B. Mental Measurements. (3) I, II.

Prerequisite: course 107A. Fee, \$3.50.

Continuation of the study of principles of measurement, with practice in the construction, administration, and scoring of standardized tests and scales, and their diagnostic interpretation.

108. Physiological Psychology. (3) I.

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.

Adolescence, maturation, habit formation, formal and informal training.

112. Child Psychology. (3) I, II.

The psychology of the infant and child, with special reference to mental development.

125. History of Psychology, Second Modern Period. (2) I.

Psychological theories and research from Wundt to the end of the nineteenth century.

127. English Psychology from Hobbes to Bain. (2) II.**135. Imagination and Thought. (2) I.**

Imagination, memory, anticipatory and constructive thinking.

136. Motivation. (2) II.

Theories and experimentally determined facts concerning drives, needs, preferences, and desires.

137A-137B. Human Learning. (2-2) Yr.

A study of experimental methods and results, with consideration of leading theories.

141A-141B. Group Psychology. (2-2) Yr.

The organization and functions of social groups in relation to the psychology of the individuals composing the groups. Attention will be given to factors involved in family life; the interrelations of personal and social religion; civic organization; progressive changes in group life.

147. The Psychological Method in the Social Sciences. (3) II.

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.

Experimental methods and results in the study of the behavior of the lower animals.

150B. Experiments in Animal Psychology. (3) II.

Lecture, one hour; laboratory, six hours. Prerequisite: course 150A. Fee, \$3.50.

166A. Clinical Psychology. (2) II.

Lectures and demonstration.

A study of the problems of the child, including discussion of physical and mental abnormalities and deficiencies.

166B. Clinical Psychology. (2) I, II.

Lecture, one hour; clinical work, three hours. Prerequisite: courses 107A and 166A, or equivalent preparation approved by the instructor.

Special emphasis is placed on corrective and preventive methods.

168. Abnormal Psychology. (3) II.

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.

177. Psychology and Art. (3) II.

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.

191. Military Psychology. (2) I, II.**GRADUATE COURSES****211A-211B. Comparative Psychology. (2-2) Yr.****221. Experimental Psychology. (3) I.****253A-253B. Seminar in Physiological Psychology. (3-3) Yr.****258A-258B. Seminar in Abnormal Psychology. (3-3) Yr.****278A-278B. Research in Psychology. (3-6; 3-6) Yr.**

SOCIAL SCIENCE

The following courses, organized to meet the need for objective and critical discussion of the issues of the war and the peace, are sponsored by the departments of Economics, Geography, History, Philosophy, Political Science, and Psychology.

Prerequisites and Credit.—There are no prerequisites for these courses. They carry either upper or lower division credit, depending on the classification of the student at the time the course is taken.

1. Factors and Issues in the Second World War. (2) I.

Lectures by members of the social science and allied departments on the issues on which the war is being fought, and on the general factors affecting its prosecution.

2. Problems of the War and the Peace. (2) II.

Lectures on the conduct of the war and on the problems of the war and postwar periods with special reference to the United Nations and the United States.

SPANISH AND ITALIAN*

Letters and Science List.—All undergraduate courses in Spanish except 10 are included in the Letters and Science List of Courses. For regulations governing this list, see the CIRCULAR OF INFORMATION.

Preparation for the Major.—(1) Courses 1, 2, 9 (or 3 and 4), and 20 or 25A-25B, or the equivalent to be tested by examination. (2) 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. (3) English 1A-1B. (4) A minimum of two years of a second foreign language in high school, or of two terms at the college level, or English 36A-36B, or History 8A-8B. This requirement must be met before entering upon the senior year.

NOTE.—Students who have not completed course 20 or 25A-25B with grade A or B in the lower division must take 101A-101B.

The Major.—Required: 24 units of upper division courses, including 102A-102B and 116A-116B. The remaining units may include not more than 4 units of upper division work in French, Italian, or Latin literature, or may be completed from courses 101, 104, 108, 109, 110, 114, 115, 124, 134, and Portuguese 101B. Students who desire to satisfy the major requirement specializing in the Spanish-American field may do so by completing courses 102A-102B, 104A-104B, 114, 116A-116B, 124, and 134.

Students who fail to maintain at least an average grade of C in the Spanish courses taken in the upper division will, upon approval of the Dean of the College of Letters and Science, be excluded from the major in Spanish.

The department recommends as a supplementary choice among the free electives: (1) history of the country or countries most intimately connected with the major; (2) additional study in Latin and English literature; (3) French, German, Greek, and Italian language and literature; (4) the history of philosophy.

Two years of high school Latin, or the equivalent, are prerequisite to candidacy for the master's degree in Spanish.

SPANISH

LOWER DIVISION COURSES

The prerequisites for the various lower division courses are listed under these courses. Students whose high school record seems to warrant it may by examination establish their right to take a more advanced course upon recommendation of the instructor.

1. Elementary Spanish. (4) I, II.

This course corresponds to the first two years of high school Spanish.

2. Elementary Spanish. (4) I, II.

Prerequisite: course 1 or two years of high school Spanish or Spanish S1 in a summer session with satisfactory grade.

3. Intermediate Spanish. (4) I, II.

Prerequisite: course 2 or three years of high school Spanish.

* The University of California at Los Angeles does not offer a major in Italian. Students wishing to satisfy the requirement for a major in Italian are referred to the CIRCULAR OF INFORMATION, Departments at Berkeley.

4. Intermediate Spanish. (4) I, II.

Prerequisite: course 3 or four years of high school Spanish.

8A-8B-8C-8D. Spanish Conversation. (1 unit each term). Beginning each term.

The class meets two hours weekly. Open to students who have completed course 2 or its equivalent with grade A or B.

9. Intermediate Spanish. (5) I, II.

Prerequisite: course 2 or three years of high school Spanish. Primarily for students whose major interest is Spanish.

10. Commercial Spanish. (4) I, II.

Prerequisite: course 3 or four years of high school Spanish. Required of all majors in business administration who elect Spanish to fulfill their language requirement. Not on the Letters and Science List of Courses.

20. Grammar Review. (5) I, II.

Prerequisite: same as for course 25A-25B.

25A-25B. Advanced Spanish. (3-3) Yr.

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.

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.

UPPER DIVISION COURSES

Prerequisite: 16 units of lower division Spanish or the equivalent.

Major students who enter the upper division without course 20 or 25A-25B must take 101A-101B.

101A-101B. Oral and Written Composition. (3-3) Yr.**102A-102B. Survey of Spanish Literature to 1900. (3-3) Yr.**

Prerequisite: course 42A-42B. Required of major students in Spanish.

108A-108B. Spanish Literature from 1850-1898. (2-2) Yr.

A study of Spanish Realism in the second half of the nineteenth century.

109A-109B. Spanish Literature from 1700-1850. (2-2) Yr.

A study of the Neo-classic and Romantic movements.

114. Mexican Literature. (3) I.**116A-116B. Advanced Composition. (3-3) Yr.**

Required of Spanish majors.

124. Argentine Literature. (3) II.

GRADUATE COURSES*

205A-205B. *Prose Masterpieces of the Sixteenth and Seventeenth Centuries.* (2-2) Yr.

210A-210B. *Contemporary Literature.* (2-2) Yr.

†224. *The Contemporary Mexican Novel.* (2) II.
Prerequisite: course 114.

PROFESSIONAL COURSE IN METHOD

370. *The Teaching of Spanish.* (3) I, II.

Required of all candidates for the general secondary credential whose major subject is Spanish. To be taken concurrently with Education 370, or in the last half of the senior year.

ITALIAN

LOWER DIVISION COURSES

1. *Elementary Italian.* (4) I, II.

Essentials of grammar; reading of easy texts.

2. *Elementary Italian.* (4) I, II.

Prerequisite: course 1, or two years of high school Italian.

3. *Intermediate Italian.* (4) II.

Prerequisite: course 2, or three years of high school Italian.

4. *Intermediate Italian.* (4) I, II.

Prerequisite: course 3, or four years of high school Italian.

UPPER DIVISION COURSE

Sixteen units of lower division courses in Italian are required for admission to any upper division course. All upper division courses are conducted mainly in Italian.

†101A-101B. *Composition, Oral and Written.* (3-3) Yr.

PORTUGUESE

LOWER DIVISION COURSES

1. *Elementary Portuguese.* (4) I.

This course corresponds to the first two years of high school Portuguese.

2. *Elementary Portuguese.* (4) II.

Prerequisite: course 1 or two years of high school Portuguese.

* All candidates for the degree of Master of Arts must offer at least two years of high school Latin, or the equivalent.

† To be given if a sufficient number of students enroll.

SUBJECT A: ENGLISH COMPOSITION

Subject A. (No credit) I, II.

Fee, \$10.

Three hours weekly for one term. 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 term immediately following this failure, the course in Subject A. Sections are limited to thirty students. For further details, see page 12.

Training in correct writing, including drill in sentence and paragraph construction, diction, punctuation, grammar, and spelling. Weekly compositions and written tests on the text.

ZOÖLOGY

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 the CIRCULAR OF INFORMATION.

Preparation for the Major.—Zoölogy 1, 2, 13, 14, or 15, 2, 14, and one year of college chemistry, preferably 1A–1B. French and German are recommended.

The Major.—Eighteen units of upper division work in zoölogy and 6 units of upper division work chosen from zoölogy or from approved *related* courses in anthropology, bacteriology, botany, chemistry, entomology, home economics, mathematics, paleontology, physics, or psychology. Of the 18 upper division units in zoölogy at least 4 units must be taken in each of the three following groups of courses:

Group 1: Courses 101, 103, 111, 118, 130, 131.

Group 2: Courses 104, 105, 106, 107, 107C, 111C.

Group 3: Courses 112, 113, 113C, 113D.

Curriculum for Medical Technicians.—For details see the ANNOUNCEMENT OF THE COLLEGE OF LETTERS AND SCIENCE, LOS ANGELES.

Laboratory Fees.—Zoölogy 1, 2, 13, \$3.50; 4, \$6; 14, \$2; 15, \$7; 16, 35, 105, 131, 133, \$3.50; 106, \$8.50; 107C, \$6; 111C, \$3.50; 112, \$2.50; 115C, \$3; 199A, 199B, \$3.50.

ZOÖLOGY

LOWER DIVISION COURSES

†1. General Zoölogy. (3) I.

Lectures, two hours; laboratory, three hours. Fee, \$3.50.

An introduction to the facts and principles of animal biology.

2. General Zoölogy. (3) I, II.

Lectures, two hours; laboratory, three hours. Prerequisite: course 1. Fee, \$3.50.

4. Microscopical Technique. (2) I, II.

Laboratory, six hours; assigned readings. Prerequisite: high school chemistry and courses 1 and 13, or the consent of the instructor. Fee, \$6.

The preparation of tissues for microscopical examination.

†13. Elementary Physiology. (3) I, II.

Lectures, two hours; laboratory, three hours. Prerequisite: course 1 and five units of college chemistry. Fee, \$3.50.

An introduction to vertebrate morphology and physiology with special reference to human physiology.

14. Elementary Embryology. (2) I, II.

Lecture, one hour; laboratory, three hours. Prerequisite: courses 1 and 13. Fee, \$2.

An introduction to embryology with emphasis on the vertebrates.

† To be given if a sufficient number of students enroll.

15. Introductory Zoölogy and Physiology. (5) I.

Lectures, three hours; laboratory, six hours. Prerequisite: Chemistry 1A or 2A. Fee, \$7.

A combination of courses 1 and 13.

16. Applied Human Physiology. (2) II.

Lectures, two hours; laboratory, three hours. Prerequisite: course 13 or 15. Fee, \$3.50.

†18. Human Biology. (2) II.

Prerequisite: an elementary college course in biology, botany, or zoölogy.

A biological consideration of man and his institutions; lectures, discussions, readings and reports.

35. General Human Anatomy. (3) II.

Lecture, two hours; laboratory, three hours. Prerequisite: course 1 or 15. Fee, \$3.50.

UPPER DIVISION COURSES

103. Experimental Zoölogy. (2) II.

Lectures and reports on articles in scientific journals. Prerequisite: courses 1, 2, 14, or the consent of the instructor.

Factors governing cell-differentiation; a survey of the results of experimental embryology, transplantation, regeneration, and tissue culture.

105. Mammalian Embryology. (3) II.

Lecture, one hour; laboratory, six hours. Prerequisite: courses 1 and 2, 14. Fee, \$3.50.

Emphasis on man, rat, and pig.

106. Comparative Anatomy of the Vertebrates. (4) I.

Lecture, two hours; laboratory, six hours. Prerequisite: courses 1, 2, 13, 14. Fee, \$8.50.

A study of the structural relationships of the vertebrates. Dissection of the elasmobranch, amphibian, and mammal.

110. Protozoölogy. (4) I.

Lectures, two hours; laboratory, six hours. Prerequisite: courses 1, or 15. Fee, \$3.50.

Morphology, physiology, and ecology of free living and parasitic protozoa.

111. Parasitology. (2) II.

Prerequisite: courses 1, or 15.

General discussion of the biological aspects of parasitism and of the animal parasites of man and the domestic animals.

111C. Parasitology Laboratory. (2) II.

Prerequisite or concurrent: course 111. Fee, \$3.50.

111H. Laboratory Aide Training in Parasitology. (2) II.

Prerequisite: course 111C.

Training in identification of animal parasites of man; designed particularly for persons intending to become laboratory technicians.

† To be given if a sufficient number of students enroll.

113. Vertebrate Zoölogy. (3) I.

Prerequisite: courses 1, 2.

Emphasis upon the habits, distribution, and ecology of the vertebrates of California.

113C. Vertebrate Zoölogy Laboratory. (2) I.

Prerequisite: course 115. Fee, \$3.

Ecology and taxonomy of the cold-blooded vertebrates.

113D. Vertebrate Zoölogy Laboratory. (2) II.

Prerequisite or concurrent: course 113.

Ecology, distribution, and habits of the warm-blooded vertebrates.

117. Zoölogical Theories and Concepts. (2) II.

Readings, discussions, and lectures. Prerequisite: 6 units of upper division zoölogy.

The history and development of basic concepts and theories concerning organisms.

118. Endocrinology. (2) I.

Prerequisite: courses 1 and 13, or 15. Lectures and reports on articles in scientific journals.

199A-199B. Problems in Zoölogy. (2-2) Yr.

Prerequisite: course 13 or 15, with such special preparation as the problem may demand. Fee, \$3.50 a term.

GRADUATE COURSES**250. Survey of Animal Biology; Seminar. (3) II.****251A-251B. Seminars in Ecology.**

Section 1. Vertebrates. (1-1) Yr.

252A-252B. Seminars in Endocrinology.

Section 1. Growth and Development. (1-1) Yr.

Section 2. Physiology of Reproduction. (1-1) Yr.

254A-254B. Seminars in Experimental Zoölogy. (2-2) Yr.**255A-255B. Seminars in Protozoölogy and Parasitology. (2-2) Yr.****290A-290B. Research in Zoölogy. (2-6; 2-6) Yr.****PALEONTOLOGY*****LOWER DIVISION COURSE****1. General Paleontology. (2) II.**

Lectures, quizzes, and two required Saturdays in the field.

A discussion of the general principles of paleontology, the influences that surrounded the ancient life of the earth, and some of the ways in which animals respond to such influences.

* Courses in invertebrate paleontology are offered by the Department of Geology (see page 88).

General Bulletins, and Bulletins Referring Primarily to the Colleges, Schools, and Departments of the University at Berkeley and Davis

The Announcement of Courses of the University of California, Berkeley: courses of instruction in the departments at Berkeley. Price, 10 cents.

The Circular of Information of the University of California (primarily for those interested in the Undergraduate Division at Berkeley): general information about the University, its organization, the requirements for admission to undergraduate status, for the degree of Associate in Arts, and for the bachelor's degree in the colleges of Letters and Science, Agriculture, Chemistry, and Engineering, and in the School of Business Administration; requirements for certificates in the several curricula, and students' fees and expenses. Price, 10 cents.

The Prospectus of the College of Agriculture: general information concerning the College of Agriculture at Berkeley, Davis, Los Angeles, and elsewhere; its organization, requirements for admission, degrees, etc.

The Annual Report of the College of Agriculture and the Agricultural Experiment Station.

The Bulletins and Circulars of the Agricultural Experiment Station.

The Announcement of the School of Business Administration.

The Announcement of the School of Education, Berkeley.

The Announcement of the College of Engineering.

The Announcement of the Department of Forestry.

The Announcement of the Graduate Division, Northern Section.

The Announcement of the School of Jurisprudence.

The Announcement of the School of Librarianship.

The Announcement of the School of Optometry.

The Announcement of the Department of Social Welfare.

The Catalogue of Officers and Students, Section I (Berkeley Departments). Price, 60 cents.

The Annual Commencement Programme (at Berkeley), containing the list of degrees conferred, scholarships, prizes, and other honors.

The President's Biennial Report.

The Annual Register. Price, \$1.00.

The Bulletins and Circulars of the University Extension Division.

Bulletins Referring Primarily to Schools and Colleges of the University in San Francisco

The Announcement of the College of Dentistry.

The Announcement of the Medical School.

The Announcement of the School of Nursing.

The Announcement of the College of Pharmacy.

The Announcement of the Hastings College of the Law.

The Announcement of the California School of Fine Arts.

UNIVERSITY OF CALIFORNIA BULLETIN

Announcement of Courses

Primarily for Students in the
DEPARTMENTS AT LOS ANGELES

**Spring and Summer Terms
1944**

Note. All announcements herein are subject to revision. Supplementary circulars will be issued from time to time as changed conditions may necessitate. Changes in the lists of Officers of Administration and Instruction may be made subsequent to the publication of this Announcement, February 21, 1944.

For sale by the
Students Coöperative Book Store, Los Angeles 24
PRICE, TEN CENTS

UNIVERSITY OF CALIFORNIA
LOS ANGELES CAMPUS

**ANNOUNCEMENT OF
COURSES**

Spring and Summer Terms

1944

405 HILGARD AVENUE, LOS ANGELES 24

(No fees in
the Auditorium)

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CALENDAR, 1944

1944

Spring Term

Feb. 21, Monday	Applications for admission to undergraduate or graduate standing in the summer term, with complete credentials, should be filed on or before this date to avoid late application fee.
Mar. 1, Wednesday	9:00 a.m. Examination in Subject A.
Mar. 1, Wednesday	} Consultation with advisers by new students.
Mar. 2, Thursday	
Mar. 3, Friday	Registration of old students in all classifications: 8:30 a.m.-10:00 a.m. Initials A-E. 10:00 a.m.-11:30 a.m. Initials F-K. 12:30 p.m.-2:00 p.m. Initials L-R. 2:00 p.m.-3:30 p.m. Initials A-R. 9:00 a.m.-10:30 a.m. Initials S-Z. 12:00 m.-1:30 p.m. All initials.
Mar. 4, Saturday	Registration of students in all classifications: 10:30 a.m.-1:30 p.m. All initials.
Mar. 6, Monday	Instruction begins.
Mar. 11, Saturday	9:00 a.m. Special examination in Subject A.
Apr. 22, Saturday	End of mid-term period.
June 19, Monday	} Final examinations, spring term.
June 24, Saturday	
June 24, Saturday	Spring term ends.

Summer Term

June 19, Monday	Applications for admission to undergraduate or graduate standing in the summer term, with complete credentials should be filed on or before this date to avoid late application fee.
June 28, Wednesday	9:00 a.m. Examination in Subject A.
June 28, Wednesday	} Consultation with advisers by new students.
June 29, Thursday	
June 30, Friday	Registration of old students in all classifications: 8:30 a.m.-10:00 a.m. Initials F-K. 10:00 a.m.-11:30 a.m. Initials L-R. 12:30 p.m.-2:00 p.m. Initials S-Z. 2:00 p.m.-3:30 p.m. Initials F-Z. 9:00 a.m.-10:30 a.m. Initials A-E. 12:00 m.-1:30 p.m. All initials.
July 1, Saturday	Registration of new students in all classifications: 10:30 a.m.-1:30 p.m. All initials.
July 1, Saturday	Instruction begins.
July 3, Monday	9:00 a.m. Special examination in Subject A.
July 8, Saturday	End of mid-term period.
Aug. 12, Saturday	} Final examinations, summer term.
Oct. 16, Monday	
Oct. 21, Saturday	} Summer term ends.
Oct. 21, Saturday	

THE UNIVERSITY OF CALIFORNIA

GENERAL ADMINISTRATIVE OFFICERS

ROBERT GORDON SPROUL, B.S., LL.D., Litt.D., President of the University.

MONROE E. DEUTSCH, Ph.D., LL.D., Vice-President of the University and Provost at Berkeley.

ROBERT M. UNDERHILL, B.S., Secretary and Treasurer of the Regents.

JAMES H. CORLEY, B.S., Comptroller (General Business Manager).

❖ MERTON E. HILL, Ed.D., Director of Admissions.

HIRAM W. EDWARDS, Ph.D., Director of Relations with Schools and Acting Director of Admissions.

BENNET M. ALLEN, Ph. D., Acting Dean of the Graduate Division, Southern Section.

WILLIAM C. POMEROY, Ph.D., Acting Registrar.

GEORGE F. TAYLOR, Business Manager, and Assistant Secretary of the Regents.

❖ On leave for civilian war work.

The Three-Term Program of the University

CONTINUING THE THREE-TERM PLAN which was inaugurated in 1942, the University of California is now operating under a calendar which includes a full sixteen-week Summer Term equivalent in all respects to the Fall and Spring Terms; in other words, the Summer Term is a regular term of the academic year, designed for regular students, graduate and undergraduate. This calendar will be continued for the duration of the War.

The opening dates of the three terms will be, respectively, about July 1, November 1, and March 1. Freshmen and other new students will be admitted at any one of these times and may pursue their studies without interruption. By attending three terms continuously until the college course is completed, the time normally required to obtain the bachelor's degree will be reduced by at least one year.

The courses to be offered during the Spring Term and the Fall Term of 1944 will be those usually offered during fall semesters of former years, while the offerings of the Summer Term of 1944 and the Spring Term of 1945 will be those usually made during spring semesters, including courses for students enrolling for the first time.

For the year 1943-1944, no General Catalogue was published. In its place were planned a Circular of Information for 1943-1944 together with Announcements of Courses for the Summer and Fall Terms of 1943-1944 and for the Spring and Summer Terms of 1944. This Announcement covers the latter period of two terms and is to be used with the Circular of Information for 1943-1944, previously published. Publication of the General Catalogue may be resumed in the fall of 1944.

ANNOUNCEMENT OF COURSES FOR THE SPRING AND SUMMER TERMS, 1944

The course offerings listed in this ANNOUNCEMENT are subject to change without notice, because of war conditions.

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 term, 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 spring term, and II for the summer term. A course given throughout the period March to October is designated: Yr. The assignment of hours is made in the SCHEDULE OF CLASSES AND DIRECTORY to be obtained at the time of registration.

Year courses. A course given in a period of two terms is designated by a double number. Economics 1A-1B is an example. Each half of the course constitutes a term'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 term. Unless otherwise noted, the student may take the first half only and receive final credit for it.

AGRICULTURE

WILLIAM H. CHANDLER, Ph.D., Professor of Horticulture.

ROBERT W. HODGSON, M.S., Professor of Subtropical Horticulture.

MARTIN R. HUBERTY, Engr., Professor of Irrigation.

CLAUDE B. HUTCHISON, M.S., LL.D., D.Agr. (hon.c.), Professor of Agriculture (Chairman of the Department).

RALPH H. SMITH, Ph.D., Professor of Entomology.

KENNETH F. BAKER, Ph.D., Associate Professor of Plant Pathology.

SIDNEY H. CAMERON, Ph.D., Associate Professor of Subtropical Horticulture.

FREDERICK F. HALMA, Ph.D., Associate Professor of Subtropical Horticulture.

PIERRE A. MILLER, M.S., Associate Professor of Plant Pathology.

DAVID APPLEMAN, Ph.D., Assistant Professor of Plant Nutrition.

JACOB B. BIALE, Ph.D., Assistant Professor of Subtropical Horticulture.

WALTER E. LAMMEETS, Ph.D., Assistant Professor of Ornamental Horticulture.

GUSTAV A. L. MEHLQUIST, Ph.D., Assistant Professor of Floriculture.

ARTHUR F. PILLSBURY, Engr., Assistant Professor of Irrigation.

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

RICHARD M. BOHART, Ph.D., Instructor in Entomology.

OTIS F. CURTIS, JR., Ph.D., Instructor in Floriculture.

CHARLES A. SCHROEDER, Ph.D., Instructor in Subtropical Horticulture.

ELMER R. EGGERS, B.S., Associate in Horticulture.

Letters and Science List.—Agricultural Economics 3, 104, Entomology 1, 134, Plant Pathology 120, Soil Science 110. For regulations governing this list see the CIRCULAR OF INFORMATION.

Upper Division Courses.—All upper division courses announced by this department presuppose at least junior standing in the College of Agriculture. Juniors and seniors in other colleges may elect such courses in the Department of Agriculture as they are qualified to pursue.

Preparation for the Major in Horticulture.—Horticulture 2 and 10 or the equivalent, and the requirements in the Plant Science Curriculum (see the CIRCULAR OF INFORMATION, or the PROSPECTUS OF THE COLLEGE OF AGRICULTURE).

The Major in Horticulture.—Twelve units of upper division courses. Inclusion of Horticulture 100, 101, and 102 is recommended for those who plan to specialize in fruit culture.

Preparation for Other Majors or Curricula.—See the PROSPECTUS OF THE COLLEGE OF AGRICULTURE and consult the appropriate advisers for students in Agriculture.

Laboratory Fees.—Horticulture 100, \$3.50.

AGRICULTURAL ECONOMICS

LOWER DIVISION COURSE

†3. Agricultural Background of American Civilization. (2) II.

Mr. Roy J. Smith

The character of American agriculture; its evolution from pioneer life to modern industry; principal types; European background; technology on the farm; population and migration; rural and urban relationships; economic and social problems; agrarian movements and governmental activities.

UPPER DIVISION COURSES

†101A. Principles of Marketing Agricultural Products. (3) II.

Prerequisite: Economics 1A-1B.

Mr. Roy J. Smith

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.

†104. Agricultural Economics. (3) II.

Mr. Roy J. Smith

Prerequisite: Economics 1A-1B.

A study of the application of the principles of economics to the problems of agricultural production.

†118. Farm Management: Business Organization. (3) II. Mr. Roy J. Smith

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

ENTOMOLOGY

UPPER DIVISION COURSES

134. Insects Affecting Subtropical Fruit Plants. (4) I.

Mr. Ralph H. Smith

Lectures, two hours; laboratory, six hours. Recommended preparation: Zoölogy 1, Entomology 1.

Specialized study of the biology, nature of injury, and control of the more important insects affecting citrus and other subtropical fruit plants.

199A-199B. Special Study for Advanced Undergraduates. (2-4; 2-4) Yr.

Mr. Ralph H. Smith

Prerequisite: senior standing and the consent of the instructor.

HORTICULTURE

LOWER DIVISION COURSES

†2. Elements of Fruit Production. (3) II.

Mr. Chandler

Prerequisite: Botany 1A-1B or equivalent. This course is equivalent to Pomology 2A, given at Berkeley and at Davis.

The principles and practices of fruit growing, with special reference to subtropical regions. The climatic, soil, and moisture requirements and adaptations of fruit trees; selection of site, propagation, planting, orchard management practices, harvesting, and preparation for market.

† To be given if a sufficient number of students enroll.

10. Plant Propagation. (2) I.

Mr. Cameron

Laboratory, six hours. Prerequisite: Botany 1A-1B and course 2, or the equivalent.

The principles of plant propagation, with special reference to horticultural plants.

UPPER DIVISION COURSES**†100. Systematic Pomology. (4) II.**

Mr. Halma

Lectures, two hours; laboratory, six hours. Prerequisite: course 2, or the equivalent. Fee, \$3.50.

The botanical classification and relationships of the principal fruits; horticultural races and groups; growth and bearing habits; bud and fruit morphology; varietal characters.

101. Citriculture. (4) I.

Mr. Hodgson

Lectures, three hours; laboratory, three hours; four Saturday field trips. Prerequisite: Chemistry 1A-1B, course 2 or the equivalent.

The characteristics of the citrus fruits and their responses to environmental influences and cultural practices; the economics of the citrus fruit industry.

†102. Major Subtropical Fruits Other Than Citrus. (3) II.

Mr. Hodgson, Mr. Halma

Lectures, three hours; three Saturday field trips. Prerequisite: course 2 or the equivalent. Offered alternately with course 107.

A survey of the knowledge concerning the requirements and responses of the major subtropical fruit plants other than *Citrus*; the economics of their industries. The fruits considered will include the walnut, pecan, almond, fig, olive, avocado, date, and oriental persimmon.

†104. Advanced Horticulture. (3) II.

Mr. Cameron

Lectures and discussions, three hours. Prerequisite: course 2 or the equivalent, Botany 7 or the equivalent, course 100, and course 102.

An analysis of the knowledge concerning the responses of fruit trees to environmental and cultural influences, with special reference to subtropical regions.

112. Fruit Physiology and Storage Problems. (2) I.

Mr. Biale

Lectures and discussions, two hours. Prerequisite: the consent of the instructor.

Ripening processes of fruit on the tree; maturity standards and tests; ripening and respiration as affected by 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.

131B. Taxonomic Classification and Ecology of Ornamental Plants. (3) I.

Mr. Lammerts

Lectures, two hours; laboratory, three hours. Prerequisite: courses 2 and 10, or the equivalent (course 10 may be taken concurrently).

The botanical classification, relationships, and identification of the more important ornamental plants in southern California, with special emphasis on their environmental requirements and adaptations.

† To be given if a sufficient number of students enroll.

141. Plant Cytogenetics. (4) I.**Mr. Mehlquist**

Lectures, two hours; laboratory, six hours. Prerequisite: Zoölogy 180 and 181 or Genetics 100 (Berkeley or Davis), or the equivalent.

Selected topics in cytology, with special reference to their bearing on genetics and plant breeding.

199A-199B. Special Study for Advanced Undergraduates. (2-4; 2-4) Yr.**The Staff**

Prerequisite: senior standing and the consent of the instructor.

GRADUATE COURSES**†255A-255B. Seminar in Horticulture. (1-1) Yr. Mr. Chandler, Mr. Biale****281A-281B. Research in Horticulture. (1-6; 1-6) Yr.****The Staff****IRRIGATION****UPPER DIVISION COURSES****†110. Principles of Irrigation. (4) II.****Mr. Huberty**

Lectures, three hours; laboratory, three hours. Prerequisite: Physics 2A-2B or the equivalent.

Irrigation as a factor in agriculture; effect of soil characteristics upon the movement and storage of water; the availability of soil moisture to plant growth; development of the farm irrigation water supply. To fill a need of subtropical horticulture majors, some time is spent on the study of the origin, evolution, characteristics, classification, and conservation of soils.

199A-199B. Special Study for Advanced Undergraduates. (2-4; 2-4) Yr.**Mr. Huberty, Mr. Pillsbury**

Prerequisite: senior standing and the consent of the instructor.

PLANT PATHOLOGY**UPPER DIVISION COURSES****†120. Plant Diseases. (4) II.****Mr. Baker**

Lectures, two hours; laboratory, six hours. Prerequisite: Botany 1A-1B 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) II.**Mr. Miller**

Lectures, three hours; laboratory, three hours. Prerequisite: Botany 1A-1B 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.**Mr. Miller, Mr. Baker**

Prerequisite: senior standing and the consent of the instructor.

† To be given if a sufficient number of students enroll

SOIL SCIENCE**UPPER DIVISION COURSES**

110. The Soil as a Medium of Plant Growth. (4) I. Mr. Appleman

Lectures, three hours; one additional period to be arranged. Prerequisite: Chemistry 1A-1B, 8.

Nutritional requirements of plants; studies of the absorption of mineral elements by plants, and related processes; chemical composition of soils; current views of the soil solution and of base exchange; factors determining productivity of soils; soil and plant interrelations.

199A-199B. Special Study for Advanced Undergraduates. (2-4; 2-4) Yr.

Mr. Huberty, Mr. Appleman, Mr. Pillsbury

ANTHROPOLOGY AND SOCIOLOGY

RALPH L. BEALS, Ph.D., Associate Professor of Anthropology.

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

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

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

ALBERT BLUMENTHAL, Ph.D., Research Associate in Sociology.

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

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 the CIRCULAR OF INFORMATION.

MAJOR IN ANTHROPOLOGY

Preparation for the Major.—Required: Anthropology 1A-1B and at least 6 units chosen from a list of approved courses. Copies of this list may be obtained from the adviser or from the chairman of the department.

The Major.—Courses 101A-101B, 105, and 9 units chosen from upper division courses in anthropology; and 6 additional units which may be chosen from upper division courses in anthropology or sociology, or from an approved list of related courses in other departments. Copies of this list may be obtained from the adviser or from the chairman of the department.

MAJOR IN SOCIOLOGY

Preparation for the Major.—Required: Sociology 30A-30B, a course in statistics (taken either in lower or upper division), and at least 6 units of courses in other departments selected from a recommended list in accordance with the student's proposed field of specialization. Copies of this list should be obtained from the faculty adviser.

The Major.—Twenty-four upper division units; 6 to 9 units of courses in other departments will be accepted toward completion of the major. A list of such courses, which are prescribed in accordance with various fields of specialization, should be obtained from the faculty adviser.

Graduate Work.—The master's degree in anthropology and sociology is offered with a concentration in one discipline. The department will follow Plan II, Comprehensive Examination. For details of requirements for the examination consult the departmental adviser.

Social Welfare.—The University of California at Los Angeles offers no graduate professional training in social welfare. Students interested in this type of training are referred to the Department of Social Welfare at Berkeley. The major in sociology may be offered in satisfaction of the entrance prerequisites of the Department of Social Welfare at Berkeley and other approved schools of social work. Specified courses in other departments are also required for those wishing preprofessional training in social welfare. A list of such courses may be secured from the faculty adviser.

ANTHROPOLOGY**LOWER DIVISION COURSES****1A. General Anthropology. (3) I.**

Mr. Hoijer

Origin, antiquity, and races of man; physical anthropology; race problems; current racial theories.

1B. General Anthropology. (3) II.

Mr. Beals, Mr. Hoijer

Origin and growth of culture. Problems in invention, material culture, social institutions, religion, language.

UPPER DIVISION COURSES

Courses 1A, 1B or the equivalent are prerequisite to all upper division courses, except for majors in economics, geography, history, political science, psychology, or sociology.

101A-101B. World Ethnography. (3-3) Yr.

Mr. Beals

A descriptive survey of representative primitive cultures, including backward people of civilized countries.

105. The American Indian. (3) II.

Mr. Beals, Mr. Hoijer

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

125. Comparative Society. (3) I.

Mr. Hoijer

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.

147. Peoples of the South Pacific. (3) I.

Mr. Hoijer

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

199A-199B. Special Problems in Anthropology. (2-2) Yr.

Mr. Beals in charge

Prerequisite: six units of upper division anthropology, and the consent of the instructor.

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

Mr. Beals

SOCIOLOGY**LOWER DIVISION COURSE****30A-30B. Social Institutions. (3-3) Yr.**

Mr. Panunzio

This course or its equivalent is prerequisite for admission to upper division courses in sociology. Students presenting credit for another elementary course in sociology may, by special permission, take 30A-30B for credit also.

The social institutional order; the originating factors, functions and problems of marriage, the family, government, and other institutions.

UPPER DIVISION COURSES

Course 30A-30B or its equivalent is a prerequisite to all upper division courses in sociology except 142.

- 120. Social Maladjustment. (3) I.** Mr. Bloom
Selected problems in social and societal maladjustment.
- 121. Social Processes. (3) I.** Mr. Panunzio
A theoretical study of group structure and functioning: the processes of contact, interaction, association, and dissociation as they operate among individuals in groups.
- 142. Marriage and the Family. (3) I.** Mr. Bloom
The marriage-family system: development, modern functions, characteristics, and maladjustments.
- 143. Urban Sociology. (3) II.** Mr. Bloom
Urban and rural cultures; the characteristics of cities in western civilization with emphasis on the American metropolis.
- 181. The Sociology of Dependency. (2) II.** Mr. Bloom
Prerequisite: course 120.
Dependency analyzed from the standpoint of social isolation and social control.
- 182. The Sociology of Crime. (2) II.** Mr. Bloom
Prerequisite: course 120.
Varieties and theories of crime and punishment in contemporary and other societies; criminal behavior systems.
- 186. Demography. (3) II.** Mr. Panunzio
Prerequisite: course 121 and senior standing.
A study of the quantity, migration, concentration, and quality of modern Western people with particular reference to sociological phenomena.
- 189. Race and Culture. (2) I.** Mr. Panunzio
Prerequisite: senior standing.
The contact and interaction of races and cultures in the modern world, with particular reference to social consequences of amalgamation, hybridization, cultural assimilation, conflict, accommodation.
- 199A-199B. Special Problems in Sociology. (2-2) Yr.** Mr. Bloom in charge
Prerequisite: six units of upper division sociology taken in the University with at least a B average, and the consent of the instructor.
Contemporary sociological theories and research methods; theoretical or field investigation of a special phenomenon or problem.

GRADUATE COURSE

- 249A-249B. American Cultural Minorities. (2-2) Yr.** Mr. Panunzio

ART

- GEORGE JAMES COX, R.C.A., Professor of Art (Chairman of the Department).
 ROBERT S. HILPERT, M.A., Associate Professor of Art Education.
 LOUISE PINKNEY SOOY, Associate Professor of Fine Arts.
 NELLIE HUNTINGTON GERE, Associate Professor of Fine Arts, Emeritus.
 ♣ JAMES H. BREASTED, JR., M.A., Assistant Professor of Art.
 HELEN CLARK CHANDLER, Assistant Professor of Fine Arts.
 BESSIE E. HAZEN, Ed.B., Assistant Professor of Fine Arts, Emeritus.
 LAURA F. ANDERSON, M.A., Assistant Professor of Fine Arts.
 IDA ABRAMOVITCH, M.A., Associate in Art.
 ♡ GERTRUDE WICKES CROWFOOT, M.A., Associate in Art.
 ANNITA DELANO, Associate in Fine Arts.
 JOSEPH WILLIAM HULL, M.A., Associate in Art.
 CLARA BARTRAM HUMPHREYS, M.A., Associate in Fine Arts.
 ANNIE C. B. MCPHAIL, Ed.B., Associate in Fine Arts.
 BELLE H. WHITICE, Associate in Fine Arts.
 ♡ EVERETT C. ADAMS, M.A., Assistant in Art.
 KENNETH G. KINGREY, M.A., Associate in Art.
 ROBERT TYLER LEE, Assistant in Art and Assistant in Dance.
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- S. MACDONALD WRIGHT, Lecturer in Art.
 NATALIE WHITE, M.A., Supervisor of Training, Art.

College of Applied Arts

Preparation for the Major.—Courses 1A-1B, 2A, 2B, 4A, 4B, 14A, 14B, 32A-32B, and four units of required prerequisites for the chosen curriculum.

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

(1) *Curriculum in Appreciation and History.*

Courses 101A, 101B, 121A-121B, 131A, 131B, 144A, 144B, 161A-161B, 174A-174B; and 12 units to be approved by the departmental adviser.

(2) *Curriculum in Painting or Commercial Art.*

Courses 121A-121B, 134A-134B, 135, 144A-144B, 164A-164B, 165A, 174A-174B; and 12 units to be approved by the departmental adviser.

(3) *Curriculum in Industrial Design.*

Courses 101A, 117A-117B, 121A-121B, 127A-127B, 132A-132B, 147A-147B, 156A, and 12 units to be approved by the departmental adviser.

(4) *Curriculum in Interior Decoration and Costume Design.*

Courses 101A-101B, 121A-121B, 156A-156B, 173, 183A-183B, 186A-186B; and 14 units to be approved by the departmental adviser.

(5) *Curriculum in Teaching of Art.*

Courses 117A, 121A-121B, 127A, 132A, 147A, 156A, 165A, 168A, 173 or 183, 174A, 180; and 12 units from one of the above curricula to be approved by the departmental adviser.

♣ On leave for civilian war work.

♡ On leave for duty in the armed forces.

College of Letters and Science

Programs for the General Major.—Two programs are offered in partial satisfaction of the requirements for the general major:

(A) *History and Appreciation of Art*; lower division preparation, courses 1A, 2A, 2B, 4B, 32B; the major, 12 to 15 units chosen from courses 121A-121B, 131A-131B, 151A-151B, 161A-161B.

(B) *Painting*; lower division preparation, courses 2A, 4A, 4B, 14A, 32B; the major, 12 to 15 units chosen from courses 134A-134B, 144A-144B, 164A-164B, 174A-174B.

Letters and Science List.—Courses 1A-1B, 2A-2B, 4A-4B, 21A-21B, 32A-32B, 42, 121A-121B, 131A-131B, 134A-134B, 144A-144B, 161A-161B, 164A-164B, and 174A-174B, 180, 182A-182B, are included in the Letters and Science List of Courses. For regulations governing this list, see the CIRCULAR OF INFORMATION. A major in art is not offered in the College of Letters and Science.

Laboratory Fees.—Courses 27A, 27B, 117A, 117B, 144B, 147A, 182A-182B, 330, \$2.50; 164A-164B, \$4.50.

LOWER DIVISION COURSES

1A-1B. Art and Civilization. (2-2) Yr. Beginning either term. Mr. Cox

The origin and function of the arts and their practical relation to contemporary civilization.

2A. Art Structure. (2) I, II.

Miss McPhail

Fundamental course in creative design and color theory.

2B. Art Structure. (2) I, II.

Miss McPhail, Miss Andreson

Prerequisite: course 2A.

Basic study of the elements of art as related to two-dimensional decorative design, applicable to industrial techniques and processes.

4A. Drawing. (2) I, II.

Mr. Hull

The application of free and mechanical perspective to the problems of drawing and industrial design.

4B. Drawing. (2) I, II.

Mrs. Abramovitch

Prerequisite: course 4A.

Objective drawing of natural forms from observation and memory.

14A. Water-color Painting. (2) I, II.

Mrs. Abramovitch

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

Still life; the study of water-color techniques; observation of color as related to form, light, and space.

14B. Water-color Painting. (2) I, II.

Mr. Hull

Prerequisite: course 14A.

Development of techniques as related to industrial design, costume, and interior decoration.

15. Lettering. (2) I, II.

Mr. Kingrey

Prerequisite: courses 1A, 2B.

The design of lettering; composition using type forms; simple problems in layout.

21B. House Furnishing. (2) II.

Lectures and demonstrations.

Appreciative study of modern house furnishing.

27A. Introduction to Crafts. (2) I.

Miss Andreson

Fee, \$2.50.

A course designed to meet the needs of recreational workers, occupational therapists, social workers, and others interested in handcraft.

32A-32B. Design in Painting. (2-2) Yr.

Miss Chandler, Miss Delano

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

The development of the ability to compose imaginatively with line, space, and color.

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.

48. Art of the Theater. (2) I, II.

Mr. Lee

The visual art of the theater; use of materials and equipment of the modern stage.

UPPER DIVISION COURSES

101A. History of Furniture. (2) I.

Mrs. Sooy

The history of furniture from ancient to modern times.

117A. Ceramics. (2) I.

Miss Andreson

Prerequisite: course 22. Fee, \$2.50 a term.

Pottery, related to art and industry.

121A-121B. Survey of the History of Art. (2-2) Yr.

Mr. Wright

Prerequisite: course 1A.

A critical study of important phases in the development of Western art after 1500.

127A. Bookbinding. (2) II.

Practical work in bookbinding, using various types of book construction and binding materials.

131A. Art Epochs: Gothic and Renaissance. (2) I.

Mr. Wright

131B. Art Epochs: Romantic and Modern. (2) II.

Mr. Wright

132A. Design in Industry. (2) I.

Miss Delano

Prerequisite: course 14B.

Study of materials, processes and functions of the art industries, leading to original design.

134A. Landscape Painting. (2) I.

Miss Delano

Prerequisite: course 32B.

The development of personal vision and individual expression as applied to landscape painting. Survey of modern and traditional schools.

144A. Oil Painting. (2) II.

Miss Chandler

Prerequisite: course 32B.

The techniques of oil painting; development of perception and understanding of the essential qualities of form, light, color, and their integration in painting.

147A. Weaving. (2) II.

Prerequisite: course 22. Fee, \$2.50.

History and development of weaving; experience with techniques and processes.

147B. Weaving. (2) II.

Prerequisite: course 147A.

A continuation of course 147A.

155. Publicity and Propaganda. (2) I, II.

Mr. Kingrey

156A. Interior Decoration. (2) II.

Lectures, laboratory, and demonstrations. Prerequisite: course 21B.

The consideration of the home as a unit; the arrangement of garden, house, floor plan, and furniture as functional and decorative problems.

161A-161B. Oriental Art. (2-2) Yr.

Mr. Wright

Prerequisite: course 1A and the consent of the instructor.

Selected problems from phases of Oriental art.

164A-164B. Life Drawing. (2-2) Yr.

Mr. Cox and Mrs. Abramovitch

Fee, \$4.50 a term.

Objective drawing and expressive interpretation of the human figure; its use in original composition.

165A. Advertising Illustration. (2) I.

Mr. Kingrey

Prerequisite: courses 15, 32B.

Design for advertising; emphasis upon type forms and composition; posters, booklets, layouts, etc.

165B. Advertising Illustration. (2) II.

Mr. Kingrey

Prerequisite: course 165A.

Psychological factors in design and their relationship to merchandising.

168A. Design for Theater Productions. (2) I, II.

Mr. Lee

Prerequisite: course 48.

The use of form, space, and color in the theater terms, and the employment of historical material.

168B. Supervision of Theater Productions. (2) I, II.

Mr. Lee

Prerequisite: course 168A.

A practical course in supervision and organization with experience in design and execution of actual productions.

***174A-174B. Painting: Mediums and Techniques. (2-2) Yr.**

Prerequisite: senior standing.

Miss Delano, Miss Chandler

Further experience in coordinating all the factors entering into a painting, and a technical study of methods and materials.

*Course 174B will be given in the spring term; 174A in the summer term.

182A-182B. Design in Sculpture. (2-2) Yr. Beginning either term.

Prerequisite: courses 22, 164A-164B. Fee, \$2.50 a term. Mr. Cox

Problems in creative expression; modeling of figures in terra cotta; portraiture.

183A. Modern Costume. (2) I.

Mrs. Sooy

Prerequisite: course 21A.

186A. Advanced Interior Decoration. (2) II.

Prerequisite: course 156B.

Practice in the creative and individualized use of the materials of home furnishing. Experience in actual problems of interior design in shops and homes.

199A-199B. Special Studies for Advanced Students. (1-4; 1-4) Yr. Beginning either term.

Mr. Cox, Mrs. Sooy, Mr. Hilpert, Miss Chandler, Miss Andreson

Prerequisite: senior standing, an average grade of B or higher in courses in art, and the consent of the instructor.

Advanced individual work upon specific problems connected with art and education.

GRADUATE COURSES

271A-271B. Advanced History of Art: Seminar. (2-2) Yr. Mr. Wright

299A-299B. Special Studies for Advanced Students. (1-6; 1-6) Yr. Beginning either term. Mr. Cox, Mrs. Sooy, Mr. Hilpert, Miss Chandler

PROFESSIONAL COURSES IN METHOD

330. Industrial Arts for the Elementary School. (3) I, II.
Fee, \$2.50.

Miss White

370A. Principles of Art Education. (2) I, II.

Mr. Hilpert

A study of objectives, child growth and development; general educational principles as related to art education.

ASTRONOMY

FREDERICK C. LEONARD, Ph.D., Associate Professor of Astronomy (Chairman of the Department).

SAMUEL HERRICK, JR., Ph.D., Assistant Professor of Astronomy.

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

Letters and Science List.—All undergraduate courses in astronomy are included in the Letters and Science List of Courses. For regulations governing this list, see the CIRCULAR OF INFORMATION.

Preparation for the Major.—Required: general astronomy and practice in observing (Astronomy 7A-7B and 2); general physics (Physics 1A-1B-1C-1D or, in exceptional cases, Physics 2A-2B); plane trigonometry, plane analytic geometry, and differential and integral calculus (Mathematics CF, 3A, 3B, and 4A); and first-year English (English 1A-1B). Recommended: Public Speaking 1A-1B and a reading knowledge of at least one modern foreign language.

The Major.—At least 18 upper division units of astronomy, and as many more upper division units as are required to total 24, selected from courses in astronomy, physics, or mathematics, all subject to the approval of the Department of Astronomy.

LOWER DIVISION COURSES

There are two courses in general elementary astronomy, namely, a term course, Astronomy 1, without prerequisites, and a year course, Astronomy 7A-7B, with prerequisites in physics and mathematics. Students, particularly those majoring, or intending to major, in a physical science or mathematics, who have the prerequisites for Astronomy 7A-7B, are advised to take that course rather than Astronomy 1, which is not open to students who have had Astronomy 7A or 7B.

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

Mr. Leonard, Mr. Herrick

Lectures, three hours; discussion section, one hour.

The general principles and the fundamental facts of astronomy, with particular emphasis on the solar system.

°2. Practice in Observing. (1) II.

Mr. Leonard, Mr. Herrick

Prerequisite: course 1 and plane trigonometry, or credit or registration in course 7A or 7B.

Practical work for beginners, including constellation studies, telescopic observations of celestial objects, laboratory exercises cognate to the material of courses 1 and 7A-7B, and regularly scheduled excursions to the neighboring observatories and planetarium.

3. Practical Astronomy for Engineering Students. (1) II.

Mr. Leonard, Mr. Herrick

Prerequisite: Civil Engineering 1FA and credit or registration in Civil Engineering 1FB.

A course for students of civil engineering; 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.

* May not be offered, spring or summer term, 1944.

***7A-7B. General Astronomy. (3-3) Beginning II only. Mr. Leonard**

Prerequisite or concurrent: a college course in physics and Mathematics 3A. Course 7B may be taken before 7A. Course 2 may be elected for observational and laboratory work in connection with this course, which is designed especially for students majoring, or intending to major, in a physical science or mathematics, and is required of those preparing to major in astronomy.

The general principles and the fundamental facts of astronomy in all of its branches, with special emphasis on the solar system, developed and discussed in detail.

12. Celestial Navigation. (3) I, 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.

15. Navigation and Nautical Astronomy. (3) I, II. Mr. Leonard, Mr. Herrick

Prerequisite: Mathematics C and 8 or the equivalent.

Navigational instruments; compass correction; the sailings; dead reckoning; piloting; application of plane and spherical trigonometry and other mathematical concepts to navigation, including the celestial sphere.

UPPER DIVISION COURSES

Lower division courses in astronomy are not prerequisite to upper division courses unless specified.

***100. The Historical Development of Astronomy. (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.

***102. Stellar Astronomy. (3) I. Mr. Leonard**

Prerequisite: course 7A-7B or 117A.

A general review of stellar astronomy, with special emphasis on the results of modern researches.

***105. Spherical Astronomy. (3) II. Mr. Leonard, Mr. Herrick**

Prerequisite: course 2 or 3 or 7A, and Mathematics 3B.

Spherical trigonometry and its applications to astronomy; the fundamentals of spherical astronomy, including such subjects as the celestial sphere and its systems of coördinates, time, and the correction of observations; the use of star maps, star catalogues, and almanacs.

* May not be offered, spring or summer term, 1944.

•107. **The Reduction of Observations.** (3) I. Mr. Leonard, Mr. Herrick

Prerequisite: Mathematics 3B-4A.

Analytical, arithmetical, and graphical methods employed in the handling of numerical and observational data, including the theory of errors and least squares and its application to the solution of astronomical, physical, chemical, and engineering problems.

•108. **Interpolation.** (3) 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.

•115. **The Determination of Orbits.** (3) II.

Mr. Herrick

Prerequisite: Mathematics 3B-4A.

The theory and calculation of the orbits and ephemerides of comets and minor planets.

•117A-117B. **Astrophysics.** (3-3) Yr.

Mr. Kaplan

A laboratory period will occasionally be substituted, by appointment, for one of the regular class periods. Open to students whose major subject is some physical science or mathematics. This course is acceptable in partial fulfillment of the requirements of the major in physics. 117A is a requirement of the major in meteorology.

A general review of spectroscopy and astronomical physics, with special emphasis during the first term on the solar system.

•118. **Meteoritics.** (3) II.

Mr. Leonard

Open to students whose major subject is some physical science, particularly astronomy, geology, or chemistry.

The science of meteorites and meteors.

199. **Special Studies in Astronomy or Astrophysics.** (1 to 4) I, II.

The Staff (Mr. Leonard in charge)

Prerequisite: the consent of the instructor. Sec. 2, "Special Studies in Astrophysics," is acceptable in partial fulfillment of the requirements of the major in physics.

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

* May not be offered, spring or summer term, 1944.

BACTERIOLOGY

THEODORE D. BECKWITH, Ph.D., Professor of Bacteriology (Chairman of the Department).

ELINOR LEE BEEBE, R.N., Ph.D., Associate Professor of Public Health Nursing.

ANTHONY J. SALLE, Ph.D., Associate Professor of Bacteriology.

† CLAUDE E. ZOBELL, Ph.D., Associate Professor of Marine Microbiology.

MARGARET M. ROBERTSON, R.N., M.A., Assistant Professor of Public Health Nursing.

✓ VLADIMIR P. SOKOLOFF, Ph.D., Assistant Professor of Bacteriology.

MERIDIAN RUTH BALL, Sc.D., Instructor in Bacteriology.

MARGUERITE BEHEMAN, R.N., M.A., Associate in Public Health Nursing.

OLIVE ANN SLOCUM, R.N., M.A., Associate in Public Health Nursing.

GORDON H. BALL, Ph.D., Associate Professor of Zoölogy.

ORDA A. PLUNKETT, Ph.D., Associate Professor of Botany.

HELEN M. CROCKETT, M.A., M.S.S., Lecturer in Family Case Work.

ORREN LLOYD-JONES, M.D., Lecturer in Public Health Nursing.

COLLEGE OF LETTERS AND SCIENCE

Letters and Science List.—All undergraduate courses in bacteriology and public health are included in the Letters and Science List of Courses. For regulations governing this list, see the CIRCULAR OF INFORMATION.

Preparation for the Major.—Bacteriology 1, Chemistry 1A-1B, Zoölogy 15, Botany 1A or 1B, Physics 2A-2B, French or German. Recommended: Chemistry 6A, 8; Zoölogy 4.

The Major.—Bacteriology 103, either 105 or 106, 106C; also 16 units of upper division work in related subjects, these to be selected from the following series: Bacteriology 104, 105, 106, 106C, 107; Public Health 101A, 101B; Botany 105A, 119, 126, 127, 191A, 191B; Zoölogy 101, 105, 106, 107, 107C, 111, 111C, 111H, 118; Chemistry 107, 107B, 108, 109A, 109B; Home Economics 159; Soil Science 110. Courses are to be chosen with the approval of the department.

Curriculum for Medical Technicians.—For details, see the ANNOUNCEMENT OF THE COLLEGE OF LETTERS AND SCIENCE, LOS ANGELES.

Laboratory Fees.—Course 1, \$14.50; 103, \$17.50; 105, \$11.50; 106C \$11.50; 107, \$8; 199A, 199B, \$9.

COLLEGE OF APPLIED ARTS

Admission to the curriculum in Public Health Nursing: Required. Psychology 21-22; Sociology 30A-30B.

The Certificate Program in Public Health Nursing.

Public Health Nursing 402, 418, 419, 420; Public Health 101A-101B; Sociology 120, 181; Psychology 110, Education 111, Home Economics 32, American Institutions 101.

† Member of the staff of the Scripps Institution of Oceanography, La Jolla.

✓ On leave for duty in the armed forces.

California State Certificate in Public Health Nursing. Upon completion of the certificate program, students will make individual application to the State Department of Public Health for the state certificate. Application forms may be obtained from the State Office Building.

California State Health and Development Credential. Students are advised to include in the certificate program *Education 151, which is required for this credential but not for the certificate in Public Health Nursing. Students make application for this credential directly to the State Department of Education, Sacramento, which also answers questions on these state regulations and their interpretation as to individual qualifications.

For complete degree plan and additional requirements of the College of Applied Arts see CIRCULAR OF INFORMATION and ANNOUNCEMENT OF THE COLLEGE OF APPLIED ARTS, Los Angeles. Recommended electives: English 6 units; Public Speaking 122; Education 106, 112, 123, 160, 164, 180; Psychology 112; Home Economics 143, 168; Spanish.

Curricula in Pre-nursing. For details see the ANNOUNCEMENT OF THE COLLEGE OF APPLIED ARTS, Los Angeles.

Red Cross Certification in Home Nursing and Nurse's Aide Training. National Service courses, Public Health Nursing 11, 14, 15 are planned to meet Red Cross requirements, and are available to students not majoring in Public Health Nursing.

Field Fee. Public Health Nursing 420, \$20.

LOWER DIVISION COURSES

1. Fundamental Bacteriology. (4) I, II.

Mr. Salle and Staff

Prerequisite: Chemistry 1A. Students who have credit for course 6 will receive only three units for course 1. Fee, \$14.50.

Early history of bacteriology; effects of physical and chemical agencies upon bacteria; biochemical activities of bacteria; the bacteriology of the air, water, soil, milk and dairy products, other foods; industrial applications. The laboratory exercises include an introduction to bacteriological technique.

6. General Bacteriology. (2) II.

Mr. Beckwith

Students who have credit for course 1 will receive only one unit for course 6.

A cultural course for nontechnical students.

UPPER DIVISION COURSES

103. Advanced Bacteriology. (4) II.

Mr. Beckwith

Prerequisite: course 1. Fee, \$17.50.

The more advanced principles of the life activities, growth, and morphology of bacteria. The etiology of disease.

104. Soil Bacteriology. (2) II.

Mr. Sokoloff

Prerequisite: course 1.

The microscopic flora of soil: the morphology, function, and metabolism of soil bacteria.

* Students are urged to complete this course as early as possible. It is offered occasionally in the six weeks' Summer Session and once yearly in the Extension Division.

105. Serology. (4) II.

Mrs. Ball

Lecture, one hour; laboratory, nine hours. Prerequisite: course 103. Limited to twelve students. Fee, \$11.50.

The theory and practice of serological methods.

106. Metabolism of Bacteria. (2) I.

Mr. Salle

Lectures and discussions. Prerequisite: course 1 and Chemistry 8.

Chemical studies of fats, carbohydrates, proteins, and nucleic acids of bacteria; nutrition of bacteria; effect of vitamins on their growth; enzymes of bacteria and their reactions; respiration; respiratory enzymes; coenzymes; anaerobiosis; purefactions; protein sparing action; fermentations; bacterial photosynthesis; bacterial metabolic methods.

106C. Metabolism of Bacteria Laboratory. (2) I.

Mr. Salle

Prerequisite or concurrent: course 106. Fee, \$14.50.

107. Public Health Bacteriology. (4) II.

Mrs. Ball

Lecture, one hour; laboratory, nine hours. Prerequisite: course 103. Designed for students who plan careers in the fields of public health and clinical bacteriology. Fee, \$8.

A study of diagnostic procedures.

195. Proseminar. (2) I, II.

Mr. Beckwith

Prerequisite: course 103.

Library problems.

199A-199B. Problems in Bacteriology (2 to 4 each term) Yr.

Mr. Beckwith and Staff

Prerequisite: the consent of the instructor. Fee, \$9 a term.

MICROBIOLOGY**GRADUATE COURSES****†210. Advanced Bacterial Physiology. (3) II.**

Mr. Salle

Prerequisite: Bacteriology 106.

Physiological activities of microorganisms in the light of more advanced principles.

†251A-251B. Seminar in Microbiology. (2-2) Yr.

Messrs. Ball, Beckwith and Plunkett

293A-293B. Research in Microbiology. (2-5; 2-5) Yr.

Messrs. Ball, Beckwith and Plunkett

PUBLIC HEALTH**UPPER DIVISION COURSES****101A. Public Health and Preventive Medicine. (8) I.**

Mr. Lloyd-Jones

Prerequisite: Bacteriology 1 or Zoölogy 1; or, for students in the Public Health Nursing Curriculum, the consent of the instructor.

Beginnings and backgrounds of medicine. Nature of infection and immunity. Discussion of the most important communicable diseases with special emphasis on their control and prevention.

† To be given if a sufficient number of students enroll.

101B. Public Health and Preventive Medicine. (3) II. Mr. Lloyd-Jones

Prerequisite: Bacteriology 1 or Zoölogy 1; or, for students in the Public Health Nursing Curriculum, the consent of the instructor.

Development, organization and administration of public health; social trends of medicine; collection and interpretation of vital statistics; environmental sanitation; principles of epidemiology with some special control programs such as tuberculosis, venereal disease, mental hygiene, degenerative diseases.

PUBLIC HEALTH NURSING**LOWER DIVISION COURSES****11. Home Nursing. (1) I.****Mrs. Behrman**

Class discussion and laboratory. Students completing the course satisfactorily receive the American Red Cross Certificate.

Procedures of home nursing.

14. Volunteer Nurse's Aide Training. (1) I.**Miss Beebe, Mrs. Robertson and Staff**

Lecture and demonstrations, 12 hours total; laboratory, 24 hours total. Prerequisite: acceptance by American Red Cross. Limited to 24 students.

15. Volunteer Nurse's Aide Training Practice. (1) I, II. Miss Slocum

Supervised practice in designated local hospital wards, 45 hours total. Prerequisite: course 14. Students completing satisfactorily courses 14 and 15 receive the Red Cross Volunteer Nurse's Aide Certificate.

PROFESSIONAL COURSES**401. Methods of Teaching Home Nursing. (3) I.****Miss Beebe**

Discussion, demonstration; student planning, presentation, and practice of methods of procedure of the Red Cross Home Nursing Course.

418. Principles and Practice in Public Health Nursing. (3) I. Miss Beebe

A general view of public health nursing as illustrated by its present scope and methods. A study of the objectives of public health nursing, applied to all phases of the services, including maternity, infancy, preschool, school, and industrial.

420. Field Experience in Public Health Nursing. (6) I, II. Mrs. Robertson

Prerequisite: completion of the academic program for the Public Health Nursing Certificate. Sixteen weeks of continuous supervised field assignment with designated affiliating agencies of the Los Angeles vicinity. Students carry no outside work or other study during the field program. This period does not affect the residence requirement. Fee, \$20.

BOTANY

OLENUS L. SPONSER, Ph.D., Professor of Botany (Chairman of the Department).

CARL C. EPLING, Ph.D., Associate Professor of Botany and Curator of the Herbarium.

ARTHUR W. HAUPT, Ph.D., Associate Professor of Botany.

ORDA A. PLUNKETT, Ph.D., Associate Professor of Botany.

FLORA MURRAY SCOTT, Ph.D., Associate Professor of Botany.

Letters and Science List.—All undergraduates courses in this department are included in the Letters and Science List of Courses. For regulations governing this list, see the CIRCULAR OF INFORMATION.

Preparation for the Major.—Botany 1A-1B, 6 and 7, Chemistry 1A-1B, German 1, 2. In addition to these courses, certain phases of botanical work require Geology 3, 5, Physics 2A-2B, Bacteriology 1, and Zoölogy 1, 2.

The Major.—Seventeen units of upper division botany, including courses 105A-105B and 106A-106B; and in addition, 7 units in botany or related courses—bacteriology, chemistry, geology, paleontology, and zoölogy—to be chosen with the approval of the department.

Laboratory Fees.—Course 7, \$3.50; 6, 111, 113, \$2.50.

LOWER DIVISION COURSES

1A. General Botany. (4) I, II.

Mr. Epling, Miss Scott

Lectures, two hours; laboratory, four hours.

An introduction to the structure, functions, and environmental relations of the seed plants.

1B. General Botany. (4) II.

Mr. Plunkett

Lectures, two hours; laboratory, four hours. Prerequisite: course 1A.

The evolution of the plant kingdom, dealing with the comparative morphology of all the great plant groups.

6. Plant Anatomy. (3) I.

Miss Scott

Lecture, one hour; laboratory, six hours. Prerequisite: course 1A. Fee, \$2.50.

The microscopic structure of the higher plants with particular reference to the development and differentiation of vegetative tissues.

7. Plant Physiology. (4) I.

Mr. Sponsler

Lecture, two hours; laboratory, six hours. Prerequisite: course 6, and chemistry. Fee, \$3.50.

Experimental work designed to demonstrate various activities of the plant.

UPPER DIVISION COURSES

Botany 1A, 1B are prerequisite to all upper division courses.

105A. Algae and Bryophytes. (4) II.

Mr. Haupt

Lectures, two hours; laboratory, six hours.

A study of the structure, development, and phylogenetic relationships of the principal orders of fresh water and marine algae, and of liverworts and mosses.

106B. Angiosperms. (3) I.

Mr. Epling

Lecture, one hour; laboratory, six hours, and additional field work to be arranged. Designed for botany majors, teachers of nature study, and students in the College of Agriculture.

A survey of the chief orders and families of the flowering plants involving a study of their gross structure, phylogenetic classification, and geographical distribution.

113. Physiological Plant Anatomy. (3) II.

Miss Scott

Lecture, one hour; laboratory, six hours. Prerequisite: courses 6 and 7. Fee, \$2.50.

A study of the tissues of the higher plants in relation to function; a survey of the visible structural and reserve materials of the plant body.

119. Mycology. (3) II.

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.

191B. Molecular Structure of Biological Materials. (2) I.

Mr. Sponsler

Prerequisite: senior standing, or the consent of the instructor; Physics 2A-2B, Chemistry 8, and Botany 1A-1B or Zoölogy 1, 2, and in addition advanced courses in biological fields.

An adaptation of our knowledge of atomic and molecular structure to our biological conceptions of protoplasm and cell parts.

199A-199B. Problems in Botany. (2-2) Yr.

Mr. Sponsler and Staff

Prerequisite: senior standing.

GRADUATE COURSES

252A-252B. Seminar in Principles and Theories of Botany. (2-2) Yr.

Mr. SPONSLE

253A-253B. Seminar in Special Fields of Botany. (1-1) Yr.

The STAFF

253C-253D. Second Seminar in Special Fields of Botany. (1-1) Yr.

The STAFF

278A-278B. Research in Botany. (2-6; 2-6) Yr.

The STAFF

BUSINESS ADMINISTRATION

HOWARD SCOTT NOBLE, M.B.A., C.P.A., Professor of Accounting (Chairman of the Department of Business Administration).

FLOYD F. BURTCHETT, Ph.D., Associate Professor of Banking and Finance.

RALPH CASSADY, JR., Ph.D., Associate Professor of Marketing.

IRA N. FRISBEE, M.B.A., C.P.A., Associate Professor of Accounting.

WILBERT E. KARRENBOOK, Ph.D., Associate Professor of Accounting.

SAMUEL J. WANOUS, Ph.D., Associate Professor of Office Management and Business Education.

♥ JOHN C. CLENDENIN, Ph.D., Assistant Professor of Banking and Finance.

♥ A. GERHARD EGER, LL.B., Assistant Professor of Business Law.

GEORGE W. ROBBINS, M.B.A., Assistant Professor of Marketing.

WILLIAM F. BROWN, Ph.D., Instructor in Marketing.

WAYNE L. MCNAUGHTON, Ph.D., Instructor in Management and Industry.

ESTELLA B. PLOUGH, Associate in Commercial Practice.

OLIVER B. SCHWAB, LL.B., Lecturer in Business Law.

♥ HARRY SIMONS, M.A., C.P.A., Lecturer in Accounting.

College of Business Administration

Preparation for the Major.—Business Administration 1A-1B, Economics 1A-1B, English 1A, Public Speaking 1A, Mathematics 2A-2B, Geography 5A-5B.

The Upper Division.

1. General requirements: (a) in the junior year, courses 18A-18B, 120, 140, 160A, 180, and Economics 135; (b) in the senior year, course 100.

2. Special elective: 3 units chosen from the following: courses 132 (except for finance majors), 145, 154; Economics 131A-131B, 150, 170, 171, 173.

3. Nine upper division units in one of the following six majors: Accounting, Banking and Finance, Management and Industry, Marketing, Office Management, General Business.

Electives.—All undergraduate courses in the Letters and Science List (see the CIRCULAR OF INFORMATION), 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, 140, 145, 153, and 180. For regulations governing this list, see the CIRCULAR OF INFORMATION.

Fees.—Courses 3A, 3B, \$2.50; 140, \$3.50.

♥ On leave for duty in the armed forces.

LOWER DIVISION COURSES**1A-1B. Principles of Accounting. (3-3) Beginning either term.****Mr. Noble and Staff**

Two hours lecture, and two hours laboratory. Prerequisite: sophomore standing.

2A-2B. Accounting Laboratory. (1-1) Yr.**Mrs. Plough**

Should be taken concurrently with course 1A-1B.

3A-3B. Secretarial Training. (2-2) Beginning either term.

Fee, \$2.50 each term.

Mr. Wanous in charge

Principles of operating various kinds of typewriters, special adaptations of each, and development of speed and accuracy.

4A-4B. Secretarial Training. (3-3) Beginning either term.**Mr. Wanous in charge**

Development of speed in writing and reading shorthand from dictation. An analysis of various techniques used in mastery of technical vocabularies.

18A-18B. Business Law. (3-3) Yr.**Mr. Schwab**

Prerequisite: junior standing.

Law in its relationship to business. Essentials of the law of contracts, agency, bailments, sales, and negotiable instruments.

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. Cassady, Mr. Robbins**

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.

120. Business Organization. (3) I, II.**Mr. Brown, Mr. Cassady**

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.

121B. Industrial Management. (3) I.*Mr. McNaughton**

Prerequisite: courses 120 and 121A.

An intensive study of the techniques of executive control and methods of training supervisors and executives.

* Open only to students registered in College of Business Administration and to graduate students who have had the necessary preliminary preparation.

- *125. Organization and Management Problems. (3) I.** Mr. McNaughton
Prerequisite: senior standing.

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.

- 132. Investments. (3) I.** Mr. Burtchett
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.

- 140. Business Statistics. (4) I, II.** Mr. Burtchett, Mr. Frisbee

Lectures, two hours; laboratory, four hours. Students who have credit for Economics 40 will receive only one unit of credit for this course. Fee, \$3.50.

Sources of statistical data; construction of tables, charts, and graphs; study of statistical methods; averages, measures of deviation, index numbers, secular trend, seasonal variation, correlation; study of business cycles; practical application of statistical methods in business problems.

- 144. Business and Statistical Research. (2) I.** Mr. McNaughton
Prerequisite: senior standing.

Research philosophy and methodology and the application of specific research techniques to actual business problems. These problems will be made possible by the cooperation of various concerns in southern California.

- 145. Principles of Insurance. (3) I.** Mr. Burtchett

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.

- 152. Secretarial Problems. (3) I.** Mr. Wanous
Prerequisite: course 151.

A study of non-stenographic office problems and their solutions, including those encountered in filing, preparing statistical reports, handling incoming and outgoing correspondence, and proofreading. A study of the rules of conduct affecting all office employees, and development of understanding of various types of office machines.

- 153. Personnel Management. (3) I.** Mr. McNaughton

A study of the administration of human relations in industry; historical and legal aspects of industrial relations; collective bargaining; functions of the personnel manager; techniques of selection and placement; use of psychology in personnel relations; stimulation of interest; labor turnover; wage-payment plans and incentive systems; training; accidents and health; miscellaneous personnel services; civil service.

* Open only to students registered in College of Business Administration and to graduate students who have had the necessary preliminary preparation.

***154. Office Organization and Management. (3) I. Mr. Wanous**

Analysis of functions of various office departments, their organization and management. Methods used in selecting and training office personnel; office planning and layout; selection and care of office supplies and equipment; methods and devices used to improve operating efficiency; types and uses of office appliances; techniques for performing office duties.

160A. Advanced Accounting. (3) I, II. Mr. Frisbee, Mr. Karrenbrock

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. Frisbee, Mr. Karrenbrock

Prerequisite: course 160A.

Partnerships, joint ventures, agencies and branches, consolidated balance sheets, consolidated profit and loss statements, statements of affairs, receiver-ships, realization and liquidation statements, estates and trusts, and actuarial accounting problems.

***161. Cost Accounting. (3) II. Mr. Karrenbrock**

Prerequisite: course 160A.

Distribution of department store expenses, general factory accounting, process costs, job-lot accounting, foundry accounting, budgets and control of costs, expense distributions, burden analyses, differential costs, by-products and joint-products, and standard costs.

***162. Auditing. (3) I. 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) II. Mr. Frisbee**

Prerequisite: course 160B.

A study of the current federal revenue acts as relating to income taxation, excess profits taxes, estate taxes, and individual, partnership, and corporation gift taxes.

180. Elements of Marketing. (3) I, II. Mr. Robbins, Mr. Brown

A survey designed to give a basic understanding of the major marketing methods, institutions, and practices. The problems of retailing, wholesaling, choosing channels of distribution, advertising, coöperative marketing, pricing, market analysis, and marketing costs are defined from the standpoint of the consumer, the middleman, and the manufacturer.

***184. Sales Management. (3) II. Mr. Robbins**

Prerequisite: course 180.

An intensive study, principally by the case method, of sales methods from the point of view of the sales manager. Includes the study of merchandising policy, choice of channels of distribution, market research and analysis, prices and credit terms, sales methods and campaigns; organization of sales department, management of sales force, and budgetary control of sales.

* Open only to students registered in College of Business Administration and to graduate students who have had the necessary preliminary preparation.

185. Advertising Principles. (3) II.*Mr. Brown**

Prerequisite: course 180.

A survey of the field of advertising—its use, production, administration, and economic implications. Includes the study of advertising psychology, practice in the preparation of advertisements, consideration of the methods of market research and copy testing, and analysis of campaign planning and sales coördination.

186. Retail Store Management. (3) I.*Mr. Cassady**

A study of retailing methods from the standpoint of the owner and manager. Includes the case study of such subjects as purchasing, planning, stocks, inventory methods, markup, accounting for stock control, pricing, style merchandising, and general management problems.

199A-199B. Special Problems in Business Administration. (3-3) Yr.*The Staff**

Prerequisite: senior standing, 6 units of upper division courses in business administration, and the consent of the instructor.

GRADUATE COURSE**290. Problems in Business Administration. (1 to 4), I, II.****The Staff****PROFESSIONAL COURSES IN METHOD****370A. Methods of Teaching Secretarial Subjects. (2) I.****Mr. Wanous**

A survey and evaluation of the methods and materials used in teaching typewriting, shorthand, transcription, and office training to secondary school pupils. Also considered are achievement standards, grading plans, measurement devices, and procedures for adapting instruction to various levels of pupil ability.

370C. Methods of Teaching Handwriting. (2) I.**Mrs. Plough**

A course in the improvement of handwriting. A survey of methods of teaching handwriting in the secondary schools, including analyses of handwriting difficulties and study of clinical procedures.

* Open only to students registered in College of Business Administration and to graduate students who have had the necessary preliminary preparation.

CHEMISTRY

WILLIAM R. CROWELL, Ph.D., Professor of Chemistry.

MAX S. DUNN, Ph.D., Professor of Chemistry.

WILLIAM G. YOUNG, Ph.D., Professor of Chemistry (Chairman of the Department).

✧ FRANCIS E. BLACET, Ph.D., Associate Professor of Chemistry.

JAMES B. RAMSEY, Ph.D., Associate Professor of Chemistry.

G. ROSS ROBERTSON, Ph.D., Associate Professor of Chemistry and Director of The Chemical Laboratories.

HOSMER W. STONE, Ph.D., Associate Professor of Chemistry.

✧ CHARLES D. COBYELL, Ph.D., Assistant Professor of Chemistry.

✧ THEODORE A. GEISSMAN, Ph.D., Assistant Professor of Chemistry.

THOMAS L. JACOBS, Ph.D., Assistant Professor of Chemistry.

JAMES D. MCCULLOUGH, Ph.D., Assistant Professor of Chemistry.

SAUL WINSTEIN, Ph.D., Assistant Professor of Chemistry.

MAX T. ROGERS, Ph.D., Instructor in Chemistry.

MAURICE J. SCHLATTER, Ph.D., Instructor in Chemistry.

LAWRENCE J. ANDREWS, Ph.D., Lecturer in Chemistry.

SAUL G. COHEN, Ph.D., Lecturer 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 the CIRCULAR OF INFORMATION.

Preparation for the Major.—Required: Chemistry 1A-1B, 6A, Physics 1A-1C, trigonometry, Mathematics 8, 3A-3B, 4A, English 1A, Public Speaking 1A or English 1B, and a reading knowledge of German. Recommended: an additional course in chemistry, Physics 1D, Mathematics 4B.

Students are warned that the lower division curriculum prescribed for the College of Chemistry at Berkeley does not meet the requirements for the degree of Associate in Arts in the College of Letters and Science at Los Angeles.

The Major.—A limited amount of upper division credit may be allowed for chemistry courses from the group 6A, 6B, 8, and 9, provided such courses

✧ On leave for civilian war work.

were taken by the student while he was in the upper division. Not more than 9 units total of such credit will be counted as upper division units, either for the chemistry major or for other University curricula. The minimum requirement for the major is: Chemistry 6A-6B (6), 8 and 9 (6), 110A-110B (6), 111A-111B (4). The remainder of the 24 required upper division units are to be taken in chemistry, and not less than two courses are to be selected from the following group: courses 101, 103, 107A, 107B, and 121.

In order to be eligible for full membership in the American Chemical Society in the minimum time after graduation a chemistry major must fulfill the minimum requirements adopted by the Society for professional training of chemists. Special attention is directed to the fact that at least 6 units of lecture courses and 4 units of laboratory work are required in organic chemistry. Further details of the requirements are obtainable from department advisers.

Laboratory Fees.—These fees cover the cost of material and equipment used by the average careful student. Any excess over this amount will be charged to the individual responsible. The fees are as follows: Courses 1A, 1B, \$16; 2A, \$11.50; 6A, 6B, \$19.50; 9, \$31; 10, \$11.50; 101, \$31; 103, 107A, 107B, \$17.50; 108, \$7.50; 111A, 111B, \$14; 121, 199, \$17.50.

LOWER DIVISION COURSES

Certain combinations of courses involve limitations of total credit, as follows: 2A and 1A, 5 units; 2A-2B and 1A, 8 units; 2A and 1A-1B, 10 units; 2A-2B and 1A-1B, 10 units.

1A. General Chemistry. (5) I, II.

Mr. McCullough, Mr. Stone

Lectures, three hours; laboratory and quiz, six hours. Prerequisite: high school chemistry, or its equivalent. Required in the Colleges of Agriculture, Chemistry, Engineering, and of pre dental, premedical, premining, prepharmacy and preoptometry students; also of majors in applied physics, bacteriology, chemistry, geology and physics and of medical technicians, and of students in home economics (curriculum C) in the College of Applied Arts. Fee, \$16.

A basic course in principles of chemistry with special emphasis on chemical calculations.

1B. General Chemistry. (5) I, II.

Mr. Rogers, Mr. McCullough

Lectures, three hours; laboratory and quiz, six hours. Prerequisite: course 1A. Required in the same curricula as course 1A. Fee, \$16.

Continuation of course 1A with special applications to the theory and technique of qualitative analysis; periodic system; structure of matter.

2A. Introductory General Chemistry. (5) I, II.

Mr. Kirschman

Lectures and quizzes, four hours; laboratory, three hours. This course satisfies the chemistry requirements for nurses as prescribed by the California State Board of Nursing Examiners; it satisfies the chemistry requirements for the majors in physical education and is required of certain home economics majors in the College of Applied Arts. Fee, \$11.50.

An introductory course emphasizing the principles of chemistry and including a brief introduction to elementary organic chemistry.

6A. Quantitative Analysis. (3) I, II.

Mr. Winstein

Lectures, discussions, and quizzes, two hours; laboratory, six hours. Prerequisite: course 1A-1B. Required of chemistry majors, economic geologists, petroleum engineers, sanitary and municipal engineers, medical technicians, and of premedical, College of Chemistry, metallurgy, and certain agriculture students. Fee, \$19.50.

Principles and technique involved in fundamental gravimetric and volumetric analyses.

6B. Quantitative Analysis. (3) I, II.

Mr. McCullough, Mr. Crowell

Lectures, discussions, and quizzes, two hours; laboratory, six hours. Prerequisite: course 6A. Required of chemistry majors, economic geologists, and College of Chemistry students. Fee, \$19.50.

A continuation of course 6A but with greater emphasis on theory. Analytical problems in acidimetry and alkalimetry, oxidimetry, electrolytic deposition, and semiquantitative procedures.

8. Organic Chemistry. (3) I, II.

Mr. Young

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, chemistry, home economics, some agriculture majors, and College of Chemistry students.

An introductory study of the compounds of carbon, including both aliphatic and aromatic derivatives.

9. Methods of Organic Chemistry. (3) I, II.

Mr. Schlatter

Lectures and quizzes on principles of laboratory manipulation, two hours; laboratory, six hours. Prerequisite or concurrent: course 8. Required of chemistry majors, College of Chemistry students, premedical and pre dental students, and majors in petroleum engineering. Fee, \$31.

Laboratory work devoted principally to synthesis, partly to analysis.

†10. Organic and Food Chemistry. (4) II.

Mr. Jacobs

Lectures, three hours; laboratory, three hours. Prerequisite: courses 1A and 1B, or 2A. Arranged primarily for majors in home economics, Fee, \$11.50.

UPPER DIVISION COURSES**†101. Organic Synthesis. (3) I, II.**

Mr. Robertson, Mr. Jacobs

Lecture, one hour; laboratory, eight hours. Prerequisite: courses 8 and 9 and the ability to read scientific German. Fee, \$31.

Advanced organic preparations; introduction to research methods.

†102. Advanced Organic Chemistry. (3) I, II.

Mr. Winstein, Mr. Robertson

Prerequisite: course 8 and laboratory work in organic chemistry.

Condensations; mechanism of reaction; isomerism; alicyclic series, dyes, etc.

†103. Qualitative Organic Analysis. (3) I.

Mr. Young

Lecture, one hour; laboratory, six hours. Prerequisite: courses 6A-6B, 8, and 9. Fee, \$17.50.

Classification, reactions, and identification of organic compounds.

† To be given if a sufficient number of students enroll.

107A. Amino Acids and Proteins. (4) II.

Mr. Dunn

Lectures, two hours; laboratory, six hours. Prerequisite: course 6A, 8, and 9. Fee, \$17.50.

***107B. Carbohydrates and Fats. (4) II**

Lectures, two hours; laboratory, six hours. Prerequisite: courses 6A, 8, and 9. Fee, \$17.50.

†108. General Biochemistry. (4) II.

Mr. Dunn

Lectures, three hours; laboratory or demonstrations, three hours. Prerequisite: course 8; recommended, courses 6A, 9. May not be offered by chemistry majors as fulfilling part of the laboratory requirements in organic chemistry. Fee, \$7.50.

110A. Physical Chemistry. (3) I.

Mr. Rogers

Prerequisite: course 6B; Physics 1A, 1C; Mathematics 4A. Required of chemistry majors.

110B. Physical Chemistry. (3) II.

Mr. Ramsey

Prerequisite: course 110A and Mathematics 4A. Required of chemistry majors.

A continuation of course 110A.

110G. Physical Chemistry. (3) I.

Mr. Rogers

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.

110H. Physical Chemistry. (3) II.

Mr. Ramsey

Prerequisite: course 110A or 110G. Open only by permission of the chairman of the department to graduate students who have not taken course 110B in this institution.

111A. Physical Chemistry Laboratory. (2) I.

Mr. Ramsey

Laboratory, six hours. Prerequisite or concurrent: course 110A. Required of chemistry majors. Fee, \$14.

Physicochemical problems and measurements.

111B. Physical Chemistry Laboratory. (2) II.

Mr. Rogers

Laboratory, six hours. Prerequisite: course 110A; concurrent: course 110B. Required of chemistry majors. Fee, \$14.

A continuation of course 111A.

†121. Advanced Inorganic Chemistry. (3) II.

Mr. Stone

Lecture, one hour; laboratory, six hours. Prerequisite: course 6B. Fee, \$17.50.

Equilibrium and reaction rate; periodic classification. Laboratory work principally synthetic and analytic, involving special techniques.

†140. Industrial Chemistry. (2) II.

Mr. Crowell

Prerequisite: course 110A. Problems and discussions.

Industrial stoichiometry; behavior of gases; vaporization and condensation; thermochemistry; weight and heat balance of industrial processes, etc.

* Not to be given, spring or summer term, 1944; to be given, fall term, 1944.

† To be given if a sufficient number of students enroll.

199. Problems in Chemistry. (3) I, II.

Mr. Young in charge

Prerequisite: junior standing, a good scholastic record, and such special preparation as the problem may demand. Fee, \$17.50.

GRADUATE COURSES

203. Chemical Thermodynamics. (3) I.

Mr. Ramsey

*221. Physical Aspects of Organic Chemistry. (3) II.

(3 to 6 units each term.)

Mr. Young, Mr. Winstein

222. Organic Chemistry. (3) I.

Mr. Jacobs

280A-280B-280C-280D. Research in Chemistry. I, II. Mr. Young in charge

(3 to 6 units each term.)

290A-290B-290C-290D. Advanced Research in Chemistry. I, II.

(3 to 6 units each term.)

Mr. Young in charge

* Not to be given, spring or summer term, 1944; to be given, fall term, 1944.

CLASSICS

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.

*DOROTHEA CLINTON WOODWORTH, Ph.D., Assistant Professor of Latin and Greek.

PAUL FRIEDLANDER, Ph.D., Lecturer in Latin and Greek.

HELEN FLORENCE CALDWELL, M.A., Assistant in Classics.

Letters and Science List.—All undergraduate courses in classical languages are included in the Letters and Science List of Courses. For regulations governing this list, see the CIRCULAR OF INFORMATION.

The student may take the major in classical languages either in Latin or in Greek.

Preparation for the Major.

A. Latin.—Required: four years of high school Latin, or two years of high school Latin and courses 1 and 2; courses 3A–3B, 5A, 5B. Recommended: English, French, German, Greek, Italian, Spanish.

B. Greek.—Required: either course 1A–1B or two years of high school Greek; and 5A or 5B, 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, 104A–B–C–D, 106, 115, 117, 120, 191, plus 4 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.

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.

LATIN

LOWER DIVISION COURSES

A. Beginning Latin. (4) I.

Miss Caldwell

B. Latin Readings. (4) II.

Miss Caldwell

Prerequisite: course A or one year of high school Latin.

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 B or GA, or two or three years of high school Latin.

* Absent on leave, 1948–1944.

1. **Review of Grammar; Ovid. (4) I.** Miss Caldwell
Prerequisite: course B or at least two years of high school Latin.
2. **Vergil. (4) II.** Miss Caldwell
Prerequisite: course 1, or course B with special permission of the instructor. Designed for students who have not studied Vergil in the high school.
- 3A–3B. **Latin Prose Composition. (2–2) Yr.** Miss Caldwell
Prerequisite: course 1 or three years of high school Latin.
- 5A. **A Survey of Latin Literature. (3) I.** Miss Caldwell
Prerequisite: course 2 or four years of high school Latin.
- 5B. **A Survey of Latin Literature. (3) II.** Miss Caldwell
Prerequisite: course 5A.

UPPER DIVISION COURSES

- 42A. **Roman Civilization. (2) II.** Mr. Friedlander
Knowledge of Latin not required. A study of the development of Roman culture and its influence upon the modern world.
102. **Silver Latin. (3) I.** Mr. Hoffleit
Prerequisite: courses 5A, 5B.
- 104A–104B. **Latin Composition. (1–1) Yr.** Mr. Hoffleit
Prerequisite: course 3A–3B.
Ciceronian prose.
106. **Tacitus: Annals. (3) II.** Mr. Hoffleit
Prerequisite: course 102.
120. **Roman Satire. (3) I.** Mr. Hoffleit
Prerequisite: courses 102, 106.
191. **Cicero: Selections. (3) II.** Mr. Friedlander
Prerequisite: courses 102, 106.
- 199A–199B. **Special Studies in Latin. (2–2) Yr.** Mr. Hoffleit and the Staff
Prerequisite: senior standing and at least 12 units of upper division Latin.

GRADUATE COURSES

- †200. **History of Classical Scholarship, Bibliography, and Methodology. (3) I.** Mr. Hoffleit
- †206. **The Roman Epic. (3) II.** Mr. Hoffleit
The Roman epic from Ennius to Silius Italicus.
- †208. **Lucretius. (3) I.** Mr. Hoffleit
- †253. **Seminar in Latin Studies. (3) II.** Mr. Friedlander
Textual criticism.

† To be given if a sufficient number of students enroll.

GREEK**LOWER DIVISION COURSES**

- | | |
|---|---------------------|
| 1A-1B. Greek for Beginners; Attic Prose. (4-4) Yr. | Mr. Hoffleit |
| 5A-5B. Readings in Greek. (2-2) Yr. | Mr. Hoffleit |

UPPER DIVISION COURSES

- | | |
|--|-----------------------------------|
| 100A-100B. Prose Composition. (1-1) Yr. | Mr. Hoffleit |
| Prerequisite: course 1A-1B. | |
| 101. Homer: Odyssey; Herodotus: Selections. (3) I. | Mr. Hoffleit |
| Prerequisite: course 1A-1B. | |
| 102. Plato: Apology and Crito; Lyric Poets. (3) II. | Mr. Hoffleit |
| Prerequisite: course 101. | |
| 103. Greek Drama: Euripides and Aristophanes. (3) II. | Mr. Friedlander |
| Prerequisite: courses 101, 102. | |
| 114. Plato: Republic. (3) I. | Mr. Hoffleit |
| Prerequisite: courses 101, 102. | |
| 199A-199B. Special Studies in Greek. (1-4; 1-4) Yr. | Mr. Hoffleit and the Staff |
| Prerequisite: senior standing and at least 12 units of upper division Greek.
Problems in classical philology. | |

ECONOMICS

BENJAMIN M. ANDERSON, Ph.D., Professor of Economics.

EARL JOYCE MILLER, Ph.D., Professor of Economics.

DUDLEY F. PEGRUM, Ph.D., Professor of Economics.

GORDON S. WATKINS, Ph.D., LL.D., Professor of Economics.

⇒ PAUL A. DODD, Ph.D., Associate Professor of Economics.

MARVEL M. STOCKWELL, Ph.D., Associate Professor of Economics (Chairman of the Department).

STEPHEN ENKE, Ph.D., Instructor in Economics.

GEORGE W. ROBBINS, M.B.A., Assistant Professor of Marketing.

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 the CIRCULAR OF INFORMATION.

Preparation for the Major.—Required: Economics 1A-1B, Business Administration 1A-1B and either History 4A-4B or History 5A-5B. Economics 40 is required of all majors in economics (unless they are prepared to take Statistics 131A), but it may be taken in either lower or upper division.

The Major.—Twenty-four upper division units, including two units from Economics 100A, 100B, 102, or 103. A maximum of 6 units may be offered toward the major from the following list of courses: Business Administration 131, 132, 145, 153, 160A-160B, 180; or 6 upper division units in sociology; or History 131A-131B. The 6 units must be entirely in one department.

Not more than a total of 30 upper division units in economics and business administration may be counted toward the bachelor's degree.

Students planning to undertake graduate work in economics will do well to study mathematics. For those who have not the background or the time for more extended work, Mathematics 2B or 7 is recommended.

Civil Service.—Students planning to take civil service examinations for positions as economists should include in their major economic theory, courses 135 and 138, should concentrate in two major fields in economics, and should take political science courses in public administration and constitutional law. They should consult with the departmental adviser on civil service examinations.

Majors Other than Economics.—Students with majors other than economics who wish training in economics for professional careers are advised to take courses 101, 150, 158, and 170.

General Secondary and Special Secondary Credentials.—Students planning to undertake work leading to the General Secondary Credential in Business Education or with Social Science Field Major, or the Special Secondary Credential in Business Education, should consult the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION (Los Angeles).

Laboratory Fee.—Economics 40, \$2.50.

LOWER DIVISION COURSES

1A-1B. Principles of Economics. (3-3) Beginning either term.

Mr. Miller, Mr. Stockwell, Mr. Pegrum

Lectures, two hours; quiz, one hour. Open only to lower division students or to upper division majors in economics except by permission.

⇒ On leave for civilian war work to June 30, 1944.

40. Economic and Social Statistics. (3) II.**Mr. Enke**

Lectures, two hours; laboratory, one two-hour period. Prerequisite: sophomore standing. Statistics 131A may be substituted for this course in preparation for the major in economics. Fee, \$2.50.

An introduction to methods of analyzing economic and statistical data, sources and interpretation of economic and social statistics. Mathematical treatment is reduced to the simplest possible terms.

UPPER DIVISION COURSES

Course 1A-1B is prerequisite to all upper division courses in economics.

100A. General Economic Theory. (3) I.**Mr. Enke**

An introduction to economic theory with emphasis upon its application to practical problems.

135. Money and Banking. (3) I.**Mr. Anderson**

The principles and history of money and banking, with principal reference to the experience and problems of the United States.

150. Labor Economics. (3) I, II.**Mr. Stockwell, Mr. Dodd**

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.**Mr. Dodd**

Theory of consumption and consumer demand; standards of living; family budgets. Survey of efforts to improve the position of the consumer.

152. Social Insurance. (3) II.**Mr. Dodd**

Basis of the Social Security program; unemployment insurance, workmen's compensation, old age pensions, insurance against sickness.

177. Postwar Reconstruction. (3) I.**Mr. Pegrum**

The economic problems to be faced in rebuilding a peacetime economy; the role of private enterprise; regulation of industry; rehabilitation of economic life; proposals for reconstruction.

195. Principles of International Trade. (3) I.**Mr. Robbins**

An introduction to the principles and practices of international trade and foreign exchange. A survey of the historical development of the theories of foreign trade. A brief introduction to methods and practices of exporting and importing.

GRADUATE COURSES**201B. History of Economic Doctrine. (3) I.****Mr. Watkins****232B. Relations of Government to Economic Life. (3) I.****Mr. Pegrum****235. Monetary Theory. (2) I.****Mr. Anderson*****290. Special Problems. (1-6) I, II.****The Staff**

* To be given by specific arrangement.

EDUCATION

- ♣ MERTON E. HILL, Ed.D., Professor of Education.
 DAVID F. JACKY, Ph.D., Professor of Vocational Education.
 W. W. KEMP, Ph.D., Professor of Education, Emeritus.
 EDWIN A. LEE, Ph.D., Professor of Education (Chairman of the Department) and Director of the Division of Vocational Education.
 KATHERINE L. McLAUGHLIN, Ph.D., Professor of Education.
 JUNIUS L. MERIAM, Ph.D., Professor of Education, Emeritus.
 LLOYD N. MORRISSETT, Ph.D., Professor of Education.
 WILLIAM A. SMITH, Ph.D., Professor of Education.
 CHARLES WILKIN WADDELL, Ph.D., Professor of Education.
 J. HAROLD WILLIAMS, Ph.D., Professor of Education.
 FREDRIC P. WOELLNER, Ph.D., Professor of Education.
 ERNEST CARROLL MOORE, Ph.D., LL.D., Professor of Education and Philosophy, Emeritus.
 JESSE A. BOND, Ed.D., Associate Professor of Education.
 HARVEY L. EBY, Ph.D., Associate Professor of Education and Educational Counselor.
 JOHN A. HOCKETT, Ph.D., Associate Professor of Education.
 CLARENCE HALL ROBISON, Ph.D., Associate Professor of Education, Emeritus.
 ETHEL I. SALISBURY, M.A., Associate Professor of Elementary Education.
 MAY V. SEAGOE, Ph.D., Associate Professor of Education.
 SAMUEL J. WANOUS, Ph.D., Associate Professor of Office Management and Business Education.
 FLAUD C. WOOTON, Ph.D., Associate Professor of Education.
 ♣ DAVID McDONALD, Ph.D., Assistant Professor of Education and Educational Counselor.
 CORINNE A. SEEDS, M.A., Assistant Professor of Elementary Education.
 HELEN CHRISTIANSON, Ph.D., Lecturer in Education.

Training

- JESSE A. BOND, Ed.D., Director of Training.
 JOHN A. HOCKETT, Ph.D., Associate Director of Training.
 FLAUD C. WOOTON, Ph.D., Associate Director of Training.

Departmental Supervisors

- ROBERT S. HILFERT, M.A., Associate Professor of Art Education.
 SAMUEL J. WANOUS, Ph.D., Assistant Professor of Office Management and Business Education.
 FOSS R. BROCKWAY, Ed.B., Associate in Mechanic Arts.

♣ On leave for civilian war work.
 ♣ On leave for duty in the armed forces.

HELEN CHUTE DILL, M.A., Supervisor of Training, Music.

HAZEL J. CUBBERLEY, M.A., Associate Professor of Physical Education for Women.

PAUL FRAMPTON, M.A., Associate Supervisor of Physical Education for Men.

University Elementary School

CORINNE A. SEEDS, M.A., Principal of the University Elementary School.

HELEN CHRISTIANSON, Ph.D., Supervisor of Nursery School Training.

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.

SYBIL K. RICHARDSON, M.A., School Counselor.

GERTRUDE C. MALONEY, M.A., Training Teacher, Sixth Grade.

HELEN F. BOUTON, M.A., Training Teacher, Fifth Grade.

*NORA BELLE HEFLIN CUBBER, M.A., Training Teacher, Fifth Grade.

BESSIE HOYT PERSELS, M.A., Training Teacher, Fourth Grade.

LOLA C. JENSEN, B.S., Training Teacher, Third Grade.

HELEN SUE READ, B.S., Training Teacher, Second Grade.

CLAYTON BURROW, M.S., Training Teacher, First Grade.

JANE BERNHARDT STRYKER, M.A., Training Teacher, Kindergarten.

MAXINE LEE SHIREY, A.B., Assistant Training Teacher, Kindergarten.

BLANCHE LUDLUM, M.A., Assistant Training Teacher, Nursery School.

PHOEBE JAMES, Assistant in the University Elementary School.

MARY LOVISA BARRETT, A.B., Assistant in the Nursery School.

City Training Schools

NORA STERRY ELEMENTARY TRAINING SCHOOL

ALICE H. ARMSTRONG, Ed.B., Principal.

HELEN B. KELLER, Ed.B., Supervisor of Training, Elementary.

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

MARY LINDSEY, M.A., Principal.

ETHEL I. SALISBURY, M.A., Supervisor of Training.

A staff of demonstration teachers, varying in personnel from year to year, is chosen from the Los Angeles school system to carry on work open for observation to University students, public school teachers, and administrators.

JUNIOR AND SENIOR HIGH SCHOOLS

RALPH D. WADSWORTH, M.A., Principal, University High School.

HELEN M. DARSIE, M.A., Vice-Principal, University High School.

WILLIAM F. MANN, M.A., Vice-Principal, University High School.

* Absent on leave, 1943-1944.

PAUL E. GUSTAFSON, M.A., Principal, Emerson Junior High School.
 CARRIE M. BROADED, M.A., Vice-Principal, Emerson Junior High School.
 ARTHUR G. ANDRESEN, A.B., Vice-Principal, Emerson Junior High School.
 LUZERNE W. CRANDALL, M.A., Supervisor of Training, Secondary.
 ATTILIO BISSIERI, M.A., Supervisor of Training, Secondary.
 CECILIA R. IRVINE, M.A., Supervisor of Training, Secondary.
 DOROTHY C. MERIGOLD, Ph.D., Supervisor of Training, Secondary.
 ETHEL S. MARTIN, Ed.B., Supervisor of Training, Secondary.
 FRANCES C. BROOKS, A.B., Counselor, University High School.
 HILDUR C. OSTERBERG, M.A., Counselor, Emerson Junior High School.

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 one to three student teachers at any one time. The personnel varies from term to term as the needs of the University require.

An undergraduate major is not offered in the Department of Education at Los Angeles. Students desiring to qualify for certificates of completion leading to teaching and administration credentials should consult the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION, LOS ANGELES.

College of Letters and Science

Letters and Science List.—Courses 101A–101B, 102, 106, 110, 111, 112, 114, 119, 170, 180, 185 are included in the Letters and Science List of Courses. For regulations governing this list, see the CIRCULAR OF INFORMATION.

UPPER DIVISION COURSES

History and Theory of Education

****101A–101B. History and Philosophy of Education. (3–3) Yr.**

Mr. Wooton

A survey of the theory and practice of education from ancient times, through Greece, Rome, the Middle Ages, the Renaissance, and the modern period. The purpose is to understand how our educational philosophy and practice have developed in western civilization.

106. The Principles of Education. (3) I, II.

Mr. Hockett

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.

**** Course 101B will be given in the spring term; 101A will not be given either term.**

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. Waddell**

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.**Mr. Williams**

Students who are taking or who have taken any other course in statistics will receive only one unit of credit for this course.

Statistical procedures applicable to educational problems and educational research.

119. Educational Measurement. (2) II.**Miss Seagoe**

Use of standardized tests in problems of group and individual diagnosis and evaluation.

*Early Childhood Education***125A. Kindergarten-Primary Education. (3) I, II. 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.

*Elementary Education***139. The Elementary Curriculum. (3) I.****Miss Salisbury**

Prerequisite: senior standing.

An introduction to the problem of curriculum organization as exemplified in representative courses of study. Emphasis is laid on the planning of activity units appropriate to the varying maturity levels of children.

*Educational Administration and Supervision***149. Field Work in Administration and Supervision. (2) I. Mr. Morrisett**

To be taken concurrently with or subsequent to elementary or secondary school administration.

*Vocational Education***164. Vocational Guidance. (2) I.****Mr. Jackey**

The need of vocational guidance in a changing industrial order. The technique of guidance, as exemplified in case studies.

165. Business Education. (3) I.**Mr. Wanous**

The organization, administration, and teaching of business education in secondary schools.

*Secondary Education***170. Secondary Education. (3) I, II.****Mr. Smith**

Prerequisite: senior standing and Psychology 21, and either 22 or 23.

A study of secondary education in the United States, with special reference to the needs of junior and senior high school teachers.

Social and Adult Education

180. **Social Foundations of Education. (3) I.** Mr. Woellner
Education as a factor in social evolution. Analysis of current educational practices in the light of modern social needs.
181. **Adult Education. (2) I.** Mr. Woellner
An analysis of the adult education movement to ascertain principles for organizing and conducting special and evening classes for mature students. Problems of citizenship, Americanization, and vocational and liberal education will be considered.
197. **Comparative Education. (2) II.** Mr. Smith
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.** Mr. Wanous
- 199B. **Studies in Curriculum. (2 to 4) I.** Mr. Hockett
- 199C. **Studies in Educational Psychology. (2 to 4) II.** Miss Seagoe
- 199E. **Studies in Administration. (2 to 4) I.** Mr. Morrisett
- 199F. **Studies in Guidance. (2 to 4) I.** Mr. Lee
- 199G. **Studies in Elementary School Supervision. (2 to 4) I.** Mr. Hockett

GRADUATE COURSES§

- 241A. **City School Administration. (2) I.** Mr. Morrisett
- *242A-242B. **Education in the Postwar Period. (2-2) Yr.** Mr. Lee and Staff
A consideration of the factors which may influence public education in the postwar years and the development of plans and programs based on the findings. Open to superintendents of schools, principals, other administrative officers, and qualified graduate students.
246. **Administration of Elementary Education. (2) II.** Mr. Waddell
- 250A. **History of Education. Seminar. (2) I.** Mr. Wooten
- *251A-251B. **Supervision of Instruction and Curriculum. Seminar. (2-2) Yr.** Mr. Waddell
- 253B. **Early Childhood Education. Seminar. (2) II.** Miss McLaughlin
254. **Experimental Education. Seminar. (2) I.** Mr. Williams

* Course 242B to be given spring term; 242A not to be given either term.

* Course 251B to be given spring term; 251A to be given summer term.

§ A thesis is required of all candidates for the degree of Master of Arts with major in education.

- 260A. Educational Psychology. Seminar. (2) I. Miss Seagoe
Prerequisite: course 110 or Psychology 110, and course 114 or 119.
- 262A. The Elementary School Curriculum. Seminar. (2) I. Mr. Hockett
- 270A. Secondary Education. Seminar. (2) II. Mr. Smith
- 292B. Research in Educational Administration. (1 to 4) I. Mr. Morrisett
Prerequisite: teaching experience in elementary or secondary schools.
- 298A-298B. Research in Education. (2 to 6; 2 to 6) Yr. The Staff

COURSES PREPARATORY TO SUPERVISED TEACHING

330. Introduction to Elementary Teaching. (4) I. Miss Seeds
Prerequisite: courses 110, 111, and a C average or better in all work taken in the University of California. This course precedes by one term all teaching in kindergarten-primary and general elementary grades.
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.
370. Introduction to Secondary Teaching. (3) I, II. Mr. Bond
Prerequisite: regular graduate status; courses 170 and one of: 101A, 101B, 102, 106, 112, 140, 180, or Psychology 110.
An intensive study of teaching and learning in the secondary school. This course is prerequisite to courses 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) Fairburn Avenue Elementary School; (4) University High School and Emerson Junior High School of Los Angeles City; (5) other high schools of Los Angeles and Santa Monica, as requirements demand.

The work is organized and administered by the directors of training and a corps of supervisors and training teachers, chosen in every case by the University authorities.

All candidates for supervised teaching must secure the approval of a university physician prior to assignment. Formal application for assignment must be made at the office of the Director of Training about the middle of the term preceding that in which such teaching is to be done. For the last dates of application without late fee, see the Calendar, page 4.

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.

† Limited offerings in supervised teaching have been arranged for the summer term, to begin at the opening of the public schools, September 11. Applications for assignments must be made on or before June 30 in Education Building 229.

*For Permit to Serve in Child-care Centers***N334. Supervised Care of Preschool Children. (2 to 4) I.**

Required of candidates for permit to serve in child-care centers; does not meet the requirement in supervised teaching for kindergarten-primary or general elementary credentials.

Observation of and participation in the supervision and care of children two to five years of age.

*For Kindergarten-Primary, General Elementary and General
Junior High School Credentials*

K335A-K335B. Supervised Teaching: Kindergarten-Primary. (4-4) I.

Prerequisite: senior standing, and course 330. Required of all candidates for the kindergarten-primary credential.

K336. Supervised Teaching: Kindergarten-Primary. (1 to 4) I.

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.

Prerequisite: senior standing, and course 330. Required of all candidates for the general elementary credential.

E336. Supervised Teaching: General Elementary. (1 to 4) I.

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.

Prerequisite: course E335A-E335B, or a minimum of 6 units of teaching in a special field.

*For Special Secondary Credentials***A375 (3 or 4) and A376 (1 to 4). Supervised Teaching: Art. I.**

Prerequisite: senior standing, course 170, Art 370A-370B. A total of 6 units required of all candidates for the special secondary credential in art.

B375 (3 or 4) and B376 (1 to 4). Supervised Teaching: Business Education. I.

Prerequisite: senior standing, course 170, Business Administration 370A-370B. A total of 6 units required of all candidates for the special secondary credential in business education.

H375 (3 or 4) and H376 (1 to 4). Supervised Teaching: Home Economics. I.

Prerequisite: senior standing, course 170, Home Economics 370. A total of 6 units required of all candidates for the special secondary credential in homemaking.

MA375 (3 or 4) and MA376 (1 to 4). Supervised Teaching: Mechanic Arts. I.

Prerequisite: senior standing, course 170, Mechanic Arts 370. A total of 6 units required of all candidates for the special secondary credential in industrial arts education.

M375 (3 or 4) and M376 (1 to 4). Supervised Teaching: Music. I.

Prerequisite: senior standing, course 170, Music 370A-370B. A total of 6 units required of all candidates for the special secondary credential in music.

P375 (3 or 4) and P376 (1 to 4). Supervised Teaching: Physical Education. I.
 Prerequisite: senior standing, course 170, Physical Education for Men 354 and 355A-355B, or Physical Education for Women 321A-321B and 321C-321D. 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.

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.

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.

Prerequisite: regular graduate status, courses 279, 370, or the equivalents, and the consent of the Director of Training. Restricted to candidates for the junior college credential alone who are teaching classes in the University or in a junior college.

383. Supervised Teaching: Supplementary Teaching in Any Secondary Field (1 to 6) I.

Prerequisite: course 170.

TEACHING REQUIREMENTS FOR MORE THAN ONE CREDENTIAL

‡1. *Kindergarten-Primary and General Elementary Credentials:*

Education K335A-K335B, and E335A; or E335A-E335B, and K335A.

2. *General Elementary and General Junior High School Credentials:*

E335A-E335B, and J374 (in a minor field).

‡3. *General Elementary and Special Secondary Credentials:*

A minimum of 6 units of teaching in the special field, and E335A.

4. *General Elementary and General Secondary Credentials:*

E335A-E335B; and G377 or G378; or G377, and E335A.

‡5. *Special Secondary and General Junior High School Credentials:*

A minimum of 6 units of teaching in the special field, and J374 (in a minor field).

6. *Special Secondary and General Secondary Credentials:*

A minimum of 6 units of teaching in the special field, and G377 or G378; or G377, and a minimum of 6 units of teaching in the special field.

7. *Junior College and General Secondary Credentials:*

G379, and G377 or G378.

‡ These combinations are in greatest demand.

ENGLISH

- FREDERIC THOMAS BLANCHARD, Ph.D., Professor of English.
 LILY B. CAMPBELL, Ph.D., Professor of English.
 SIGURD BERNHARD HUSTVEDT, Ph.D., Professor of English.
 DIXON WECOTER, Ph.D., Professor of English.
 HERBERT F. ALLEN, Ph.D., Associate Professor of English, Emeritus.
 EDWARD N. HOOKER, Ph.D., Associate Professor of English.
 WESLEY LEWIS, Ph.D., Associate Professor of Public Speaking.
 ALFRED E. LONGUEIL, Ph.D., Associate Professor of English (Chairman of the Department).
 WILLIAM MATTHEWS, Ph.D., Associate Professor of English.
 FRANKLIN PRESCOTT ROLFE, Ph.D., Associate Professor of English.
 BRADFORD A. BOOTH, JR., Ph.D., Assistant Professor of English.
 LLEWELLYN MORGAN BUELL, Ph.D., Assistant Professor of English.
 MARGARET SPRAGUE CARHART, Ph.D., Assistant Professor of English.
 ♥ HUGH GILCHRIST DICK, Ph.D., Assistant Professor of English.
 CARL SAWYER DOWNES, Ph.D., Assistant Professor of English.
 MAJL EWING, Ph.D., Assistant Professor of English.
 ♥ CLAUDE JONES, Ph.D., Assistant Professor of English.
 HARRISON M. KARE, Ph.D., Assistant Professor of Public Speaking.
 HARRIET M. MACKENZIE, Ph.D., Assistant Professor of English.
 JOHN F. ROSS, Ph.D., Assistant Professor of English.
 ♥ HUGH THOMAS SWEDENBERG, Ph.D., Assistant Professor of English.
 ♥ JAMES E. PHILLIPS, JR., Ph.D., Instructor in English.
 ♥ HENRY F. THOMA, Ph.D., Instructor in English.
-
- RALPH FREUD, Lecturer in Public Speaking.
 ERNEST VAN B. JONES, Ph.D., Lecturer in English.
 JAMES MURRAY, Ed.D., Lecturer in Public Speaking.
 DANIEL VANDRAEGEN, M.A., Lecturer in Public Speaking.
 ♥ JACK S. MORRISON, A.B., Assistant in Public Speaking.

Students must have passed Subject A (either examination or course) before taking any course in English or Public Speaking. Regulations concerning Subject A will be found in the CIRCULAR OF INFORMATION.

Letters and Science List.—All undergraduate courses in English and public speaking are included in the Letters and Science List of Courses. For regulations governing this list, see the CIRCULAR OF INFORMATION.

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.

♥ On leave for duty in the armed forces.

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.—1. Students 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. The program may be amended from time to time after consultation with the department representative.

2. The program must comprise 24 units of upper division courses, including (1) English 117J, to be taken in the junior year; (2) one of the Type courses; (3) two of the Age courses; (4) English 151L, to be taken in the senior year.

3. The student must maintain an average grade of C in upper division English courses, and at the end of the senior year must pass a comprehensive final examination.

LOWER DIVISION COURSES

Freshman Course

1A-1B. First-Year Reading and Composition. (3-3) Beginning either term.
Mr. Rolfe in charge

Open to all students who have received a passing grade in Subject A.

Sophomore Courses

Course 1A-1B is prerequisite to all sophomore courses in English except course 40.

31. Intermediate Composition. (2) I, II. Mr. Ewing in charge

36A. Survey of English Literature, 1500 to 1700. (3) II.
Mr. Rolfe in charge

36B. Survey of English Literature, 1700 to 1900. (3) I, II.
Mr. Rolfe in charge

UPPER DIVISION COURSES

Courses 1A-1B and 36A-36B are prerequisite to all upper division courses in English, except 190A-190B, for which only 1A-1B 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.

A. The Junior Course: Course 117J. Required of juniors whose major or minor subject is English.

B. The Type Courses: Courses 114A-114B, 122A-122B, 125C-125D, and 125G-125H. It is understood that major students in English will take one of these courses.

C. The Age Courses: Courses 156, 157, 167, 177, and 187. It is understood that major students in English will take two of these courses.

D. General Courses: Courses 106A, 106C, 106F, 110, 111, 115, 130A-130B, 131, 132, 153, and 190A-190B.

E. The Senior Course: Course 151L. Required of seniors whose major subject is English.

- 106A. The Short Story. (2) I. Miss Carhart
- 106F. Exposition. (2) I, II. Mr. Hoeker, Mr. Rolfe
- 114A-114B. English Drama from the Beginning to the Present. (3-3) Yr. Miss Carhart, Miss Campbell
- 117J. Shakespeare. (3) I, II. Miss Campbell, Mr. Buell
- A survey of from twelve to fifteen plays, with special emphasis on one chronicle, one comedy, and one tragedy.
- 125C-125D. The English Novel from the Beginning to the Present. (3-3) Yr. Mr. Blanchard, Mr. Rolfe
- 130A-130B. American Literature. (2-2) Yr. Mr. Downes, Mr. Booth
- 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. 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.
- 151L. Chaucer. (3) I, II. Mr. Hustvedt, Mr. Matthews
153. Introduction to the Study of Poetry. (3) I, II. Miss MacKenzie, Mr. Longueil
156. The Age of Elizabeth. (3) I. Miss Campbell
167. The Age of Pope and Johnson. (3) II. Mr. Ross
177. The Romantic Age: 1784-1832. (3) II. Mr. Longueil
187. The Victorian Age: 1832-1892. (3) I. Mr. Rolfe
- 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; the drama; the essay.

COMPREHENSIVE FINAL EXAMINATION

The Comprehensive Final Examination in the undergraduate major in English must be taken at the end of the senior year. It will consist of one two-hour paper and one three-hour paper. The examination will cover English literature from the beginning to 1900. The papers will be set by the examining committee of the department. The student's preparation for this examination will presumably extend throughout the entire college course.

This examination is not counted as part of the 24-unit major but is counted on the 36-unit upper division requirement and on the 120 units required for graduation. It does not affect study-list limits, and should at no time be entered by the student upon his study list. However, the student is advised to limit his program to 18 units during his last term. Upon his passing the examination the grade assigned by the department will be recorded. Given each term; credit, 3 units.

GRADUATE COURSES

†211A. Old English. (3) I.	Mr. Matthews
†211B. Beowulf. (3) II.	Mr. Matthews
†230B. American Literature from 1850. (3) I.	Mr. Wecter
†235B. The English Novel: 1750-1800. (3) II.	Mr. Blanchard
†239. Milton. (3) I.	Mr. Hustvedt
290. Special Problems. (1 to 6) I, II.	The Staff

PROFESSIONAL COURSE IN METHOD

370. The Teaching of English. (3) I.	Mrs. MacKenzie
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May be counted as part of the 18 units in education required for the secondary credential. Required of candidates for the General Secondary Credential in English.

PUBLIC SPEAKING§

LOWER DIVISION COURSES

1A-1B. Elements of Public Speaking. (3-3) Beginning each term.	Mr. Lewis in charge
2A-2B. The Fundamentals of Expression and Interpretation. (3-3) Beginning each term.	Mr. Freud in charge

UPPER DIVISION COURSES

110A. Third-Year Public Speaking. (3) I.	Mr. Lewis
Prerequisite: course 5A-5B.	
Oral argumentation and debate; preparation of briefs; presentation of arguments.	
110B. Third-Year Public Speaking. (3) II.	Mr. Lewis
Prerequisite: course 110A and the consent of the instructor.	
Practice in extemporaneous speaking; preparation of the occasional address.	
122. Diction and Voice. (3) I, II.	Mr. Karr
Prerequisite: courses 1A and 2A or the equivalent.	
155A-155B. Play Production. (3-3) Yr.	Mr. Freud
156. Play Directing. (3) I, II.	Mr. Freud
Study and practice in the direction of plays and group activities of a dramatic nature.	
159A-159B. Participation in Theatrical Production. (1-1) Yr.	Mr. Freud
190A. Forensics. (1) II.	Mr. Lewis
Prerequisite: the consent of the instructor.	
190B. Forensics. (1) I.	Mr. Lewis

† To be given if a sufficient number of students enroll.

§ The University of California at Los Angeles does not offer a major in public speaking. Students wishing to satisfy the requirement for a major in public speaking are referred to the CIRCULAR OF INFORMATION, DEPARTMENTS AT BERKELEY.

FOREIGN LANGUAGE GROUP

GUSTAVE OTTO ABLT, Ph.D., Professor of German (Chairman of the Group).

This group is composed of the departments of Classics, French, Germanic Languages, and Spanish and Italian, and has been organized for the purpose of unifying and coördinating the activities in these fields. Although no attempt is made to curtail the free development of each department, the special committee in charge of the Foreign Language Group endeavors to articulate, for their mutual benefit, the courses and research work of the four departments concerned.

ROMANCE LANGUAGES AND LITERATURES

GRADUATE COURSE

201B. Historical Grammar and Methodology of Romantic Linguistics.

(2) II.

Mr. Nitze

A knowledge of Latin is indispensable.

FRENCH

WILLIAM A. NITZE, Ph.D., L.H.D., Professor of French.

PAUL PÉRIGORD, Ph.D., Professor of French Civilization.

✓ MYRON IRVING BARKER, Ph.D., Associate Professor of French.

✓ FRANCIS J. CROWLEY, Ph.D., Associate Professor of French.

ALEXANDER GREEN FITE, Ph.D., Associate Professor of French.

CLINTON C. HUMISTON, Ph.D., Associate Professor of French (Chairman of the Department).

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.

✓ HORACE S. CRAIG, Ph.D., Instructor in French.

PAUL BONNET, Lic. ès Lettres, Associate in French.

ALICE HUBARD, M.A., Associate in French.

MADELEINE LETESSIER, A.B., Associate in French.

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 the CIRCULAR OF INFORMATION.

Preparation for the Major.—French 1, 2, 3, 4, 42A–42B, or their equivalents. Two years of high school Latin, or Latin A and B, or the equivalent, must be completed before the beginning of the senior year. History 4A–4B, Philosophy 8A–8B, and a modern language are strongly recommended.

The Major.—Required: 24 units of upper division French, including courses 101A–101B, 109A–109B, 112A–112B.

Any of the remaining upper division courses except 109M–109N may be applied on the major. With the permission of the department 4 units of the 24 may be satisfied by appropriate upper division courses in English, German, Greek, Latin, Spanish, Italian, or Philosophy.

Students with majors in French will also be required to take a comprehensive examination covering history, geography, literature, and other general information concerning France. Two units credit toward the major will be given for satisfactory record in this examination which will be given on the second Friday in June and on the second Friday in October.

LOWER DIVISION COURSES

The ordinary prerequisites for each of the lower division courses are listed under the description of these courses. Students who have had special advantages in preparation may, upon examination, be permitted a more advanced program; or, such students may be transferred to a more advanced course by recommendation of the instructor.

1. Elementary French. (4) I, II.

Miss Letessier in charge

2. Elementary French. (4) I, II.

Miss Letessier in charge

Prerequisite: course 1 or two years of high school French.

✓ On leave for duty in the armed forces.

- 3. Intermediate French. (4) I, II.** Mr. Bonnet in charge
Prerequisite: course 2 or three years of high school French.
- 4. Intermediate French. (4) I, II.** Mr. Bonnet in charge
Prerequisite: course 3 or four years of high school French.
- 8A-8B-8C-8D. French Conversation. (1 unit each term) 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.
- 25A-25B. Advanced French. (3-3) Yr.** Mr. Miller
Prerequisite: course 4.
- 42A-42B. French Civilization. (2-2) Yr.** Mr. Périgord
Presentation of the larger cultural elements in European history as caused, influenced, diffused, or interpreted by the French people. Lectures in English, reading in French or English.

UPPER DIVISION COURSES

The prerequisite to all upper division courses except 109M and 109N is 16 units in the lower division, including course 4 with a grade A or B, or 25A-25B (or 25).

Courses 101A-101B, 109A and 109B are ordinarily prerequisite to other upper division courses.

All upper division courses, with the exception of 109M and 109N, are conducted mainly in French.

- 101A-101B. Composition, Oral and Written. (3-3) Beginning each term.**
Mr. Biencourt, Mr. Miller

- 109A. Survey of French Literature and Culture. (3) I.** Mr. Miller
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. Miller
Prerequisite: course 109A.
The eighteenth, nineteenth, and twentieth centuries.

- 109M. A Survey of French Literature and Culture. (3) I.** Mr. Humiston
Given in English; does not count on the major in French nor on the general major. 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. The Nineteenth Century. (2) I.** Mr. Périgord
Prerequisite: courses 101A-101B, 109A, and 109B.
From 1789 to 1830.

112B. The Nineteenth Century. (2) II.

Mr. Périgord

Prerequisite: course 112A.

From 1830 to 1885.

118A-118B. The Sixteenth Century. (2-2) Yr.

Mr. Humiston

120B. The Seventeenth Century. (2) I.

Mr. Nitze

130A-130B. Grammar, Composition, and Style. (3-3) Yr.

Mr. Fite

Prerequisite: an average grade higher than C in French courses. This course is required of all candidates for the certificate of completion of the teacher-training curriculum, or for the degree of Master of Arts.

Practice in oral and written composition based on selected models.

199A-199B. Special Studies in French. (2-2) Yr.

Mr. Périgord, Mr. Biencourt

Prerequisite: senior standing and at least 12 units of upper division French.

GRADUATE COURSES

206B. Reading and Interpretation of Old French Texts. (2) I. Mr. Nitze**†214A-214B. French Versification. (2-2) Yr.**

Mr. Biencourt

†257A-257B. Seminar in the French Renaissance. (2-2) Yr. Mr. Humiston**290. Research in French. (1 to 6) I, II.**

The Staff

†298A-298B. Special Studies in Literary Criticism. (2-2) Yr.

Mr. Fite

PROFESSIONAL COURSE IN METHOD

†370. The Teaching of French. (3).

Mr. Nitze

Prerequisite: courses 101A-101B and 109A-109B, the latter being permitted concurrently.

† To be given if a sufficient number of students enroll.

GEOGRAPHY

*GEORGE MCCUTCHEN MCBRIDE, Ph.D., Professor of Geography.

ROBERT M. GLENDINNING, Ph.D., Associate Professor of Geography.

CLIFFORD M. ZIERER, Ph.D., Associate Professor of Geography (Chairman of the Department).

RUTH EMILY BAUGH, Ph.D., Assistant Professor of Geography.

ARTHUR WILLIAM CARTHEW, M.A., Assistant Professor of Geography.

MYRTA LISLE MCCLELLAN, B.S., Assistant Professor of Geography, Emeritus.

♥JOSEPH E. SPENCER, Ph.D., Assistant Professor of 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 the CIRCULAR OF INFORMATION.

Preparation for the Major.—Required: Geography 1A-1B, 3, and 5B; Geology 5 or its equivalent; English 1A. Recommended: Anthropology 1A-1B, Botany 1A, 36, Economics 1A-1B, Geology 3, one year of history, Physics 1A-1B, Political Science 3A-3B, and at least one modern foreign language, preferably French or German.

The Major.—The minimum requirement is 24 units of upper division work in geography, including courses 101, 105, 113, 115, and two of the following: 121, 122A, 122B, 123A, 123B, 124A, 124B, 125, 131, plus two courses selected from the following list: 108, 111, 117, 155, 171A, 171B, 173, 181. A list of courses from other departments recommended for geography majors may be secured from the department.

LOWER DIVISION COURSES

1A. Elements of Geography. (3) I, II. Mr. Glendinning, Mr. Carthew

Students who have had courses 5A-5B or 100 will receive only half credit for course 1A.

A study of the elements of geography, especially the basic elements (climate, land forms, soils, etc.), followed by a short introduction to regional geography.

1B. Elements of Geography. (3) I, II. Mr. Glendinning, Mr. Carthew

Prerequisite: course 1A or the equivalent. Students who have had courses 5A-5B or 100 will receive only half credit for course 1B.

A study of the world's major geographic regions.

3. Introduction to Climate and Weather. (3) I, II. Mr. Carthew

A survey of the earth's atmospheric phenomena, with special reference to the causes and regional distribution of climate and weather.

5A. Economic Geography. (3) I, II. Mr. Carthew

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 1B will receive only 1½ units of credit for course 5A.

A study of those elements of the natural environment essential to the geographic interpretation of economic activities.

* Absent on leave to June 30, 1944.

♥ On leave for duty in the armed forces.

5B. Economic Geography. (3) I, II.**Mr. Carthew**

Prerequisite: course 5A or 1A-1B.

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.****Miss Baugh**

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 factors of physical environment as they affect life on the earth and the activities of man.

108. The Geographic Basis of Human Society. (3) II.**Miss Baugh**

Prerequisite: course 1A-1B, or 5A-5B, or 100.

The geographic element in the evolution of primitive cultures and of advanced civilizations. A study of various types of physical habitat in relation to social organization and institutions, together with the corresponding human culture.

111. The Conservation of Natural Resources. (3) I.**Mr. Zierer**

Prerequisite: the consent of the instructor.

The general principles of conservation and their application, especially to the United States.

***113. General Climatology. (3) II.**

Prerequisite: course 1A-1B or 5A-5B, or 100; 3 is especially desirable. 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.**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 land forms, soils, drainage, and natural vegetation.

121. The Geography of Anglo-America. (3) I, II.**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 Latin America. (3) II.*Mr. McBride**

Prerequisite: course 1A-1B or 5A-5B, or 100.

A study of the physical conditions characterizing the countries of South America, particularly in relation to the life of the inhabitants.

* May not be offered, spring or summer, 1944.

- 122B. *The Geography of Latin America.* (3) II. Mr. McBride
 Prerequisite: course 1A-1B or 5A-5B, or 100.
 A study of the physical conditions characterizing Mexico, Central America, and the West Indies, particularly in relation to the life of the inhabitants.
- 123B. *The Geography of Europe.* (3) II. Miss Baugh
 Prerequisite: course 1A-1B or 5A-5B, or 100.
 A study of geographic conditions and their relation to economic, social, and political problems in eastern and southern Europe.
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) I. 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.
- 181. *Current Problems in Political Geography.* (3) II. Mr. McBride
 Prerequisite: the consent of the instructor.
 Consideration of the geographical basis of selected problems in domestic and international affairs, with stress upon the geographic principles involved.
199. *Problems in Geography.* (3) I, II. Miss Baugh, Mr. Zierer
 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.
275. *Advanced Field Problems in Local Geography.* (3) I, II. Mr. Glendinning, Mr. Zierer
290. *Research in Geography.* (3 or 6) I, II. The Staff

* May not be offered, spring or summer, 1944.

GEOLOGY

✧ JAMES GILLULY, Ph.D., Professor of Geology.

U. S. GRANT, Ph.D., Professor of Geology (Chairman of the Department).

WILLIAM JOHN MILLER, Ph.D., Sc.D., Professor of Geology.

✧ M. N. BRAMLETTE, Ph.D., Associate Professor of Geology.

JOSEPH MURDOCH, Ph.D., Associate Professor of Geology.

EDGAR K. SOPER, Ph.D., Associate Professor of Geology.

✧ CORDELL DURRELL, Ph.D., Assistant Professor of Geology.

✧ WILLIAM C. PUTNAM, Ph.D., Assistant Professor of Geology.

ROBERT W. WEBB, Ph.D., Assistant Professor of Geology.

Preparation for the Major.—Geology 5, 3; Mineralogy 3A-3B; Chemistry 1A-1B; Physics 2A-2B; Mechanical Engineering D or equivalent; Mathematics 8, and OF or 3A; Civil Engineering 1LA-1LB, 1FA-1FB (geology section). Recommended: English 1A-1B; a reading knowledge of German and French is essential for advanced work. Certain lower division requirements may be postponed to the upper division by permission of the department.

The Major.—A minimum of 25 units of upper division courses, including Geology 102A-102B, 103, 107, 116, and 118 or 199 (4 units); Paleontology 111A-111B. Mathematics 3A-3B is also required. The department will certify to the completion of a major program for graduation only on the basis of at least C grades in Geology 102B and 103.

Students whose major interests lie in the fields of mineralogy, petrology, petrography, economic geology, petroleum geology, stratigraphic geology, or geomorphology and who expect to continue work for the master's degree should complete also Mathematics 4A in their undergraduate program, since this is required for the higher degree. Mathematics 4B (or 109), 119, Physics 105, and Chemistry 109A-109B, 120 are also recommended for students in the fields named above.

Students whose major interests lie in the fields of paleontology or historical geology and who expect to continue work for the master's degree should complete Zoölogy 1, 2, and 112 in their undergraduate program since these are required for the higher degree. Zoölogy 104 is also recommended for such students.

Oral and written proof of ability to use the English language adequately and correctly must be furnished to the department. Each program for a major is to be made out in accordance with some definite plan approved by the department.

Laboratory Fees.—Geology 118, \$35; Mineralogy 3A, 3B, \$2.50.

GEOLOGY

LOWER DIVISION COURSES

2. General Geology: Physiographic. (3) I, II.

Mr. Miller, Mr. Grant, Mr. Soper, Mr. Murdoch, Mr. Webb

Not open to students who have taken or are taking course 5.

An elementary course dealing with the earth's surface features and the geological laws governing their origin and development.

✧ On leave for civilian war work.

***2L. General Geology: Laboratory.** (1) I, II. Mr. Murdoch, Mr. Webb

Prerequisite: course 2 (may not be taken concurrently). Open only to students who have completed course 2 or 1A offered in previous years and who need credit for course 5 or its equivalent; the consent of the instructor is required.

Laboratory practice in physical geology.

3. General Geology: Historical. (3) I, II. Mr. Miller, Mr. Webb

Prerequisite: course 2 or 5.

A study of the geological history of the earth and its inhabitants, with special reference to North America.

****5. General Geology: Dynamical and Structural.** (4) I, II.

Mr. Murdoch, Mr. Webb

Lectures, three hours; laboratory, three hours. Prerequisite: elementary chemistry. Not open to students who have taken or are taking course 2 or who have credit for course 1A.

A study of the materials and structures of the earth and the processes and agencies by which the earth has been and is being changed.

†25. Interpretation of Airplane Photographs and Maps. (1) I, II.

Prerequisite: the consent of the instructor.

Mr. Grant

Interpretation of various types of topographic maps and airplane photographs with practical applications in the field.

UPPER DIVISION COURSES

102B. Field Geology. (3) I. Saturdays. Mr. Soper

Prerequisite: courses 102A, 103 (with a grade C or higher).

A continuation of course 102A.

†106. Economic Geology: Metalliferous Deposits. (3) I. Mr. Soper

Prerequisite: courses 3 and 103.

A systematic study of ore occurrences, and of the genetic processes and structural factors involved.

†108. General Economic Geology. (3) I. Mr. Soper

Prerequisite: course 3.

Geologic occurrence and geographic distribution of the important minerals; special attention is given to strategic war minerals.

†111. Petroleum Geology. (3) I. Mr. Soper

Lectures, map work, problems, and field trips to nearby oil fields. Prerequisite: courses 102A, 116.

Geology applied to exploration for petroleum; the geology of the principal oil fields of the world with emphasis upon United States fields; and field methods in oil explorations.

* To be given, spring term, 1944; summer term, 1944, only if course 5 is given.

** To be given, spring term, 1944; summer term, 1944, only if a sufficient number of students enroll.

† To be given if a sufficient number of students enroll.

116. Structural Geology. (3) I.**Mr. Soper**

Lectures, two hours; laboratory, three hours. Prerequisite: courses 102A and 103. A working knowledge of descriptive geometry is desirable.

The phenomena of fracture, folding, flow, and the graphic solution of problems.

199. Problems in Geology. (1 to 4) I, II.**The Staff**

Open only to seniors who are making geology their major study. Reports and discussions.

GRADUATE COURSES**†237. Paleontology and Stratigraphy of California. (3) I.****Mr. Grant****†263. Seminar in Economic Geology. (3) I.****Mr. Soper****299. Research in Geology. (1 to 6) I, II.****The Staff****MINERALOGY****LOWER DIVISION COURSE****3B. Introduction to Mineralogy. (3) I.****Mr. Murdoch**

Lecture, one hour; laboratory, six hours. Prerequisite: Mineralogy 3A. Fee, \$2.50 a term.

Crystal morphology and projection, determination of minerals by their physical and chemical properties, and descriptive mineralogy.

PALEONTOLOGY**UPPER DIVISION COURSE****111B. Systematic Paleontology. (3) I.****Mr. Grant**

Lectures, two hours; laboratory, three hours. Prerequisite: Geology 3 or Paleontology I.

A general introduction to the study of invertebrate fossils.

† To be given if a sufficient number of students enroll.

GERMANIC LANGUAGES

GUSTAVE OTTO ARLT, Ph.D., Professor of German (Chairman of the Department).

ALFRED KARL DOLCH, Ph.D., Associate Professor of German.

FRANK HERMAN REINSCH, Ph.D., Associate Professor of German.

WAYLAND D. HAND, Ph.D., Assistant Professor of German.

WILLIAM J. MULLOY, Ph.D., Assistant Professor of German.

✓VERN W. ROBINSON, Ph.D., Assistant Professor of German.

ERIK WAHLGREN, Ph.D., Assistant Professor of German and Scandinavian.

CARL W. HAGGE, M.A., Associate in German.

CHRISTEL B. SCHOMAKER, 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 the CIRCULAR OF INFORMATION.

Preparation for the Major.—Required: courses 1, 2, 3, 4, 6, and 7 or their equivalents. Recommended: History 4A-4B, English 1A-1B, Philosophy 20 and 21.

The Major in German.—Twenty-four units in upper division courses, of which 10 units must be in junior courses, including 106A, 106B, and either 109A or 109B; the balance must be made up from senior courses, including 117, 118A, and 118B. 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. A comprehensive final examination is required at the end of the senior year.

¶*The Comprehensive Final Examination.*—The comprehensive final examination in the undergraduate major in German must be taken at the end of the senior year. This examination will cover German literature from the beginnings to the present and will be divided into two sections of three hours each. In order to insure adequate preparation a program of tutorial aid is offered the student. A reading list is provided for which the student will be held responsible. Through conferences with individual candidates the staff of the department will provide assistance in the interpretation of works read outside of courses.

This examination is not counted as part of the 24-unit major but is counted on the 36-unit upper division requirement and on the 120 units required for graduation, and the grade assigned by the department will be recorded for the student. The examination is given each term and carries 3 units of credit.

GERMAN

LOWER DIVISION COURSES

The ordinary prerequisites for each of the lower division courses are listed under the description of these courses. Students who have had special advantages in preparation may, upon examination, be permitted a more advanced program; or such students may be transferred to a more advanced course by recommendation of the instructor.

✓ On leave for duty in the armed forces.

¶ During the present period of emergency the comprehensive final examination will not be required, but is optional with the student.

- 1. Elementary German. (4) I, II.** Mr. Hagge in charge
This course corresponds to the first two years of high school German.
- 2. Elementary German. (4) I, II.** Mr. Hagge in charge
Prerequisite: course 1, or courses 1A and 1B, or two years of high school German.
- 3. Intermediate German. (4) I, II.** Mr. Mulloy in charge
Prerequisite: course 2 or three years of high school German.
Readings in literary German.
- 3L. Intermediate German. (4) I.** Mr. Hand
Prerequisite: course 2 or three years of high school German.
Readings in the biological sciences.
- 3M. Intermediate German. (4) II.** Mr. Hand
Prerequisite: course 2 or three years of high school German.
Readings in military and aeronautical German.
- 3P. Intermediate German. (4) I.** Mr. Hagge
Prerequisite: course 2 or three years of high school German.
Readings in the physical sciences.
- 3S. Intermediate German. (4) II.** Mr. Mulloy
Prerequisite: course 2 or three years of high school German.
Readings in the social sciences.
- 4. Intermediate German. (4) I, II.** Mr. Mulloy in charge
Prerequisite: Any one of courses 3, 3L, 3M, 3P, or 3S, or four years of high school German.
Advanced readings in literary German.
- 6. Review of Grammar, Composition, and Conversation. (2) II.** Mr. Hand
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 term.**
The class meets two hours weekly. Mr. Schomaker in charge
Open to students who have completed course 2 or its equivalent with grade of A or B.

UPPER DIVISION COURSES

The prerequisite for all upper division courses is course 4 or the equivalent. Major students are also required to take courses 6 and 7.

- 104B. Drama of the Nineteenth Century. (3) II.** Mr. Hand
Selected readings.
- 105. Lessing's Life and Works. (3) II.** Mr. Hagge
Lectures and reading of selected texts.
- 106A-106B. Grammar, Composition, and Conversation. (2-2) Yr.** Mr. Schomaker
- 106C-106D. Grammar, Composition, and Conversation. (2-2) Yr.**
Prerequisite: course 106A-106B. Mr. Schomaker

108. **Schiller's Life and Works.** (3) I. Mr. Hagge
Lectures and reading of selected texts.
- 109B. **Introduction to Goethe.** (3) I. Mr. Reinsch
Goethe's *Faust*, Parts I and II.
110. **The German Lyric and Ballad.** (3) II. Mr. Mulloy
Prerequisite: 6 units of upper division German.
A survey from 1750 to the present.
111. **The German Novelle.** (3) I. Mr. Mulloy
Prerequisite: 6 units of upper division German.
- 118A. **History of German Literature.** (3) I. Mr. Arlt
Prerequisite: 6 units of upper division German.
The Middle Ages.
- 118B. **History of German Literature.** (3) II. Mr. Arlt
Prerequisite: 6 units of upper division German.
From the Reformation to 1850.
119. **Middle High German.** (3) I. Mr. Hagge
Prerequisite: courses 117 and 118A.
Outline of grammar, selections from the *Nibelungenlied*, *Kudrun*, and the Court Epics.
- 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
- †208. **German Literature from Opitz to Bodmer: 1624-1740.** (2) II.
Mr. Arlt
- 210A-210B. **The Age of Goethe.** (2-2) Yr. Mr. Reinsch
- †212A. **The Age of Romanticism.** (2) II. Mr. Mulloy
253. **Seminar on the Age of Romanticism.** (2) I. Mr. Mulloy
- 298A-298B. **Special Studies.** (1-3; 1-3) Yr. The Staff

PROFESSIONAL COURSE IN METHOD

- †370. **The Teaching of German.** (3) II. Mr. Reinsch
Prerequisite: graduate standing in the Department of Germanic Languages. Required of all candidates for the general secondary credential in German. To be taken concurrently with Education 370.

SCANDINAVIAN LANGUAGES*

† To be given if a sufficient number of students enroll.

* Not to be offered, spring or summer term, 1944.

HISTORY

- FRANK J. KLINGBERG, Ph.D., Professor of History.
 LOUIS KNOTT KOONTZ, Ph.D., Professor of History.
 ♣ ANDRÉ LOBANOV-BOSTOVSKY, Professor of History.
 JOSEPH B. LOCKEY, Ph.D., Professor of History.
 WALDEMAR WESTERGAARD, Ph.D., Professor of History.
 DAVID K. BJORK, Ph.D., Associate Professor of History (Chairman of the Department).
 JOHN W. CAUGHEY, Ph.D., Associate Professor of History.
 BRAINERD DYER, Ph.D., Associate Professor of History.
 CLINTON N. HOWARD, Ph.D., Associate Professor of History.
 ROLAND D. HUSSEY, Ph.D., Associate Professor of History.
 JOHN W. OLMSTED, M.A. (Oxon.), Associate Professor of History.
 ♣ RICHARD O. CUMMINGS, Ph.D., Assistant Professor of History.
 CHARLES L. MOWAT, Ph.D., Assistant Professor of History.
 LUCY M. GAINES, M.A., Assistant Professor of History, Emeritus.
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- YU-SHAN HAN, Ph.D., Lecturer in History.

Letters and Science List.—All undergraduate courses in history are included in the Letters and Science List of Courses. For regulations governing this list, see the CIRCULAR OF INFORMATION.

Preparation for the Major.—Required: (1) courses 4A-4B or 5A-5B, and (2) course 7A-7B or 8A-8B, or equivalent preparation for students transferring from other departments or other institutions. History majors who do not take course 7A-7B must take three units of United States history in the upper division.

The Major.—Twenty-four units of upper division work in history. The major must include a year sequence in European history and a year sequence in American history. A year sequence in European history may be composed as follows: courses 111A-111B, or 121A-121B, or 131A-131B, or 142 and 143, or 143 and 144, or 144 and 145, or 152A-152B, or 153A-153B, or 154 and 155. A year sequence in American history may be composed as follows: courses 162A-162B, or 171 and 172, or 172 and 173, or 173 and 174, or 178 and 181, or 181 and 188. The major must also include course 199A-199B in a field for which preparation has been made in the junior year. This course must be taken in proper sequence on the advice of the departmental adviser.

LOWER DIVISION COURSES

4A-4B. History of Europe. (3-3) Yr.

Mr. Westergaard

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.

Mr. Klingberg, Mr. Howard, Mr. Mowat

The political, economic, and cultural development of the British Isles and the Empire from the earliest times to the present.

♣ On leave for civilian war work to June 30, 1944.

7A-7B. Political and Social History of the United States. (3-3) Yr.

Mr. Koontz, Mr. Dyer

This course satisfies the requirement in American Institutions.

8A-8B. History of the Americas. (3-3) Yr.

Mr. Lockey

A survey of the history of the Western Hemisphere.

46. Economic History of the United States. (3) II.

Mr. Cummings

Primarily for sophomores but open to other students.

UPPER DIVISION COURSES

The prerequisite for all upper division courses is course 4A-4B, or 5A-5B, or 7A-7B, or 8A-8B, or other preparation satisfactory to the instructor.

111A. Greek History to the Roman Conquest. (3) II.

Mr. Howard

111B. Roman History to the Accession of Augustus. (3) I.

Mr. Howard

121A. The Early Middle Ages. (3) I.

Mr. Bjork

Prerequisite: course 4A-4B or 5A-5B, or the consent of the instructor.

A survey of the main events of European history from the fall of the Roman Empire to about 1050 A.D.

121B. The Civilization of the Later Middle Ages. (3) II.

Mr. Bjork

Prerequisite: course 4A-4B or 5A-5B, or the consent of the instructor.

A survey of European history, 1050-1450, with emphasis upon social, cultural, religious, and economic foundations of western Europe.

142. Europe in the Seventeenth and Eighteenth Centuries. (3) I.

Mr. Olmsted

European society, politics, and international relations from the Thirty Years War and Louis XIV to the Enlightened Despots and the Seven Years War.

143. Enlightened Despotism, the French Revolution, and Napoleon. (3) II.

Mr. Olmsted

A study of the culture of the Enlightenment and of European politics and international relations from the Seven Years War to the fall of Napoleon.

145. Europe from the Congress of Paris to the Peace Conference of Versailles. (3) II.

Mr. Lobanov

The history of Europe with special stress on the unification of Germany and Italy, the causes of the World War, and the World War itself.

146B. History of Slavic Europe and the Balkans. (3) II.

Mr. Lobanov

The history of Russia, Poland, Serbia, Bulgaria, Rumania, and Greece from the Napoleonic period to the present treated in the light of internal conditions and European diplomacy.

†147. History of Wars in Europe. (2) II.

Mr. Lobanov

153A-153B. History of the British People in Modern Times. (3-3) Yr.

Mr. Klingberg, Mr. Mowat, Mr. Howard

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.

† To be given if a sufficient number of students enroll.

***162A-162B. Hispanic America from the Discovery to the Present. (3-3) Yr.**
Mr. Hussey

172. The United States: The New Nation. (3) II. Mr. Koontz, Mr. Dyer

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.

174. The United States: the Twentieth Century. (3) I, II.

Mr. Dyer, Mr. Cummings

A general survey of political, economic, and cultural aspects of American democracy in recent years.

181. The Westward Movement and the West. (3) I.

Mr. Koontz, 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.

191A. History of the Far East. (3) I.

Mr. Han

China and Japan from the earliest times to the beginning of western civilization.

191B. History of the Far East. (3) II.

Mr. Han

Transformation of the Far East in modern times under the impact of western civilization.

196. Early India and the Indies. (3) I.

Mr. Han

India from the Vedic period to the decline of the Mogul Empire; colonial rivalries of the European powers in the Indian Ocean area; establishment of the Dutch empire in the East Indies.

197. History of British India. (3) II.

Mr. Han

History of the British Empire in India, Burma, and Malaya.

†198. Conferences and Reading for Honors. (2) I, II.

The Staff

Primarily for qualified history majors who intend to take the optional examination for honors in history given each May. Whenever possible students should enroll at the beginning of the junior year. May be taken four times for credit.

199A-199B. Special Studies in History. (3-3) Yr. Beginning either term.

Required of all history majors. This course is usually taken in the senior year but students should arrange their programs so as to take it in the correct sequence, if necessary by beginning it in the second term of the junior year.

Section 2. Medieval History. II.

Mr. Bjork

†Section 3. European History. I, II.

Mr. Westergaard

* Course 162A to be given, summer term; 162B, spring term.

† To be given if a sufficient number of students enroll.

- Section 5. English History. I, II. Mr. Klingberg, Mr. Howard
 Section 6. American Colonial History. I, II. Mr. Koontz, Mr. Caughey
 †Section 7. The American Revolution. II. Mr. Mowat
 Section 9. Hispanic-American History. I, II. Mr. Lockey, Mr. Hussey

GRADUATE COURSES

- 254A-254B. Seminar in Medieval History. (3-3) Yr. Beginning either term.
 Mr. Bjork
- 257A-257B. Seminar in European History. (3-3) Yr. Beginning either term.
 Mr. Westergaard
- Studies in continental European history prior to 1914.
- 261A-261B. Seminar in English History. (3-3) Yr. Beginning either term.
 Studies of England in the nineteenth century. Mr. Klingberg
- 265A-265B. Seminar in Hispanic-American History. (3-3) Yr. Beginning
 either term. Mr. Lockey
- Studies in the colonial and early national periods.
- 269A-269B. Seminar in United States History. (3-3) Yr. Beginning either
 term. Mr. Koontz, Mr. Dyer
- Studies in the colonial frontier.
- 272A-272B. Seminar in United States History. (3-3) Beginning either term.
 Mr. Koontz, Mr. Dyer
290. Research in History. (1 to 6) I, II. The Staff

† To be given if a sufficient number of students enroll.

HOME ECONOMICS

- 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 (Chairman of the Department).
 MARGUERITE G. MALLON, Ph.D., Assistant Professor of Home Economics.
 GLADYS TIMSON STEVENSON, Ph.D., Assistant Professor of Home Economics.
 PATRICIA L. HUNGERLAND, M.A., Associate in Home Economics.
 FLORENCE A. WILSON, M.A., Associate in Home Economics.

- LUCILE WAITE LEVY, Ed.B., Lecturer in Home Economics.
 ETHEL M. MARTIN, Ed.B., Lecturer in Home Economics.
 WENDY STEWART, LL.B., M.D., Lecturer in Home Economics.

College of Applied Arts

The Department of Home Economics offers six majors:

- A. The General Major in Home Economics, for students working toward the general elementary teaching credential, or for those who wish home economics as a background for homemaking.

Preparation for the Major.—Courses 1A-1B, 11A-11B; Art 21A, 42; Chemistry 2A, 10; Zoölogy 13.

The Major.—Courses 108, 118, 120, 143, 162A-162B, 168; 8 or 9 units selected from courses 125, 150, 164A-164B, 170, 175, 176; and 11 or 12 units selected from the courses listed in one of the following groups: Group I, Art 101A-101B, 132A-132B, 139A-139B, 156A-156B, 168A, 173, 180, 183A-183B; Group II, Psychology 107A-107B, 110, 112, 135, 137A-137B, 145A-145B; Group III, Physical Education for Women 104A-104B, 114A-114B, 120, 133, 135, 192A-192B (or 193); Group IV, Zoölogy 101, 104, 105, 106, 112, 113, 113C, 115, 115C; Group V, Economics 100A, 100B, 106, 107, 150, Geography 100, 108, 113.

- B. The Major for Prospective Home Economics Teachers.

Preparation for the Major.—Courses 1A-1B, 11A-11B; Art 2A or 42, 21A; Chemistry 1A-1B, 8 or 10; Psychology 21, 22; Zoölogy 13.

The Major.—Courses 108, 118, 120, 143, 150, 162A-162B, 168, 175; 8 or 9 units chosen from other home economics courses; and 5 or 6 units (to make a total of 36) selected from Art 101A-101B, 156A-156B, Physical Education for Women 104A-104B, Psychology 110, 112.

- C. The Dietetics Major, for students preparing for dietetic internships.

Preparation for the Major.—Course 11A-11B; Bacteriology 1, Business Administration 1A, Chemistry 1A-1B, 8, Economics 1A-1B, English 1A-1B or Public Speaking 1A-1B, Psychology 21, 22, Zoölogy 13.

The Major.—Courses 110, 118, 119, 120, 125, 136A-136B, 159, 370 (or Psychology 110), Business Administration 153, 180; and 4 units chosen from other home economics courses, Agricultural Economics 104, Economics 150, Psychology 112, Public Health 101A-101B.

D. The Major in Food and Nutrition, for students preparing for promotional work with food or utility companies.

Preparation for the Major.—Course 11A-11B, Art 2A or 42, Business Administration 1A, Bacteriology 1, Chemistry 1A-1B or 2A, 8 or 10; Economics 1A-1B, English 1A, Public Speaking 1A, Physics 10A-10B, Zoölogy 13.

The Major.—Courses 110, 118, 120, 136A-136B, 162A-162B, Business Administration 140, 180, 185; and 8 units selected from other home economics courses, Psychology 101.

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.—Course 11A-11B, Bacteriology 1, Chemistry 1A-1B, 8, Mathematics OF and 8 (or the equivalent), 3A-3B, Physics 2A-2B, Zoölogy 13.

The Major.—Courses 110, 118, 119, 120, 125, 159, 199 (2-4 units); the remainder of the 36-unit major to be selected from courses 143, 150, 162A-162B, 168, Bacteriology 103, Physics 107A, 113, Chemistry 109A-109B, Sociology 120, 181, Statistics 131A-131B, Zoölogy 118.

The minor should be in chemistry and should include Chemistry 6A and 9.

F. The Major in Clothing.

Preparation for the Major.—Courses 1A-1B; Art 1A, 2A-2B, 21A; Chemistry 1A-1B, 8; Economics 1A-1B.

The Major.—Courses 108, 162A, 170, 175, 176; Art 101A-101B, 183A-183B; Psychology 101; other units to make 36 chosen from courses 143, 162B, 168, 199; Art 121A-121B, 147A-147B, 173.

College of Letters and Science

Letters and Science List.—All undergraduate courses except 108, 125, 150, 175 and 176 are included in the Letters and Science List of Courses. For regulations governing this list, see the CIRCULAR OF INFORMATION.

Laboratory Fees.—Courses 1A, 1B, 175, 176, \$1.50; 11B, 108, 136A, 136B, 150, \$2; 119, 199A-199B (Sec. 2), \$2.50; 110, \$3.50; 11A, 12, \$4; 120, 125, \$5; 159, \$7.

LOWER DIVISION COURSES

1A. Elementary Clothing. (3) I, II. Mrs. Hungerland, Miss Wilson

Prerequisite: matriculation credit in "clothing" or Art 2A or 42. Fee, \$1.50.

Fundamental problems of clothing construction, including the use of commercial patterns and the selection, care, and use of equipment.

1B. Elementary Clothing. (3) II. Miss Wilson, Mrs. Hungerland

Prerequisite: course 1A. Fee, \$1.50.

Problems involved in clothing and textile buying; an elementary study of textiles, with attention to prices, quality differences, consumer aids, labels, advertising, and the selection of suitable textiles and designs.

11A. Elementary Food. (3) I, II.

Mrs. Stevenson

Prerequisite: high school chemistry or Chemistry 1A or 2A. Fee, \$4.
The classification, occurrence, and general properties of foodstuffs; the principles involved in food preparation and preservation; compilation of recipes; practice in judging food preparations and in meal service.

11B. Food Economics. (3) I, II.

Mrs. Stevenson

Prerequisite: course 11A. Fee, \$2.
The production, transportation, and marketing of food materials; the legal and sanitary aspects of food products handled in commerce; prices in relation to grades and standards.

12. Dietetics and Food Preparation. (3) II.

Miss Goddard

Fee, \$4.
The composition of foods, the principles involved in food preparation, the requirements for dietary essentials.

32. Elements of Nutrition. (2) I, II.

Miss Goddard, Miss Mallon

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**110. Food Analysis. (3) II.**

Miss Goddard

Prerequisite: course 118. Fee, \$3.50.
The application of qualitative and quantitative methods to the study of foods.

118. Nutrition. (3) I, II.

Miss Mallon

Prerequisite: Chemistry 8 or 10, Zoölogy 13.
The chemistry of digestion and the metabolism of carbohydrates, fats, and proteins; a study of minerals and vitamins in relation to human nutrition.

120. Diet in Health and Disease. (3) I, II.

Miss Mallon

Prerequisite: courses 11A, 11B, 118, and Chemistry 8 or 10. Fee, \$5.
Human requirements for dietary essentials for infancy, childhood, adult life; dietary calculations; modification of normal diet for specific diseases.

125. Experimental Cookery. (3) I, II.

Mrs. Stevenson, Miss Goddard

Prerequisite: courses 11A and 110 or Chemistry 9, Chemistry 1A-1B. Fee \$5.

Quantitative methods in food preparation under controlled conditions.

143. Child Care. (2) I.

Miss Stewart

Prerequisite: Psychology 21, 22; Zoölogy 13.
Physical development of children from prenatal through adolescent life. Discussion of problems concerned with the care of children in the home.

150. Family Food Service. (3) II.

Mrs. Stevenson

Prerequisite: courses 11A-11B, 118, Art 2A, Chemistry 1A-1B. Fee, \$2.
Organization and management of family food service at different economic levels. Emphasis is placed on standard products, meal service, use and care of kitchen and dining equipment.

159. Metabolism Methods. (3) II.

Miss Goddard

Prerequisite: course 110 or the equivalent. Fee, \$7.

Observations of the influence of special diets upon various phases of metabolism; practice in the methods of determining blood constituents, basal metabolic rate, and nitrogen and mineral excretions.

162A. The Economic Problems of Families. (2) I.

Miss Gray

Distribution of families as to size, composition, domicile, income, and expenditures. Economic and social developments which have influenced the activities of the members of the household and brought about changes in the family's economic problems and standards of living.

164B. Housing. (2) I.

Miss Gray

The contemporary housing situation, essentials of healthful housing, improvement in housing, and municipal, state, and federal activities.

170. Clothing Economics. (3) I.

Mrs. Hungerland

Methods of clothing production and distribution and their effects on clothing costs and values; the consumption of clothing.

175. Dress Design. (3) I, II.

Miss Wilson, Mrs. Hungerland

Prerequisite: course 1A, Art 21. Fee, \$1.50.

Flat pattern designing; study and construction of coats and suits.

176. Advanced Dress Design. (3) I.

Mrs. Hungerland

Prerequisite: course 175. Fee, \$1.50.

French draping; selection and manipulation of fabrics; creation of original designs.

199A-199B. Problems in Home Economics. (2-4; 2-4) Yr.

The Staff

Prerequisite: senior standing with such special preparation as the problem may demand. Section 1, field investigations and statistical studies; the expense of the problem to be met by the student. Section 2, laboratory; fee, \$2.50 a term.

Assigned problems for individual investigation, the work of each student to be directed by the instructor in whose division of the field the problem lies.

GRADUATE COURSES**251. Seminar in Nutrition. (2) I.**

Miss Mallon

Recent advances in the science of nutrition and in the dietetic treatment of disease.

262. Personal and Family Economics. Seminar. (2) I.

Miss Gray

Review of budget studies representative of various levels of living and of those based on quantity budgets.

282A-282B. Selected Problems. (2-4; 2-4) Yr.

The Staff

Laboratory or field investigation in nutrition, foods, or household economics.

PROFESSIONAL COURSE IN METHOD**370. Principles of Home Economics Teaching. (3) I.**

Mrs. Martin

Prerequisite: courses 1A, 1B, 11A, 11B, 120, 150, 175.

The development of home economics as an educational movement; home-making courses and their presentation in high schools; homemaking activities in the elementary school; critical review of texts and references in relation to curriculum requirements in different types of schools.

LIFE SCIENCES GROUP

BENNET M. ALLEN, Ph.D., Professor of Zoölogy (Chairman of the Group).

This group is composed of the departments of Bacteriology, Botany, and Zoölogy, and has been organized for the purpose of unifying and coördinating the activities in these fields. Although no attempt is made to curtail the free development of each department, the special committee in charge of the Life Sciences Group endeavors to articulate, for their mutual benefit, the courses and research work of the three departments concerned.

The announcements of the departments comprising this group appear in their alphabetical order.

BIOLOGY**LOWER DIVISION COURSES****1. Fundamentals of Biology. (3) I, II.****Miss Scott**

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

Important principles of biology illustrated by studies of structure and activities of living organisms, both plants and animals.

12. General Biology. (3) I.**Mr. Cowles**

Lectures, three hours; demonstration, one hour; one required field trip in the term. Prerequisite: course 1, Botany 1A, or Zoölogy 1.

A course in systematic and ecologic biology with emphasis on local species.

MATHEMATICS

PAUL H. DAUS, Ph.D., Professor of Mathematics.

GEORGE E. F. SHERWOOD, Ph.D., Professor of Mathematics.

TRACY Y. THOMAS, Ph.D., Professor of Mathematics.

WILLIAM M. WHYBURN, Ph.D., Professor of Mathematics (Chairman of the Department).

CLIFFORD BELL, Ph.D., Associate Professor of Mathematics.

GLENN JAMES, Ph.D., Associate Professor of Mathematics.

WENDELL E. MASON, M.S.E., M.E., Associate Professor of Applied Mathematics.

MAX ZORN, Ph.D., Associate Professor of Mathematics.

PAUL G. HOEL, Ph.D., Assistant Professor of Mathematics.

GUY H. HUNT, C.E., Assistant Professor of Applied Mathematics.

WILLIAM T. PUCKETT, JR., Ph.D., Assistant Professor of Mathematics.

ANGUS E. TAYLOR, 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.

✧ RALPH E. BYRNE, JR., Ph.D., Instructor in Mathematics.

ROBERT H. SORGENTFREY, Ph.D., Instructor in Mathematics.

Letters and Science List.—All undergraduate courses in mathematics and statistics are included in the Letters and Science List of Courses. For regulations governing this list, see the CIRCULAR OF INFORMATION.

Preparation for the Major.—Required: courses CF (or the equivalent), 8, 3A, 3B, 4A, 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 8. Recommended: physics, astronomy, and a reading knowledge of French and German.

The Major.—Courses 109 (or 4B), 111, 112A–112B, and 119, together with enough additional upper division units to total 24, must be included in every mathematics major. 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 101, 111, 370.

Business Administration.—Freshmen in this college are required to take courses 2A and 2B.

Pre-Engineering.—The University of California offers at Los Angeles the first two years of the curricula of the College of Engineering, which is in Berkeley. Students intending to pursue their studies in this college should consult the departmental pre-engineering adviser before making out their programs.

The minimum requirements for admission to the courses 3A–3B, 4A–4B are high school algebra, plane geometry, plane trigonometry, and course 8 unless excused as noted above. Prospective engineering students are urged, however, to add, in their high school course, another half-year of algebra and solid geometry to this minimum preparation.

Fees.—Civil Engineering 1FA, 1FB, 4, \$6; Civil Engineering 3, \$25.

✧ On leave for civilian war work.

LOWER DIVISION COURSES

CF. Trigonometry. (3) I, II.

Mr. Puckett

Prerequisite: two years of high school algebra or course 8. Students with one and one-half years of high school algebra may enroll in course CF concurrently with course 8. Two units only of credit will be allowed to students who have had trigonometry in high school.

†F. Spherical Trigonometry. (1) II.

Miss Worthington

Prerequisite: plane trigonometry.

2A. Commercial Algebra. (3) I, II.

Mr. Daus

Not open for credit to students with credit for course 8 or its equivalent.

2B. Mathematics of Finance. (3) I, II.

Mr. Daus

Prerequisite: course 2A or 8.

3A. Plane Analytic Geometry. (3) I, II.

Mr. Mason

Prerequisite: courses CF and 8, or the equivalent.

3B. First Course in Calculus. (3) I, II.

Mr. Sherwood

Prerequisite: course 3A.

3A-3B. Analytic Geometry and First Course in Calculus. (6) II.

Mr. Sorgenfrey

Prerequisite: trigonometry and course 8, or the equivalent.

4A. Second Course in Calculus. (3) I, II.

Mr. Taylor

Prerequisite: course 3B.

4B. Third Course in Calculus. (3) I, II.

Mr. James

Prerequisite: course 4A. Course 4B may be substituted for Mathematics 109 with the approval of the department.

4A-4B. Second and Third Courses in Calculus. (6) I.

Mr. Sherwood

Prerequisite: course 3B.

†7. Mathematics for Social and Life Sciences. (3) II.

Mr. Hoel

Prerequisite: course 8 or the equivalent.

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.

8. College Algebra. (3) I, II.

Mr. Valentine

Prerequisite: at least one year of high school algebra. Students who need extra drill in this subject will be required to enroll in sections which meet five days a week. Not open for credit to students with credit for course 2A or its equivalent.

8CF. Algebra and Trigonometry. (6) II.

Mr. Hunt

This course covers the material of courses 8 and CF.

10A-10B. Advanced Engineering Mathematics. (4) II.

Mr. Puckett

Prerequisite or concurrent: course 4B.

† To be given if a sufficient number of students enroll.

18. Fundamentals of Arithmetic. (2) I, II.

Mr. Bell

Prerequisite: sophomore standing.

UPPER DIVISION COURSES

Students may not elect upper division courses unless they have taken or are taking Mathematics 3B and 4A or their equivalent.

†101. College Geometry. (3) I.

Mr. Daus

Prerequisite: course 3A.

Selected topics in geometry with particular emphasis on recent developments.

102. Introduction to Higher Algebra. (3) II.

Miss Worthington

Prerequisite: courses 8, 3B, 4A.

Selected topics in algebra, with particular reference to modern points of view.

109. Third Course in Calculus. (3) I, II.

Mr. James

Prerequisite: courses 3B and 4A. Course 4B may be substituted for course 109 with the approval of the department.

111. Theory of Algebraic Equations. (3) I, II.

Mr. Zorn

Prerequisite: courses 8, 3B, and 4A.

112AB. Introduction to Higher Geometry. (4) I, II.

Mr. Sherwood

Prerequisite: courses 3B and 4A.

119. Differential Equations. (3) I, II.

Mr. Valentine

Prerequisite: course 109 or its equivalent. Not open for full credit to students who have had course 10B.

122A-122B. Advanced Calculus. (3-3) Yr.

Mr. Whyburn

Prerequisite: course 109.

125. Analytic Mechanics. (3) II.

Mr. Taylor

Prerequisite: course 109 or its equivalent, and Physics 105.

126. Potential Theory. (3) I.

Mr. Whyburn

Prerequisite: course 109 and one year of college physics.

†135. Numerical Mathematical Analysis. (3) II.

Mr. Hoel

Prerequisite: course 4A.

199. Special Problems in Mathematics. (3) I, II.

The Staff

Prerequisite: the consent of the department.

GRADUATE COURSES

†221A-221B. Higher Algebra. (3-3) Yr.

Mr. Sherwood

224A-224B. Functions of a Complex Variable. (3-3) Yr.

Mr. Thomas

†243. Real Variables—Differential Equations. (3) I.

Mr. Puckett

† To be given if a sufficient number of students enroll.

- †244. **Real Variables—Integration.** (3) II. Mr. Taylor
260. **Seminars in Mathematics.** (1 to 6) 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

STATISTICS**LOWER DIVISION COURSE**

1. **Elementary Statistics.** (2) II. Mr. Hoel
Emphasis is placed on the understanding of statistical methods. Topics covered are frequency distributions, measures of central tendency, measures of variation, moments, theoretical frequency distributions, sampling, standard errors, linear regression, and linear correlation.

UPPER DIVISION COURSE

- 131A. **Statistics.** (3) II. Mr. Hoel
Not open for credit to students who have taken course 1.

CIVIL ENGINEERING

- 11A-11B. **Plane Surveying Lectures.** (2-2) Beginning either term.
Prerequisite: trigonometry and geometric drawing. Mr. Hunt
- 1FA-1FB. **Plane Surveying Field Practice.** (1-1) Beginning either term.
Mr. Sorgenfrey
Prerequisite or concurrent: course 11A-11B. Fee, \$6 a term.
- †4. **Plane Surveying.** (2) II. Mr. Mason
Field practice, calculations, mapping. Prerequisite: course 11B and 1FB. This course replaces course 3 during the war emergency. Fee, \$6.
8. **Materials of Engineering Construction.** (2) I, II. Mr. Mason
Prerequisite: sophomore standing.
15. **Engineering Mechanics.** (3) II. Mr. Hunt
Prerequisite: Mathematics 3A.

† To be given if a sufficient number of students enroll.

MECHANIC ARTS

HAROLD W. MANSFIELD, Assistant Professor of Mechanic Arts and Director of Shops (Chairman of the Department).

✓ JAMES R. BELL, B.S., Associate in Mechanic Arts.

✓ WILLIS H. BLISS, B.E., Associate in Mechanic Arts.

FOSS R. BROCKWAY, Ed.B., Associate in Mechanic Arts.

ADRIAN D. KELLER, M.A., Associate in Mechanic Arts.

ADIN E. MATHEWS, M.S., Associate in Mechanic Arts.

CHARLES H. PAXTON, A.B., Associate in Mechanic Arts.

HARRY C. SHOWMAN, B.S., Associate in Mechanic Arts.

✧ THOMAS A. WATSON, Associate in Mechanic Arts.

WENDELL E. MASON, M.S.E., M.E., Associate Professor of Applied Mathematics.

College of Applied Arts

Preparation for the Major.—Mechanical Engineering D; Mechanic Arts 11, 12, 14, 15, 16, 17. Recommended: Physics 2A-2B; Mathematics CF, 8, and Art 2A.

The Major.—Thirty-six units of coördinated upper division courses approved by the department.

The Minor.—Twenty units of coördinated courses, not fewer than 6 of which must be in the upper division.

Special Secondary Teaching Credential in Industrial Arts Education.—For the requirements see the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION, LOS ANGELES.

Laboratory Fees.—Mechanic Arts 11, 12, 14, 17, 21, 24, 29A, 29B, 101, 102, 104, 107A, 107B, 111, 112, 114, 121, 135, 145, 155, \$3.50; Mechanical Engineering 10B, \$6.

MECHANICAL ENGINEERING

D. Engineering Drawing. (3) I, II.

Mr. Mansfield, Mr. Paxton

Lettering, orthographic projection, pictorial representation, developed surfaces and intersections, dimensioning, fastenings for machinery, working drawings, topographical drawing.

† 1. Elements of Heat Power Engineering. (3) II. Mr. Paxton, Mr. Keller

Heat engines, steam power plants, boiler room equipment, steam engines, turbines; Diesel and other internal combustion engines; fuels.

2. Descriptive Geometry. (3) I, II.

Mr. Mansfield, Mr. Paxton

Lecture, one hour; laboratory, six hours.

✧ On leave for civilian war work.

✧ On leave for duty in the armed forces.

§ The University of California offers at Los Angeles the first two years in preparation for admission to the junior year of the College of Engineering at Berkeley. Students intending to pursue their studies in this college should present their programs for approval to the pre-engineering adviser.

† To be given if a sufficient number of students enroll.

6. Machine Drawing. (8) I, II.

Mr. Mansfield, Mr. Paxton

Lecture, one hour; laboratory, six hours.

Design and delineation of simple machine parts in the drafting room, with special emphasis upon the production of drawings which conform to standard practice.

†10B. Treatment of Engineering Materials. (2) I, II.

Mr. Mathews, Mr. Showman

Prerequisite: Civil Engineering, 8. Fee, \$6.

MECHANIC ARTS**LOWER DIVISION COURSES****†16. Architectural Drawing. (2) II.**

Mr. Mansfield

An introduction to architectural drawing; the house, plans, elevations, sections, working drawings; architectural symbols and details; perspective drawing; lettering; reproduction by the blue print and other printing processes.

†17. Machine Shop. (8) II.

Mr. Showman

Fee, \$3.50.

Elementary machine shop practice; fundamental operations and tool processes; operations of standard power tools. Layout and bench work. Distinguishing various metals; working from blue prints and sketches; tool sharpening.

24. Elementary Electronics and Radio Circuits. (3) I, II.

Mr. Mathews

Fee, \$3.50.

A course for the beginner in radio, covering high frequency circuits and the use of thermionic vacuum tubes. Laboratory work in set construction and repair, and in the use of testing equipment.

25. Elements of Aeronautics. (3) I, II.

Mr. Brockway

A general survey of the field of aeronautics, including principles of flight, control of aircraft, essentials of servicing and operation, power plant types, materials, elements of navigation, weather, safety and civil air regulations.

†29A. Applied Photography. (2) II.

Mr. Keller

Fee, \$3.50 a term.

Fundamentals of photography; exposure, developers and their characteristics, films, filters, and development of negatives and prints. Contact and projection printing; composition; photomicrographs.

UPPER DIVISION COURSES**†102. General Shop. (3) II.**

Mr. Showman

Fee, \$3.50.

Fundamentals of handcraft: shop procedures and properties of materials used in craft projects. The tooling of copper and leather, glass etching, sand blasting, plaster casting; types of finishes; the uses, properties, and handling of plastics.

† To be given if a sufficient number of students enroll.

†135. **Automotive Power Plants.** (3) I, II.

Mr. Brockway

Fee, \$3.50.

Diesel and gasoline engines; principles of operation in laboratory and field; fuels and lubricants; drives and controls. Practice in taking down, assembling and adjusting. Survey of Diesel fuel systems and their operation. Approved methods of maintenance.

199A-199B. **Special Problems in Technical Related Subjects.** (2-2) Yr.

Mr. Mansfield and the Staff

Tools, materials, processes of industry, and special studies in the field of mechanic arts.

† To be given if a sufficient number of students enroll.

MILITARY SCIENCE AND TACTICS

FRANK ROYSE, Colonel, U. S. Army, Professor of Military Science and Tactics.

JAMES F. YOUNG, Major, U. S. Army, Associate Professor of Military Science and Tactics.

FRANK B. HERALD, Major, U. S. Army, Associate Professor of Military Science and Tactics.

ALLEN G. BENSON, Captain, U. S. Army, Instructor in Military Science and Tactics.

RAY L. GEYER, First Lieutenant, U. S. Army, Instructor in Military Science and Tactics.

OSWALD L. MUNDEN, Second Lieutenant, U. S. Army, Instructor in Military Science and Tactics.

Letters and Science List.—All undergraduate courses in this department are included in the Letters and Science List of Courses. For regulations governing this list, see the CIRCULAR OF INFORMATION.

The courses in military training are those prescribed by the War Department for units of the senior division of the Reserve Officers' Training Corps. The United States furnishes arms, equipment, uniforms, and some textbooks for the use of the students belonging to such units. An amount necessary to replace articles not returned by the students will be collected by the Cashier.

The student who is found by the Medical Examiner to be ineligible for enrollment in military science and tactics may be assigned by the Examiner to the individual gymnastics section of Physical Education for Men 3.

BASIO COURSE

The purpose of this course is to produce better citizenship through sound character development, under the guidance of the Constitution of the United States.

The basic course is prescribed for all first-year and second-year undergraduates male students who are citizens of the United States, able-bodied and under twenty-four years of age at the time of admission to the University. A first-year or second-year student claiming exemption because of non-citizenship, physical disability, or age 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.

3A-3B. Basic Military Training, Branch Immaterial. (3-3) Yr.

One hour of field instruction and three hours of class instruction each week.

Instruction and training in the basic theoretical and practical subjects necessary to enable the student to operate as a soldier in the field.

4A-4B. Basic Military Training, Branch Immaterial. (3-3) Yr.

One hour of field instruction and three hours of class instruction each week.

Instruction to the student to continue and preserve the training given in 3A-3B, and to instill a theoretical knowledge of military tactics and leadership required of a superior platoon leader.

MUSIC

GEORGE STEWART MCMANUS, Mus.Doc., Professor of Music.

ARNOLD SCHOENBERG, Professor of Music.

LEROY W. ALLEN, M.A., Associate Professor of Music (Chairman of the Department).

LAURENCE A. PETRAN, Mus.M., Ph.D., Associate Professor of Music and University Organist.

FRANCES WRIGHT, Associate Professor of Music.

ROBERT U. NELSON, M.A., Assistant Professor of Music.

WALTER H. RUBSAMEN, Ph.D., Assistant Professor of Music.

SQUIRE COOP, Lecturer in Music.

RAYMOND MOREMEN, M.S.M., Lecturer 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 except 7A-7B, 26A-26B, 27A-27B, 46A-46B-46C-46D, 108A-108B, 115A-115B and 144 are included in the Letters and Science List of Courses. For regulations governing this list, see the CIRCULAR OF INFORMATION.

Preparation for the Major.—Courses 1A-1B, 2A-2B, 14A-14B, 35A-35B. Recommended: a reading knowledge of French, German, Italian, or Spanish, Physics 10A-10B, and some ability in piano playing.

The Major.—Twenty-four units of upper division courses, including (a) course 104A-104B; (b) 6 units chosen from courses 111A-111B, 124, 125, 126, 127, 128, 129, 130, 131, 134, 136, 138, 142, 151, 199, sec. 2; and (c) 14 units chosen from courses 105A-105B, 106A-106B, 109A-109B, 114A-114B, 122A-122B, 199, sec. 1, and courses under (b) not duplicated. By arrangement with the department, four units chosen from courses 110A-110B, 116A-116B, and 117A-117B may be substituted for four units under (c).

College of Applied Arts

Two curricula are available:

A. For the bachelor's degree alone.

Preparation for the Major.—Courses 1A-1B, 2A-2B, 14A-14B, 35A-35B. Recommended: a reading knowledge of French, German, Italian, or Spanish, Physics 10A-10B, and some ability in piano playing.

The Major.—Thirty-six units of upper division courses, including (a) course 104A-104B; (b) 6 units chosen from courses 111A-111B, 124, 125, 126, 127, 128, 129, 130, 131, 134, 136, 138, 142, 144, 151, 199, sec. 2; and (c) 26 units

chosen from upper division courses in music, with the exception of courses 108A-108B and 115A-115B. Six to 8 units of upper division courses in related fields will be accepted upon departmental approval.

B. For the bachelor's degree leading to the special secondary teaching credential. This curriculum meets the departmental requirements for admission to the graduate courses leading to the general secondary credential.

Preparation for the Major.—Courses 1A-1B, 2A-2B, 7A-7B, 14A-14B, 35A-35B. Recommended: a reading knowledge of French, German, Italian, or Spanish, Physics 10A-10B, and some ability in piano playing.

The Major.—Courses 104A-104B, 105A-105B, 108A-108B, 109A-109B, 115A-115B; 6 units chosen from courses 111A-111B, 124, 125, 126, 127, 128, 129, 130, 131, 134, 136, 138, 142, 144, 151, 199, sec. 2; together with 12 additional units in upper division courses in music. Six to 8 units in related fields will be accepted upon departmental approval.

The Minor in Music.—Twenty units of coordinated courses, 6 of which must be in the upper division.

An acceptable minor with emphasis upon community music consists of course 1A-1B, together with not more than 8 other lower division units chosen from courses 9A-B-C-D, 10A-B-C-D, 26A-26B, 27A-27B, 37A-37B, and 46A-B-C-D. The upper division courses consist of 109A-109B, 144, and 2 or more units chosen from courses 110A-110B, 116A-116B, 117A-117B, and 151.

An acceptable minor with emphasis upon administration and direction of bands and orchestras consists of courses 1A-1B, 35A-35B, together with not more than 2 other lower division units chosen from courses 26A-26B, 27A-27B, and 46A-B-C-D. The upper division courses consist of 109A-109B and 114A-114B.

LOWER DIVISION COURSES

1A-1B. Solfeggio. (3-3) Beginning either term. Miss Wright
Elementary theory, dictation, and music reading. Basic course for the major in music.

2A-2B. The History and Appreciation of Music. (2-2) Yr.
Mr. Rubsamen, Mr. McManus

The consideration of music from formal, aesthetic, and historical standpoints.

9A. Chorus and Glee Club. (1) I. Mr. Moreman

11A. A Cappella Choir. (2) I. Mr. Moreman

Prerequisite: the consent of the instructor.

The study and performance of standard choral works for unaccompanied voices.

14A-14B. Counterpoint. (2-2) Yr. Mr. Nelson, Mr. Rubsamen

Prerequisite: course 35A-35B.

35A-35B. Harmony. (3-3) Yr. Mr. Rubsamen, Mr. Petran

Prerequisite: course 1A-1B or its equivalent; may be taken concurrently with 1A-1B with the consent of the instructor.

37A. Piano, Intermediate. (2) I. Mr. Coop

46A. University Band. (1) II. Mr. Allen

Prerequisite: the consent of the instructor.

UPPER DIVISION COURSES

The piano requirement for music majors, prerequisite to junior standing, is the ability to play such music as the accompaniments in the Teacher's Manuals of the Music Hour Series and the Progressive Series, four-part hymns and folk songs, and contrapuntal compositions equivalent to 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.

104A-104B. Form and Analysis. (2-2) Yr. Mr. Nelson, Mr. McManus

Prerequisite: course 85A-85B.

Analysis of homophonic and contrapuntal music.

105A-105B. Composition. (2-2) Yr. Mr. Nelson, Mr. McManus

Prerequisite: courses 14A-14B, 35A-35B, 104A-104B, and the consent of the instructor; 104A-104B may be taken concurrently.

Vocal and instrumental compositions in the smaller forms.

108A-108B. Advanced Voice. (2) I. Mr. Moreman

Prerequisite: course 7A-7B. Restricted to music majors working toward the special secondary and the general secondary credentials.

109A-109B. Conducting. (1-1) Yr. Mr. Moreman, Mr. Allen

Prerequisite: courses 1A-1B; 35A-35B, or the consent of the instructor.

The theory and practice of conducting choral and instrumental organizations.

111A. History of Music in Western Civilization. (3) II. Mr. Rubsamen

Prerequisite: courses 2A-2B, 35A-35B, or their equivalent.

The stylistic development of music with a background of its relationship to other arts and to culture in general.

114A. Instrumentation. (2) II. Mr. Allen

Prerequisite: course 35A-35B.

The theory and practice of writing for instrumental ensembles. The study of orchestral scores and an introduction to symphonic orchestration.

115A. Instrumental Technique and Repertoire. (2) II. Mr. Allen

115B. Instrumental Technique and Repertoire. (2) II. Mr. Allen

Prerequisite: course 35A-35B. Restricted to music majors working toward the special secondary and the general secondary credentials.

A theoretical and practical study of the instruments of the orchestra and band, including the principles of arranging music for representative combinations. Appropriate literature for instrumental ensembles.

128. Modern Tendencies in Music. (2) I. Mr. Nelson

Prerequisite: courses 14A-14B, 35A-35B.

A study of form, style, and idiom in contemporary music.

130. History and Literature of Church Music. (2) I. Mr. Moreman

Prerequisite: courses 2A-2B, 35A-35B.

A study of the history and development of church music, including worship forms and liturgies.

- 131. Oratorio Literature. (2) I.** Mr. Coop
 Prerequisite: courses 2A-2B, 35A-35B.
 A survey of oratorio music from its inception until the present day.
- 136. Folk Music. (2) II.** Mr. Petran
 Prerequisite: the consent of the instructor.
 Origins, types, and illustrations of the folk music of various countries.
- 142. History of Music in America. (2) II.** Mr. McManus
 Prerequisite: course 2A-2B or its equivalent.
 A survey of music in the United States from the colonial period to the present day.
- 199. Special Studies in Music. (2) I, II.** Mr. Rubsamen
 Prerequisite: the consent of the instructor.

GRADUATE COURSES

- *253A-253B. Seminar in Musicology. (3-3) Yr.** Mr. Rubsamen
 Prerequisite: course 111A-111B or the equivalent.

PROFESSIONAL COURSES IN METHOD

- 330. Elementary Music Education. (3) I.** 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 Wright
 Prerequisite: junior standing. Course 370B is required of candidates for the general secondary credential with music as a major.
 Organization and administration of music in secondary schools.

* Course 253B to be given, spring term; 253A, summer term.

NAVAL SCIENCE AND TACTICS

WILLIAM C. BARKER, Captain, U. S. Navy, Professor of Naval Science and Tactics (Chairman of the Department).

JOSEPH H. CHADWICK, Commander, U. S. Navy, Associate Professor of Naval Science and Tactics.

PHILIP W. WARREN, Commander, U. S. Navy, Associate Professor of Naval Science and Tactics.

JOHN A. MARSH, Lieutenant Commander, U. S. Navy, Associate Professor of Naval Science and Tactics.

ROBERTSON J. WEEKS, Lieutenant Commander, U. S. Navy, Associate Professor of Naval Science and Tactics.

JOHN L. TEETS, Lieutenant (j.g.) U. S. Naval Reserve, Assistant Professor of Naval Science and Tactics.

KARL J. KANITZ, Chief Ship's Clerk, U. S. Navy, Administrative Assistant, Naval Science and Tactics.

JESSE A. BABCOCK, Chief Gunner's Mate, U. S. Navy, Assistant in Naval Science and Tactics.

THAYER B. JORRIS, Chief Specialist (A), U. S. Naval Reserve, Assistant in Naval Science and Tactics.

SAMUEL LANDY, Chief Boatswain's Mate, U. S. Navy, Assistant in Naval Science and Tactics.

Letters and Science List. All undergraduate courses in this department are included in the Letters and Science List of Courses. For regulations governing this list, see the CIRCULAR OF INFORMATION.

NAVAL RESERVE OFFICERS' TRAINING CORPS

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

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

The courses given are those prescribed by the Navy Department for the Naval Reserve Officers' Training Corps.

All enrollments in the Naval R.O.T.C. are made from students who have completed the first two terms of the Navy V-12 program. Selected students are given five additional consecutive terms in advanced naval subjects leading to a commission as Ensign in the U. S. Naval Reserve or as 2d Lieutenant in the U. S. Marine Corps Reserve. After one year of active service in the Fleet, or comparable service in the field in the Marine Corps, such graduates may become eligible for a commission in the regular Navy or Marine Corps.

*Third Class***10. (NS4)* Navigation and Nautical Astronomy. (3) I.****Mr. Weeks in charge**

Lectures two hours weekly; classroom practical work two hours bi-weekly; sextant field work and moving pictures as directed.

Introduction to practical navigation; the compass; the sailings; lines of position; piloting; chart work. The equinoctial and horizon systems; circles of equal altitude; computed altitude and azimuth; celestial lines of position; the sextant.

20. (NS5)* Navigation and Nautical Astronomy. (3) II.

Lectures, etc., as for course 10.

Mr. Weeks in charge

Time; the chronometer; the nautical and air almanacs; latitude; the day's work; alternative methods of computing altitude; tides and currents; star identification; compensation of the compass.

11. (NS1)* Seamanship. (3) I.**Mr. Warren**

Types of ships, the hull and fittings of a ship; knotting and splicing; boat handling in surf; ground tackle; mooring; docking; elementary ship handling; station keeping and maneuvering.

21. (NS2)* Seamanship. (3) II.**Mr. Warren**

Elementary weather study and the law of storms; handling of ships within the storm area; prevailing winds; ocean currents and icebergs; rules for preventing collisions at sea; advanced ship handling; naval leadership.

24. (NS3)* Communication. (3) II.**Mr. Marsh**

Signal flags; Morse code; semaphore; procedure; security; correspondence; organization and operation of the Naval Communication Service.

*Second Class***132. (NS8)* Ordnance. (3) I.****Mr. Chadwick**

Practical use of small arms; elementary principles of gun construction; manufacture and use of explosives and projectiles; manufacture and use of armor; gun sights; gun mounts; depth charges; mines; torpedoes; chemical warfare; and safety precautions.

133. (NS6)* Naval Administration and Law. (3) I.**Mr. Marsh**

Naval policy and administration; naval organization ashore and afloat. Navy regulations; discipline; international law; military government and martial law; procedure of naval courts and boards.

142. (NS9)* Gunnery. (3) II.**Mr. Chadwick**

Elementary principles of naval gunnery training and fire control; methods and means of firing; range finding and range keeping; the fire control problem and its application to different types of ships; anti-aircraft control; torpedo control; mines and depth charges; offensive and defensive tactics; elementary exterior ballistics.

* All courses described herein are listed in Navy V-12 Bulletin, No. 101 (November 1, 1948) under the respective numbers which appear in parentheses.

First Class

150. (NS7)* Tactics and Aviation. (3) I.

Mr. Weeks, Mr. Teets

Use of the maneuvering board; tactical evolutions; aircraft instruments; aerial navigation; mission of naval aviation; types, uses and designation of naval aircraft; identification of aircraft and surface craft by visual aids; carriers and carrier tactics.

155. (NS10)* Damage Control and Engineering. (3) I.

Mr. Warren

The buoyancy and stability of ships; hull structure; subdivisions and the control of hull damage. Principles of operation of marine boilers, turbines, gasoline and diesel engines together with all auxiliaries which make up the complete marine engineering plant. Plant management.

156. (NS11)* Refresher Course. (3) I.

Mr. Marsh

Review and practical applications of Naval Science courses previously completed.

* All courses described herein are listed in Navy V-12 Bulletin, No. 101 (November 1, 1943) under the respective numbers which appear in parentheses.

OCEANOGRAPHY

G. F. McEWEN, Ph.D., Professor and Curator of Physical Oceanography.

FRANCIS B. SUMNER, Ph.D., Professor of Biology.

HARALD U. SVERDRUP, Ph.D., Professor of Oceanography and Director of the Scripps Institution of Oceanography.

THOMAS WAYLAND VAUGHAN, Ph.D., LL.D., Professor of Oceanography and Director of the Scripps Institution of Oceanography, Emeritus.

DENIS L. FOX, Ph.D., Associate Professor of Marine Biochemistry.

✧ MARTIN W. JOHNSON, Ph.D., Associate Professor of Marine Biology.

CLAUDE E. ZOBELL, Ph.D., Associate Professor of Marine Microbiology.

WINFRED E. ALLEN, M.A., Assistant Professor of Biology, Emeritus.

✧ RICHARD H. FLEMING, Ph.D., Assistant Professor of Oceanography.

ERIK G. MOBERG, Ph.D., Assistant Professor of Oceanography.

✧ ROGER R. REVELLE, Ph.D., Assistant Professor of Oceanography.

✧ MARSTON C. SARGENT, Ph.D., Instructor in Oceanography.

PERCY S. BARNHART, M.S., Associate in Oceanography and Curator of the Biological Collection.

STANLEY W. CHAMBERS, Associate in Physical Oceanography.

C. K. TSENG, Ph.D., Associate in Oceanography.

The courses in oceanography are given at the Scripps Institution of Oceanography at La Jolla, California. For further information concerning the Institution write to the Director.

Advanced degrees.—Work leading to the master's or Ph.D degree in oceanography and certain other marine sciences is offered to a limited number of qualified students subject to the rules and regulations of the University as set forth in the ANNOUNCEMENT OF THE GRADUATE DIVISION, SOUTHERN SECTION. The student must be well trained in the fundamentals before coming to La Jolla. Usually at least two terms of resident work at Los Angeles or Berkeley will be required of prospective candidates for the doctor's degree, and at least one term 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) course 101 (8); (g) basic courses in one or more of the biological sciences (8). Preparation in physical chemistry, organic chemistry, integral calculus, and geology is recommended.

In addition to these preliminary requirements the student is required to complete at least 2 units of work in each of four marine sciences besides the research work in his special field.

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., biochemistry, physicochemical biology, geological sciences, microbiology, comparative physiology, and zoölogy. The preliminary requirements

✧ On leave for civilian war work.

✧ On leave for duty in the armed forces.

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 2 units of work in each of three marine sciences besides course 101 and 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 COURSE

199A-199B. Special Studies in Marine Sciences. (2-4; 2-4) I, II. Staff

Introduction to the research problems, experimental methods and literature of the different marine sciences listed below. Open to advanced students by special arrangement with the chairman of the division in which the work is to be done, subject to the approval of the Director of the Institution.

Research Courses

The following are primarily research courses in the different aspects of oceanography. 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 the fall term.

281A-281B. Physical Oceanography. (2-4; 2-4) I, II.

Mr. Sverdrup, Mr. McEwen

A study of the physical properties of sea water, oceanic circulation and its causes.

282A-282B. Marine Meteorology. (2-4; 2-4) I, II.

Mr. Sverdrup, Mr. McEwen

Interrelations between the circulation of the oceans and that of the atmosphere.

284A-284B. Chemical Oceanography. (2-4; 2-4) I, II.

Mr. Moberg

Chemistry applied to the study of sea water, plankton and other marine materials.

285A-285B. Marine Microbiology. (2-4; 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.

288A-288B. Marine Biochemistry. (2-4; 2-4) I, II.

Mr. Fox

Comparative biochemistry of marine animals; biochemical relationships between marine organisms and certain environmental factors.

289A-289B. Biology of Fishes. (2-4; 2-4) I, II.

Mr. Sumner

The ecology and physiology of fishes with special reference to problems of adaptation to specific factors of marine environment.

290A-290B. Comparative Physiology. (2-4; 2-4) I, II.

Mr. Fox

Studies of various physiological functions with special reference to evolutionary position and environmental factors.

RELATED COURSE IN ANOTHER DEPARTMENT

Meteorology 103. Interaction between the Sea and the Atmosphere. (1) I, II.

Given on the Los Angeles campus.

Mr. Sverdrup

PHILOSOPHY

- *DONALD A. PIATT, Ph.D., Professor of Philosophy.
 HANS REICHENBACH, Ph.D., Professor of Philosophy.
 JOHN ELOF BOODIN, Ph.D., Professor of Philosophy, Emeritus.
 ERNEST C. MOORE, Ph.D., LL.D., Professor of Philosophy and Education, Emeritus.
 CHARLES H. RIEBER, Ph.D., LL.D., Professor of Philosophy, Emeritus.
 HUGH MILLER, Ph.D., Associate Professor of Philosophy (Chairman of the Department).
 RICHARD B. O'R. HOCKING, Ph.D., Assistant Professor of Philosophy.
 J. WESLEY ROBSON, Ph.D., Assistant Professor of Philosophy.

PAUL FRIEDLANDER, Ph.D., Lecturer in Classics.

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 the CIRCULAR OF INFORMATION.

Preparation for the Major.—Twelve units of lower division courses in philosophy, including courses 20, 21.

The Major.—Twenty-four units in upper division courses, 6 of which may be in related courses in other departments with the approval of the departmental adviser. At the beginning of the senior year, the student must submit for approval to the department a statement of the courses which he expects to offer in fulfillment of major requirements for graduation.

LOWER DIVISION COURSES

All lower division courses are introductory and carry no prerequisite.

- 2A-2B. Introduction to Philosophy. (3-3) Yr. Mr. Miller
 Introducing the student to the central problems of philosophy in their relations to science and society.
4. Short Introduction to Philosophy. (2) I. Mr. Hocking
 Not open for credit to students who have completed 2A.
 This course acquaints the student with the chief problems and types of philosophy.
20. History of Greek Philosophy. (3) I. Mr. Hocking
 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. Miller
 The Renaissance and the rise of modern science; rationalism in Descartes, Spinoza, Leibniz; empiricism in Locke, Berkeley, Hume; Kant and his successors; recent movements.
22. Deductive Logic. (3) II. Mr. Reichenbach
 The elements of formal logic; Aristotle's logic; modern symbolic logic. The forms of reasoning and the fallacies.

* Absent on leave.

UPPER DIVISION COURSES

Upper division courses in philosophy include: (a) *General Studies* (numbered 100 to 150), dealing with the principles of wide fields of inquiry such as the natural sciences, the social sciences, and the humanities; these courses are open to students who in the judgment of the instructor have adequate preparation in philosophy or in the special field under study. (b) *Historical Studies* (numbered 151 to 178), dealing with special periods or with individual thinkers. (c) *Systematic Studies* (numbered 180 to 198), 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.

121. Political Philosophy. (3) II.

Mr. Miller

The theory of democracy: in concepts of the individual and the state; the state and society; critique of absolutistic doctrines.

124. Nineteenth-Century Philosophy. (3) I.

Mr. Hocking

A study, in terms of outstanding philosophers, of the social and scientific movements of the nineteenth century.

146. Philosophy in Literature. (3) I.

Mr. Robson

A study of philosophical ideas expressed in the literary masterpieces of Plato, Lucretius, Dante, Shakespeare, Goethe, Tolstoi, Lewis Carroll, Thomas Mann, and others.

147. Philosophy of History. (3) I.

Mr. Miller

The problems of historical knowledge and historical method; the relativists, Beard, Croce, etc.; dialectical history; the relation of history to theory; the establishment of historical truth.

148. Philosophy of Nature. (3) II.

Mr. Reichenbach

The physical universe and man's place in it in the light of modern discoveries.

Historical Studies

152. Plato and His Predecessors. (3) II.

Mr. Friedlander

163. British Empiricism. (3) I.

Mr. Robson

A study of the philosophies of Locke, Berkeley, and Hume.

Systematic Studies

199A-199B. Selected Problems in Philosophy. (2-3; 2-3) Yr.

Admission by special arrangement.

Mr. Miller in charge

GRADUATE COURSES

251. Seminar: Metaphysics. (3) I.

Mr. Miller

260. Seminar: Philosophy of Mathematics. (3) II.

Mr. Reichenbach

298A-298B. Special Study: Selected Problems in Philosophy. (2-4; 2-4) Yr.

Mr. Miller in charge

PHYSICAL EDUCATION

JOHN F. BOVARD, Ph.D., Professor of Physical Education and Director of the Men's Division (Chairman of the Department).

HAZEL J. CUBBERLEY, M.A., Associate Professor of Physical Education for Women.

MARTHA B. DEANE, B.S., Associate Professor of Physical Education for Women and Director of Women's Division.

WILLIAM H. SPAULDING, A.B., Director of Athletics.

PAUL FRAMPTON, M.A., Associate Supervisor of Physical Education for Men.

DIANA W. ANDERSON, M.A., Assistant Supervisor of Physical Education for Women and Supervisor of Training, Physical Education.

LUCILE R. GRUNEWALD, M.A., Assistant Supervisor of Physical Education for Women.

EDITH R. HARSHBERGER, M.A., Assistant Supervisor of Physical Education for Women.

CECIL B. HOLLINGSWORTH, M.A., Assistant Supervisor of Physical Education for Men.

BERNECE H. HOOPER, M.A., Assistant Supervisor of Physical Education for Women.

EDITH I. HYDE, M.A., Assistant Supervisor of Physical Education for Women.

WILBUR C. JOHNS, Ed.B., Assistant Supervisor of Physical Education for Men.

DONALD K. PARK, B.S., Assistant Supervisor of Physical Education for Men.

ORSIE THOMSON, M.A., Assistant Supervisor of Physical Education for Women.

GEORGIA B. JOHNSON, Ph.D., Instructor in Physical Education for Women.

BETTY ALOOX, M.A., Junior Supervisor of Physical Education for Women.

MARJORY G. ALLEN, Ed.B., Junior Supervisor of Physical Education for Women.

MARGARET DUNCAN GREENE, M.A., Junior Supervisor of Physical Education for Women.

✧ **NORMAN D. DUNCAN, M.A.**, Junior Supervisor of Physical Education for Men.

THOMAS E. HELT, A.B., Junior Supervisor of Physical Education for Men.

JACK E. MONTGOMERY, Ed.B., Junior Supervisor of Physical Education for Men.

JOSEPHINE KETCIK MURRAY, M.S., Junior Supervisor of Physical Education for Women.

ETHEL S. BRUCE, Associate in Physical Education for Women.

MYRA KINCH GALEA, Ed.B., Assistant in Physical Education.

✧ **M. BRIGGS HUNT, Ed.B.**, Assistant in Physical Education for Men.

ROBERT TYLER LEE, Assistant in Dance and Assistant in Art.

ELIZABETH F. B. McDERMOTT, Assistant in Physical Education.

CARL M. O'GARA, Assistant in Physical Education for Men.

✧ On leave for duty in the armed forces.

✧ JAMES G. SCHAEFFER, Assistant in Physical Education for Men.

WILLIAM J. NORRIS, M.D., University Physician.

DONALD MACKINNON, M.D., Physician for Men.

* GERTRUDE T. HUBERTY, M.D., Physician for Women.

LEWIS GUNTHER, M.D., Consultant, Student Health Service.

Physical Education 3 (men) or 4 (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.

Medical Examination.—(a) Students entering the University for the first time and (b) reëntering students must pass a medical examination upon admission. All students are given an examination each year. 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

The Department of Physical Education offers three curricula; the major in each is 36 units, and the minor is 20 units.

A. Major for Prospective Teachers.

WOMEN

Preparation for the Major.—Courses 5, 30, 31, 32, 44, Chemistry 2A; Zoölogy 15, 35.

The Major.—Thirty-six units of upper division courses in physical education and related fields, including courses 120, 149, 171, 172, 182, 190, 192A-192B, 321A-321B, 321C-321D, and 15 units to be selected from 104A-104B, 114A, 114B, 120C, 130A, 130B, 135, 136, 180, 183, Physical Education 131, 140, Education 111, 112, 180, Psychology 110.

MEN

Preparation for the Major.—Chemistry 1A or 2A; Zoölogy 1 and 13 (or 15), 35; Physical Education 1, 5, 6, 7, 8, 9, 30, 40.

The Major.†—Thirty-six units of upper division courses in physical education and related fields, including courses 120, 131, 140, 149, 182, 190, 192A-192B, 356A-356B, and 10 units to be selected from 104B, 114A, 180, 191, 199A, 199B, Education 111, 112, Psychology 110.

MEN AND WOMEN

The Minor for the Bachelor's Degree.—Twenty units of coördinated courses (aside from those taken in education), not less than 6 of which are in the upper division.

✧ On leave for civilian war work.

* Absent on leave, 1943-1944.

† 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 CIRCULAR OF INFORMATION, Departments at Berkeley.

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.—A teaching major of from 40 to 54 units is required, of which not less than 24 units are upper division or graduate courses. For other requirements, including those of the minor, consult the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION, LOS ANGELES.

B. Major in Physical Therapy (Men and Women).

The curriculum in physical therapy is designed for students who are interested in corrective physical education and therapeutic exercise rather than in teaching. It prepares the student for the professional course offered at the the Los Angeles Children's Hospital, or any other school of physical therapy approved by the American Medical Association.

Preparation for the Major.—Required: Chemistry 2A, Biology 1, Zoölogy 15, courses 5, 30, 44. Recommended year courses: Public Speaking 1A-1B or 2A-2B, Psychology 21 and 22, Sociology 30A-30B, and Art 27.

The Major.—Courses 149, 182, 183, 184, 185, 190, 192A-192B, and 13 units to be selected from the following: Education 110, 111, 112, 160, 180; courses 104A-104B, 114A-114B, 120, 180, 184; Psychology 108, 112, 168.

C. Curriculum in Dance (Men and Women).

Preparation for the Curriculum.—Required: courses 31, Art 1A-1B, 2A-2B, 48, English 86A-86B. Recommended: Chemistry 2A, English 1A-1B, French 1, 2, Music 2A-2B, Philosophy 2A-2B or 20 and 21, Psychology 21, 22, Zoölogy 1 and 13 (or 15), 35.

The Curriculum.—Courses 114A, 120, 130A-130B, 133, 135, 136, and three units to be selected from courses 104A-104B, 114B, 131, 172, 180, 190, 192A, 193; Physical Education for Men 140, Art 101 or 183, English 114A-114B, Philosophy 136, Psychology 135, 138.

The Minor for the Bachelor's Degree.—Either English or art is recommended; English 31, 117J, 153, or Art 101 (or 183), 168A-168B, and 4 units to be chosen on recommendation of the Committee on Group Major in Dance.

College of Letters and Science*

Letters and Science List.—Courses 1, 2, 3, 4, 44, 114A-114B, 120, 133, 135, 136, 140, 180, and 193 are included in the Letters and Science List of Courses. For regulations governing this list, see the CIRCULAR OF INFORMATION.

LOWER DIVISION COURSES

1. Hygiene and Sanitation (Men and Women). (2) I, II. Mr. MacKinnon

†3. Prescribed Physical Education for Freshmen and Sophomores (Men).

(1) I, II.

The Staff

* 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 CIRCULAR OF INFORMATION of the departments at Berkeley.

† For full statement of the requirement of this course, see the CIRCULAR OF INFORMATION.

Classes meet three times weekly. Section assignments are made by the department after students have been classified, according to their performance in the "General Athletic Ability Test" given by the staff to all entering men during the first week of each term. Physical Education 3 may be elected by students in the junior and senior years.

Archery, baseball, basketball, boxing, cricket, dance fundamentals, fencing, folk dancing, American football, golf, group games, elementary tumbling and apparatus, handball, rugby, soccer, social dancing, swimming, tennis, track, water polo, wrestling, restricted gymnastics.

†4. Prescribed Physical Education for Freshmen and Sophomores (Women).

(1) I, II

Miss Deane and the Staff

Classes meet three times weekly. Section assignments are made only by the department. This course may be elected for credit by juniors and seniors.

The following activities are offered: archery, badminton, basketball, bowling, character dancing, dance fundamentals, deck sports, fencing, folk dancing, golf, hockey, lacrosse, social dancing, swimming, tennis, volleyball. Students whose physical condition indicates the need of modified activity are assigned to individual physical education classes.

5. Safety Education and First Aid. (2) I, II.

Section 1 (Men).

Mr. Frampton

Section 2 (Women).

Mrs. Johnson

Prevention and care of common accidents and emergencies in the home and school.

6. Professional Activities (Men). (1½) I.

The Staff

The class meets for two hours two times a week. Only open to students with a major or a minor in physical education. Students taking this course are excused from the regular prescribed physical education, course 3. Professional students must also take training in tennis, swimming, games, and wrestling.

The fundamental activities necessary for teaching in the secondary and college fields.

7. Professional Activities (Men). (1½) II.

The Staff

The class meets for two hours two times a week. Open only to students with a major or a minor in physical education.

A continuation of course 6.

20. Fundamentals of Scouting (Men). (2) II.

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.

23. Recreational Activities (Men and Women). (1) I, II.

Mrs. Greene

Discussion, one hour; laboratory, two hours.

Discussion of philosophy of recreation with emphasis on the place of recreational agencies in our total war effort. Recreational experiences in many types of situations: active and quiet games, hobbies, hiking and related activities, activities for the home. Individual surveys of recreational opportunities in a specific community. This course is particularly designed to develop recreational skills and knowledge for use in the community with special reference to wartime needs.

† For full statement of the requirement of this course, see the CIRCULAR OF INFORMATION.

30. Introduction to Physical Education (Men and Women). (1) I.

Miss Deane

The scope and significance of physical education in the modern school program.

31. Professional Activities (Women). (3) I.

Miss Deane, Miss Hooper, Mrs. Johnson

Open only to students with a major or minor in physical education, dance, or drama. Students are excused from the physical education requirement, course 4, during the term in which they are enrolled in this course.

Fundamental rhythmic activities necessary for teaching on the secondary and college levels; music analysis for dance.

32. Professional Activities (Women). (3) II.

Mrs. Bruce, Miss Thompson, Mrs. Greene

Open only to students with a major or minor in physical education. Students are excused from the physical education requirement, Course 4, during the term in which they are enrolled in this course.

Theory and practice of fundamental and advanced techniques and officiating in the following activities: swimming, tennis, basketball, field hockey, soccer, speedball, softball, volleyball.

40. The Technique of Teaching Swimming and Life Saving (Men and Women). (2) II.

Section 1 (Women).

Mrs. Greene

Section 2 (Men).

Mr. Montgomery

Prerequisite: Students must be at least twenty years of age, have a Red Cross Senior Life Saving Certificate up to date, and show a definite need for the appointment to receive a Red Cross Life Saving Instructor's Certificate.

Preparation for and conduct of the Red Cross Life Saving Tests and the Red Cross Life Saving Instructor's Test; advanced technique in teaching swimming; special emphasis on water safety.

44. Principles of Health Education (Women). (2) I, II.

The Staff

Sections 1, 2. General Elementary Students.

Sections 3, 4. General Students, Letters and Science.

Section 5. Physical Education Majors.

Section 6. Nurses Training Students.

A study of personal hygiene and community health problems, including the principles of sanitation.

104B. Camp Craft (Men and Women). (2) I.

Miss Hooper

Training course for camp counselors. Program making for various types of camps, schools, church, and community groups. Study of fundamental camp activities, including those simple and elementary enough for youth, and those designed especially for adult groups.

120. Principles of Physical Education (Men and Women). (2) II.

Miss Cubberley

A survey of the more significant influences which serve as a foundation for theory and practice in physical education. The implications of these factors with respect to objectives, methods, and materials of physical education.

120C. Observations in Physical Education (Men and Women). (1) II.

Miss Cubberley

May be taken separately or concurrently with Physical Education 120. A series of planned observations of physical and health education programs in schools and playgrounds followed by analyses and discussion.

130A-130B. Dance Composition Workshop (Men and Women). (2-2) Yr.

Miss Deane, Mrs. Galea

Prerequisite: course 135 or 136, and Art 168A.

An advanced laboratory course in dance composition and production to provide students with an opportunity to apply the work given in course 135 and Art 168A.

131. Administration of Physical Education (Men and Women). (3) II.

Prerequisite: Physical Education 120.

Mr. Bovard

The scope of the field of physical education and its relation to modern education theory. Details of the organization of physical education activities, organization and classification of children, planning of school programs, arrangement and construction of equipment and the principles which govern these.

135. History of Dance and the Related Arts (Men and Women). (2) I, II.

Prerequisite: course 31 or the equivalent.

Mr. Lee

A study of the relation of music, costume, and dance in various periods.

136. History of Dance in America (Men and Women). (2) I.

Miss Deane, Mr. Lee

A study of dance in relation to the development of present American culture.

140. Physical Education Tests and Measurements (Men and Women).

(2) II.

Anthropometric measurements, cardiovascular and physiological ratings, physical efficiency, and motor ability tests. Common tests used in physical education; statistical method applied to physical education measurement.

149. Kinesiology (Men and Women). (3) I.

Miss Grunewald

Prerequisite: Zoölogy 35.

A study of the joint and muscular mechanism of movements, especially designed for women in teaching corrective physical education, physical therapy, and occupational therapy.

171. Organization of Athletics (Women). (2) I.

Miss Thompson

Prerequisites: Courses 120, 321A-321B.

Analysis of principles and policies involved in the conduct of desirable athletic programs for school and community groups.

172. Organization of Public Performances (Men and Women). (2) I.

Miss Deane

The programming and management of public performances in the school, community, U.S.O., and army camps. Consideration of their purpose, type and sources of material. The use of dance, music, lighting, costume, etc.

180. Administration of Community Recreation (Men and Women). (3) II.
Miss Hooper

A training course for leaders with emphasis on the management of recreation in communities, industrial and social organizations. The needs of women in industry are given special study.

182. Corrective Physical Education. (3) II.

Section 1 (Women).

Miss Grunewald

Section 2 (Men).

Mr. Johns

Prerequisite: course 149. Especially designed for teachers, nurses, physical therapy aides, and occupational therapists.

Study of body mechanics and of the causes and treatment of correctible deviations from the normal. Special emphasis is given individual program adaptations and corrective procedures.

183. Massage and Therapeutic Exercise (Women). (3) I. Miss Grunewald

Prerequisite: course 182.

Study of massage and therapeutic exercises applied in the treatment of disturbances of the cardio-vascular, nervous, muscular, and digestive systems, for teachers, nurses, physical therapy aides, and occupational therapists.

184. Muscle Training (Men and Women). (3) I.

Miss Grunewald

Special muscle-training techniques in the field of physical therapy, occupational therapy, and clinical practice.

185. Physical Activities for Rehabilitation (Men and Women). (2) II.

Miss Grunewald

Lectures and laboratory; for students interested in physical therapy and occupational therapy.

Special games and activities suitable for the rehabilitation of the physically handicapped.

190. Physiology of Exercise (Men and Women). (3) I.

Prerequisite: Physiology 1.

Mr. Bovard, Mrs. Johnson

A study of the effects of physical education activities on the human organism and the physiological bases for program construction. Basic course for understanding assignment of activities to individual needs.

191. Conditioning of Athletes and Care of Injuries (Men). (2) II.

Mr. Johns

Lecture, one hour; laboratory, three hours. Prerequisite: course 190.

Modern principles and practices in conditioning and care of athletes; individual variation and needs as to sleep, diet, health, and activity habits; care of injuries, including massage, physiotherapy, taping, and protective equipment.

192A. Administration of Health Education (Men and Women). (3) I.

Prerequisite: course 190.

Miss Harshberger, Mrs. Johnson

Health instruction in the elementary and secondary schools. A study of learning experiences directed toward the development of health knowledge, practices and attitudes and their function in improving health behavior.

192B. Administration of Health Education (Men and Women). (3) II.

Prerequisite: course 190.

Miss Harshberger, Mrs. Johnson

Health protection. A consideration of the problems, principles, and methods involved in the supervision of child health in schools, camps, and playgrounds.

193. Social Aspects of Health (Men and Women). (2) I.

Miss Harshberger

Not open to majors in physical education or to students who have credit for 192A, 192B. Designed for general students in the College of Letters and Science.

A general survey of health problems in the secondary school, with special emphasis on individual health and development as well as on the social aspects of living.

199A-199B. Problems in Physical Education. (1-4; 1-4) Yr.

Mr. Bovard, Miss Deane

GRADUATE COURSES**250A-250B. Seminar in Physical Education (Men and Women). (3-3) Yr.**

Prerequisite: the consent of the instructor.

Mr. Bovard

A study of the theory of physical education, a critical review of selected studies, literature, and practices.

276. Research in Physical Education (Men and Women) (2) I. Mr. Bovard

Prerequisite: the consent of the instructor.

The meaning, methods, and techniques of research procedure; applications of this training to the independent solution of a problem.

278. Research Problems (Men and Women). (2 to 4) I, II. Mr. Bovard

Prerequisite: the consent of the instructor.

For advanced students who have problems in organization, administration, or biological backgrounds of physical education.

PROFESSIONAL COURSES IN METHOD**321A-321B. Principles of Teaching Athletics (Women). (2-2) Yr.**

Prerequisite: course 32 or the equivalent.

Miss Thomson

A study of the technique and practice in the teaching of athletic activities with special reference to the planning of lesson units. Field work in officiating in local schools and recreation centers is required.

321C-321D. Principles of Teaching Dance (Women). (2-2) Yr.

Prerequisite: course 31 or its equivalent.

Miss Deane

A survey of the program in dance from kindergarten to university. Practice in dance fundamentals—intermediate.

330. Physical Education in the Elementary School (Men and Women). (3) I.

Miss Anderson

Prerequisite: junior standing, courses 11, 12, and 44, or the equivalent, and Education 111. Men may substitute Physical Education for Men 354, and 9 or 355, for courses 11 and 12. Required of all candidates for the General Elementary Credential. Each student must plan a program with two consecutive hours a week free for observation, between the hours 9 a.m. and 3 p.m.

354. The Technique of Teaching Elementary School Activities (Men). (2)
II. Mr. Frampton

The technique of teaching activities in the elementary school leading up to games of higher organization.

356A. The Technique of Teaching Athletic Activities (Men). (2) I.
The Staff

Prerequisite: courses 6, 7, 8, 9, and the consent of the instructor.

Track, rugby, and basketball.

356B. The Technique of Teaching Athletic Activities (Men). (2) II.
The Staff

Prerequisite: courses 6, 7, 8, 9, and the consent of the instructor.

Football, baseball, and soccer.

PHYSICS

- SAMUEL J. BARNETT, Ph.D., Professor of Physics.
 JAKOB BJERKNES, Ph.D., Professor of Meteorology.
 JORGEN HOLMBOE, M.Sc., Professor of Meteorology.
 JOSEPH KAPLAN, Ph.D., Professor of Physics (Chairman of the Department).
 E. LEE KINSEY, Ph.D., Professor of Physics.
 VERN O. KNUDSEN, Ph.D., Professor of Physics.
 JOHN MEAD ADAMS, Ph.D., Associate Professor of Physics.
 LAURENCE E. DODD, Ph.D., Associate Professor of Physics.
 JOSEPH W. ELLIS, Ph.D., Associate Professor of Physics.
 ROBERT W. LEONARD, Ph.D., Assistant Professor of Physics.
 MORRIS NEIBURGER, S.B., Assistant Professor of Meteorology.
 ✧ ARTHUR H. WARNER, Ph.D., Assistant Professor of Physics.
 NORMAN A. WATSON, Ph.D., Assistant Professor of Physics.
 R. EDWIN WORLEY, Ph.D., Assistant Professor of Physics.
 ♡ LEO P. DELSASSO, A.B., Instructor in Physics.
 JULE G. CHARNEY, A.B., Lecturer in Meteorology.
 CHARLES P. HEDGES, B.S., Lecturer in Meteorology.
 MARGARET WHITCOMB, M.A., Lecturer in Meteorology.
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- HARALD U. SVERDRUP, Ph.D., Professor of Oceanography, Scripps Institution of Oceanography.
 ROBERT D. FLETCHER, D.Sc., Research Associate in Meteorology.
 HENRY S. PENN, Ph.D., Research Associate in Physics.

Letters and Science List.—All undergraduate courses in physics and meteorology are included in the *Letters and Science List of Courses*. For regulations governing this list, see the CIRCULAR OF INFORMATION.

Preparation for the Major in Physics.—Required: Physics 1A, 1B, 1C, 1D, or their equivalents (in meritorious cases Physics 2A-2B may be accepted) with an average grade of C or higher; Chemistry 1A-1B; Mathematics CF, 3A, 3B, 4A, or their equivalents. Recommended: a reading knowledge of German and French.

The Major in Physics.—Twelve units of upper division physics, consisting of 105, 107A, 108B, 108C, and 110A; and 12 units chosen from other upper division courses in physics, Mathematics 119, 122A-122B, 125, 126, Chemistry 110, and Astronomy 117A-117B, 199. At least 8 of these latter 12 units must be courses in the Department of Physics.

Preparation for the Major in Physics-Meteorology.—Physics 2A-2B, or 1A, 1B, 1C, 1D; Mathematics CF, 8, 3A, 3B, 4A, or their equivalents. A reading knowledge of French and German is recommended.

The Major in Physics-Meteorology.—Physics 105, 112; Meteorology 102A, 104A, 106A-106B-106C; the remaining upper division courses may be chosen

✧ On leave for civilian war work.

♡ On leave for duty in the armed forces.

from other courses in meteorology, physics, or mathematics. The acceptable courses in mathematics are 119, 122A-122B, 124, 125; Astronomy 117A, Geography 113, 114 are also acceptable toward the major.

Laboratory Fees.—Courses 1A, 1B, 1C, 1D, 2A, 2B, 10C, 10D, \$6; 109, \$7; 107A, 107B, 108C, 113C, 114C, 116C, 116D, \$14; Meteorology 110A-110B, \$6. The student will, in addition, be held responsible for all apparatus lost or broken.

PHYSICS

LOWER DIVISION COURSES

Prerequisite for 1A, 1B, 1C, 1D: either (1) the high school course in physics, or (2) trigonometry and the high school course in chemistry. Prerequisite for course 2A-2B: (1) three years of high school mathematics, or (2) two years of high school mathematics and college algebra.

Physics 1A, 1B, 1D, and 1C constitute a two-year sequence in general physics which is required of, or recommended for, major students in physics and astronomy and of pre-chemistry and pre-engineering students. Physics 1A and 1B are required of students in architecture, and Physics 1A and either 1B, 1C, or 1D are required of major students in chemistry. Other students may elect any part of the course but at least two parts are necessary to meet the laboratory requirement for the degree of Associate in Arts or upper division standing. Physics 1A is prerequisite to any of the other courses in this sequence.

Students who have credit for courses 2A-2B, 4A-4B, or 10A-10B may receive additional credit of not more than $1\frac{1}{2}$ units for each of courses 1A and 1B, and not more than 2 units for each of courses 1C and 1D. In general, not more than 12 units of credit will be given for any amount of lower division work. Credit in excess of 12 units will be given only in exceptional cases, when approved by the department.

1A. General Physics: Mechanics of Solids. (3) I. Mr. Adams

1B. General Physics: Mechanics of Fluids, and Heat. (3) II. Mr. Dodd

Lectures and demonstrations, three hours; laboratory, two hours. Fee, \$6. Prerequisite: course 1A.

1C. General Physics: Electricity and Magnetism. (3) I
Mr. Dodd, Mr. Worley

Lectures, two hours; laboratory, three hours. Prerequisite: course 1A and a knowledge of elementary calculus. Fee, \$6.

1D. General Physics: Light and Sound. (3) I. Mr. Ellis

Lectures, two hours; laboratory, three hours. Prerequisite: course 1A. Fee, \$6.

2A. General Physics: Mechanics and Heat. (4) I, II.
Mr. Kinsey, Mr. Watson

Lectures and demonstrations, four hours; laboratory, two hours. Prescribed for premedical students. Fee, \$6.

2B. General Physics: Electricity and Magnetism, Light, and Sound. (4) I, II.
Mr. Worley, Mr. Kinsey

Lectures and demonstrations, four hours; laboratory, two hours. Prescribed for premedical students. Fee, \$6.

21. Supplementary Laboratory Courses in General Physics. (1)

Lower Division Staff (Mr. Ellis in charge)

These courses are intended primarily for students entering the University with partial credit in general physics and are part of the regular work of courses 1A, 1B, 1C, 1D, 2A, and 2B in the term or terms indicated for each. A fee of \$6 per term is charged in each course. Students should enroll under one or more of the following numbers:

21 (1A). Mechanics of Solids. I.

21 (1B). Mechanics of Fluids, and Heat. II.

21 (1C). Electricity and Magnetism. I.

21 (1D). Light and Sound. I.

21 (2A). Mechanics and Heat. I, II.

21 (2B). Electricity and Magnetism, Light, and Sound. I, II.

UPPER DIVISION COURSES

Prerequisite for all upper division courses: Physics 1A, 1B, 1C, 1D, or 2A-2B; Mathematics 3B, 4A; or the equivalents.

105. Analytic Mechanics. (3) II.

Mr. Watson, Mr. Worley

The statics and dynamics of particles and rigid bodies.

107A. Electrical Measurements. (3) I.

Mr. Leonard

Prerequisite: course 1C. Fee, \$14.

Laboratory exercises in the measurement of direct current quantities, with explanatory lectures on electricity and magnetism.

108A. Geometrical Optics and Modern Optical Instruments. (3) II.

Mr. Dodd

Lectures and demonstrations. Prerequisite: course 1D or 2B, or equivalent.

Geometrical methods applied to the basic optics of mirrors, prisms, and lenses. Applications to modern optical instruments.

108B. Physical Optics. (3) I.

Mr. Ellis

Lectures and demonstrations.

Wave motion, interference, diffraction, absorption, dispersion, polarization, and crystal optics.

108C. Physical Optics Laboratory. (1) I.

Mr. Worley, Mr. Watson

Fee, \$14.

109. Geometrical Optics Laboratory. (1) II.

Mr. Dodd

Prerequisite or concurrent: course 108A. Fee, \$7.

110A. Electricity and Magnetism. (2) I.

Mr. Barnett

The elementary mathematical theory, with a limited number of experimental demonstrations.

110B. Electricity and Magnetism. (3) II.

Prerequisite: course 110A.

A continuation of course 110A.

- 112. Heat. (3) I.** Mr. Adams
The thermal properties of matter with an introduction to thermodynamics.
- 113. Introduction to Spectroscopy and Quantum Theory. (3) II.** Mr. Ellis
- 113C. Spectroscopy Laboratory. (1) II.** Mr. Watson, Mr. Worley
Prerequisite or concurrent: course 113 or Astronomy 117B. Fee, \$14.
- 114A. Mechanics of Wave Motion and Sound. (3) II.**
Lectures and demonstrations. Mr. Knudsen, Mr. Watson
Vibration of particles and elastic bodies; sound sources; propagation in elastic media.
- 114B. Mechanics of Wave Motion and Sound. (3) II.**
Mr. Knudsen, Mr. Watson
Lectures and demonstrations. Prerequisite: course 114A.
Propagation of sound in gases; reflection, refraction, interference, and diffraction of sound; acoustic impedance; hearing; ultrasonics; tubes and horns.
- 115. Kinetic Theory. (3) II.** Mr. Adams
The classical kinetic theory of gases, with applications to viscosity, diffusion, and thermal conduction.
- 116A. Electronics. (3) II.** Mr. Leonard
Prerequisite: senior standing, and course 107A.
The properties of electrons; thermionic and photo-electric emission; the conduction of electricity in solids and gases; vacuum tubes and circuits.
- 116B. Electronics. (3) I.** Mr. Leonard
Prerequisite: course 116A.
A continuation of course 116A.
- 116C. Electronics Laboratory. (2) II.** Mr. Leonard
Prerequisite or concurrent: course 116A (or the consent of the instructor). Fee, \$14.
- 116D. Electronics Laboratory. (2) I.** Mr. Leonard
Prerequisite: courses 116A, 116C; course 116B (may be taken concurrently); or the consent of the instructor. Fee, \$14.
- 199A-199B. Special Problems in Physics. (2-2) Yr.** The Staff

GRADUATE COURSES

Courses 208 or 213, 210A, 212 or 215, and 220A are required of all candidates for the master's degree with major in physics.

210A-210B. Electricity and Magnetism; Advanced Course. (3-3) Yr.

Mr. Barnett

Open to graduate students who have taken 110A-110B, and to other graduate students with the consent of the instructor.

Electrostatics, electrodynamics, electron theory, magnetism, restricted theory of relativity, theory of radiation.

213. **Spectra and Structures of Diatomic and Polyatomic Molecules.** (4) I.
Mr. Ellis
- 220A. **Theoretical Mechanics.** (3) I. Mr. Kinsey
260. **Seminars in Physics.** (2 or 3)
For 1944: Advanced Quantum Mechanics. (3-3) Yr. Mr. Kinsey
- 290A-190B. **Research.** (1-6; 1-6) Yr. Mr. Kaplan in charge

METEOROLOGY***UPPER DIVISION COURSES****102A. Physics of the Higher Atmosphere.** (1½)

Prerequisite: Astronomy 117A or Physics 113, or equivalent preparation acceptable to the instructor.

Constitution of the atmosphere at various levels; the ozone layer; optical, electric, and magnetic phenomena; temperature and radiation; cosmic rays.

103. Interaction between the Sea and the Atmosphere. (1)

The heat balance between the ocean and the atmosphere; the theory of evaporation based on the turbulent transport of water vapor through the surface layer.

104A. Meteorological Physics. (1½)

Theory of radiation with particular emphasis on its meteorological applications.

105A-105B-105C. Synoptic Meteorology. (3-3-3)

The synoptic weather maps; world wide survey of meteorological elements; radiation, convection, evaporation, condensation, precipitation; the general circulation; tropical cyclones; extra-tropical disturbances; orographical influences; weather forecasting.

106A-106B-106C. Dynamic Meteorology. (2-2-2)

The thermodynamics of the atmosphere, including construction of aerological diagrams; elementary dynamics of the atmosphere; the interrelation between the fields of motion, mass, and pressure; dynamic stability, frictional effects, and turbulence; energy transformations, dynamics of the general circulation.

115A-115B-115C. Meteorological Laboratory. (3-3-3)

Fee, \$6 a term.

Meteorological observations; coding and decoding; map plotting; three-dimensional synoptic analysis; practice weather forecasting.

111. Meteorological Instruments and Observations. (3)

Lectures, laboratory exercises, and field observations in the measurements of the meteorological elements.

Special attention will be given the determination of conditions aloft by means of pilot balloons and radiosondes.

* In the year 1944 these courses will be given in special sessions, open only to students sent for training by the armed forces and by government agencies or to specially qualified civilian students.

POLITICAL SCIENCE

MALBONE W. GRAHAM, Ph.D., Professor of Political Science (Chairman of the Department).

✧ J. A. C. GRANT, Ph.D., Professor of Political Science.

CHARLES G. HAINES, Ph.D., Professor of Political Science.

FRANK M. STEWART, Ph.D., Professor of Political Science and Director of the Bureau of Government Research.

CHARLES H. TITUS, Ph.D., Professor of Political Science.

RUSSELL H. FITZGIBBON, Ph.D., Associate Professor of Political Science.

✧ H. ARTHUR STEINER, Ph.D., Associate Professor of Political Science.

✧ WINSTON W. CROUCH, Ph.D., Assistant Professor of Political Science.

DEAN E. MOHENY, Ph.D., Assistant Professor of Political Science.

✧ THOMAS P. JENKIN, Ph.D., Instructor in Political Science.

FOSTER H. SHERWOOD, Ph.D., Instructor in Political Science.

Letters and Science List.—All undergraduate courses in political science are included in the Letters and Science List of Courses. For regulations governing this list, see the CIRCULAR OF INFORMATION.

Preparation for the Major.—Course 8A-8B, or its equivalent, and one of the following: Political Science 10, 15, 31, 32, 34. Recommended: Economics 1A-1B, Geography 1A-1B, History 4A-4B, 5A-5B, 7A-7B, 8A-8B.

Students intending to select political science as a major subject are advised to take one course in political science throughout the year in each of the freshman and sophomore years.

The Major.—Twenty-four units in upper division courses, not more than 4 of which may be taken in courses approved by the department in anthropology, business administration, economics, geography, history, philosophy, psychology, or sociology. The work must be divided among the different fields of political science in accordance with the requirements of the department. A copy of the regulations may be obtained from the departmental adviser. The student must maintain an average grade of C or higher in upper division courses in political science.

Related Curricula.—For the Curriculum in Public Service and the Curriculum in International Relations, students are referred to the CIRCULAR OF INFORMATION.

LOWER DIVISION COURSES

3A-3B. American Government. (3-3) Beginning either term.

Mr. Stewart, Mr. McHenry, Mr. Sherwood

Students who have credit for American Institutions 101 will receive only one unit for Political Science 8A.

A study of principles and problems in relation to the organization and functions of the American system of government.

10. The Anglo-American Legal System. (3) I.

Mr. Haines

Prerequisite: sophomore standing.

The development of the English and Roman legal systems; elementary principles of the common law, as modified by statutes and judicial decisions.

✧ On leave for civilian war work.

✧ On leave for duty in the armed forces.

34. American State and Local Government. (3) II.

Mr. Stewart

Prerequisite: sophomore standing and course 3A-3B.

Development of state constitutions. The legislative, executive, and judicial departments in state government; popular methods of control; and relation between the state and local rural government, with special reference to California.

UPPER DIVISION COURSES

Prerequisite for all courses: course 3A-3B, or its equivalent.

110. History of Political Ideas. (3) II.

Mr. Sherwood

An exposition and critical analysis of the ideas of the major political philosophers and schools from Plato to Burke, with emphasis on the setting, the logical structure of their systems, and the significance of these ideas in terms of the contemporary scene.

113. American Political Theory. (3) I.

Mr. Sherwood

A survey of the development of American ideas concerning political authority from Cotton and Williams to Hoover and Roosevelt.

125. Foreign Relations of the United States. (3) I.

Mr. Sherwood

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) II.

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; current developments in such matters as boundary disputes, arbitration and conciliation, Pan-American conferences; Latin-American participation in the League of Nations.

128. World War II. (3) I.

Mr. Graham

A survey of the problems of grand strategy in the struggle of the United Nations against the Axis; the coordination of military, economic, and political efforts; strategic developments in the different theaters of the war.

143. Legislatures and Legislation. (2) I.

Mr. Titus

The functions of legislatures, the organization and procedure of typical legislative bodies, and the problems and principles of law making.

148. Public Relations. (2) I.

Mr. Titus

An analysis of principles, activities, problems, and distinctive types of organizations in the field of public relations.

151. The Governments of Latin America. (3) II.

Mr. Fitzgibbon

The governments of representative states: a study of constitutional development, political practices, and the elements of strength and weakness in contemporary governmental organization.

153. The Governments of the British Empire. (2) I.

Mr. McHenry

The constitutional and political relations of the imperial and Dominion governments; the governments of India, the crown colonies, the protectorates and the mandated territories.

156. Administrative Law. (3) II.

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.

157B. Constitutional Law. (3) I.

Mr. Haines

General principles of constitutional law, federal and state; relations and powers of the federal government and the states; limitations on the federal government and the protection accorded to individual rights under the American constitutional system.

183. Problems in Public Administration. (3) I.

Mr. Sherwood

In 1942-1943 this course will emphasize problems and techniques of governmental planning, public welfare, and finance administration. Attention will be given to the case method of study.

185. Public Personnel Administration. (3) II.

Mr. Stewart

Evolution of public employment policies; a study of the principles and practices of public service personnel, including recruitment, promotion, morale and discipline, retirement, classification, compensation, unions of employees, organization of the personnel agency, and training for public employment.

AMERICAN INSTITUTIONS

101. American Institutions. (2) I, II.

Mr. Titus, Mr. Fitzgibbon

This course satisfies the "Requirement of American Institutions." (See the CIRCULAR OF INFORMATION.) It may not be applied toward the political science major, and is not open to students who have credit for Political Science 3A.

The fundamental nature of the American constitutional system and of the ideals upon which it is based.

PSYCHOLOGY

KNIGHT DUNLAP, Ph.D., Professor of Psychology.

FRANKLIN FEARING, Ph.D., Professor of Psychology.

GRACE M. FERNALD, Ph.D., Professor of Psychology.

KATE GORDON MOORE, Ph.D., Professor of Psychology.

ROY M. DORCUS, Ph.D., Associate Professor of Psychology (Chairman of the Department).

☞ JOSEPH A. GENDERELLI, Ph.D., Associate Professor of Psychology.

HOWARD C. GILHOUSEN, Ph.D., Associate Professor of Psychology.

ELLEN B. SULLIVAN, Ph.D., Associate Professor of Psychology.

FRANK C. DAVIS, Ph.D., Assistant Professor of Psychology.

*S. CAROLYN FISHER, Ph.D., Assistant Professor of Psychology.

LAURENCE A. PETEAN, Mus.M., Ph.D., Associate Professor of Music and University Organist.

EVELYN GENTRY CALDWELL, Ph.D., Research Associate in Psychology.

Letters and Science List.—All undergraduate courses in psychology are included in the Letters and Science List of Courses. For regulations governing this list, see the CIRCULAR OF INFORMATION.

Preparation for the Major.—Required: courses 21 and 22; and a coherent group of courses totaling 16 or more units, chosen with regard to the student's proposed direction of major work in psychology and the ultimate field of application. The list of approvable groups may be obtained from the adviser or from the chairman of the department.

The Major.—Course 106A or 107A, and 15 additional units in upper division psychology; the remaining 6 units may be in upper division courses in psychology, or, subject to the approval of the department, in related courses in other departments.

Laboratory Fees.—Courses 106A–106B, 107A–107B, 150B, \$3.50 a term.

LOWER DIVISION COURSES

21. Introductory Psychology. (3) I, II.

Mrs. Moore 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. Fearing 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 function of the sense organs.

23. Social and Mental Adjustment. (3) I.

Mr. Dunlap

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.

* Absent on leave to June 30, 1944.

☞ On leave for civilian war work.

UPPER DIVISION COURSES

Courses 21 and 22 are normally prerequisite to all upper division courses. Exceptions to the requirements are made only for courses for which the exceptions are specifically stated.

101. Principles of Psychology. (3) I, II. Mr. Fearing

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.

106A-106B. Experimental Psychology. (3-3) Yr. Mr. Dunlap, Mr. Dorcus

Lectures and demonstration, two hours; Laboratory, two hours; assigned readings. Fee, \$3.50 a term.

Methods, techniques, and typical results in experimental research in psychology.

107A. Mental Measurements. (3) I, II. Mr. Davis, Miss Sullivan

Prerequisite: course 23 may be accepted in place of course 22. Fee \$3.50. A study of the construction, techniques of application, and interpretation of tests and scales. Practice in statistical procedures applicable to data derived from tests.

107B. Mental Measurements. (3) II. Miss Sullivan

Prerequisite: course 107A. Fee, \$3.50.

Continuation of the study of principles of measurement, with practice in the construction, administration, and scoring of standardized tests and scales, and their diagnostic interpretation.

108. Physiological Psychology. (3) I. Mr. Fearing

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. Davis, Mrs. Moore

Adolescence, maturation, habit formation, formal and informal training.

112. Child Psychology. (3) I. Miss Fernald

The psychology of the infant and child, with special reference to mental development.

126. Contemporary Psychology. (2) II. Mr. Fearing

The variant tendencies in current psychology, including critical examination of the more important so-called "schools" of psychology.

135. Imagination and Thought. (2) I. Mrs. Moore

Imagination, memory, anticipatory and constructive thinking.

***137A-137B. Human Learning. (2-2) Yr. Mr. Davis**

A study of experimental methods and results, with consideration of leading theories.

* Course 137B to be given spring term; 137A to be given summer term, 1944.

*145A-145B. **Social Psychology, General Course.** (2-2) Yr. Miss Fisher

147. **The Psychological Method in the Social Sciences.** (3) I. 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

Experimental methods and results in the study of the behavior of the lower animals.

166A. **Clinical Psychology.** (2) I, II. Miss Fernald, Miss Sullivan

Lectures and demonstration.

A study of the problems of the child, including discussion of physical and mental abnormalities and deficiencies.

166B. **Clinical Psychology.** (2) I. Miss Fernald

Lecture, one hour; clinical work, three hours. Prerequisite: courses 107A and 166A, or the equivalent preparation approved by the instructor.

Special emphasis is placed on corrective and preventive methods.

168. **Abnormal Psychology.** (3) II. Mr. Dorcus

Prerequisite: recommended: course 108, or Zoölogy 35 or 106. Students may be required, early in the term, to demonstrate an acquaintance with the elementary facts of structure and function of the nervous system.

Disorders of sensation, perception, feeling, and thought; their nature, causation, effects on life, and amelioration.

172A-172B. **Psychology of Music. (3-3) Yr. Mr. Petran

175. **Psychology of Religion.** (3) I. Mr. Dunlap

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. The function of religion in the war situation.

177. **Psychology and Art.** (3) I. Mrs. Moore

Problems of the appreciation of the materials and ideas of the fine arts, with special reference to the psychological processes of imagination, feeling, and emotion.

GRADUATE COURSES

*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. Gilhousen

* Course 145A to be given summer term; 145B not to be given either term.

** Course 172A to be given, summer term, 1944; 172B not to be given either term.

* Course 215A to be given, summer term; 215B not to be given either term.

***217A-217B. Clinical Psychology. (2-2) Yr.**

Miss Fernald

The prevention of psychological disorders of childhood and adolescence, and their remedy.

***218A-218B. Propaganda, Public Opinion and Morale. (2-2) Yr.**

Mr. Fearing

Particular attention is given to the psychology of pressure groups, psychological factors underlying democracy and fascism, and the problems and methods in the fields of propaganda analysis, public opinion, and morale.

***255A-255B. Seminar in Social Psychology. (3-3) Yr.**

Mr. Fearing

278A-278B. Research in Psychology. (3-6; 3-6) Yr.

Mr. Gilhousen, Mrs. Moore

PUBLIC HEALTH AND PUBLIC HEALTH NURSING

For courses in Public Health and in Public Health Nursing, see under Department of Bacteriology.

^o Course 217B to be given, spring term, 1944; 217A not to be given either term.

^{oo} Course 218A to be given, summer term, 1944; 218B not to be given either term.

* Course 255A to be given, summer term, 1944; 255B not to be given either term.

SOCIAL SCIENCE

The following courses, organized to meet the need for objective and critical discussion of the issues of the war and the peace, are sponsored by the departments of Economics, Geography, History, Philosophy, Political Science, and Psychology.

Prerequisites and Credit.—There are no prerequisites for these courses. They carry either upper or lower division credit, depending on the classification of the student at the time the course is taken.

1. Factors and Issues in the Second World War. (2) I.

Mr. Olmsted in charge

Lectures by members of the social science and allied departments on the issues on which the war is being fought, and on the general factors affecting its prosecution.

2. Problems of the War and the Peace. (2) II.

Mr. Olmsted in charge

Lectures on the conduct of the war and on the problems of the war and postwar periods with special reference to the United Nations and the United States.

SOCIOLOGY

For courses in Sociology, see under Department of Anthropology and Sociology.

SPANISH AND ITALIAN†

CÉSAR BARJA, Doctor en Derecho, Professor of Spanish.

LAURENCE DEANE BAILIFF, Ph.D., Associate Professor of Spanish.

HERMENEGILDO CORBATÓ, Ph.D., Associate Professor of Spanish.

MANUEL PEDRO GONZÁLEZ, Ph.D., Associate Professor of Spanish-American Literature.

ERNEST H. TEMPLIN, Ph.D., Associate Professor of Spanish.

MARION ALBERT ZETTLIN, Ph.D., Associate Professor of Spanish (Chairman of the Department)

*JOHN A. CROW, Ph.D., Assistant Professor of Spanish.

ANNA KRAUSE, Ph.D., Assistant Professor of Spanish.

CHARLES SPERONI, Ph.D., Assistant Professor of Italian.

MARIA L. DE LOWTHER, M.A., Associate in Spanish.

SYLVIA N. RYAN, M.A., Associate in Spanish.

Letters and Science List.—All undergraduate courses in Spanish, Italian, and Portuguese except Spanish 10 are included in the Letters and Science List of courses. For regulations governing this list, see the CIRCULAR OF INFORMATION.

Preparation for the Major.—(1) Courses 1, 2, 9 (or 3 and 4), and 20 or 25A-25B, or the equivalent to be tested by examination. (2) 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. (3) English 1A-1B. (4) A minimum of two years of a second foreign language in high school, or of two terms at the college level, or English 36A-36B, or History 8A-8B. This requirement must be met before entering upon the senior year.

NOTE.—Students who have not completed course 20 or 25A-25B with grade A or B in the lower division must take 101A-101B.

The Major.—Required: 24 units of upper division courses, including 102A-102B and 116A-116B. The remaining units may include not more than 4 units of upper division work in French, Italian, or Latin literature, or may be completed from courses 101, 104, 108, 109, 110, 114, 115, 124, 134, and Portuguese 101B. Students who desire to satisfy the major requirement specializing in the Spanish-American field may do so by completing courses 102A-102B, 104A-104B, 114, 116A-116B, 124, and 134.

Students who fail to maintain at least an average grade of C in the Spanish courses taken in the upper division will, upon approval of the Dean of the College of Letters and Science, be excluded from the major in Spanish.

The department recommends as a supplementary choice among the free electives: (1) history of the country or countries most intimately connected with the major; (2) additional study in Latin and English literature; (3) French, German, Greek, and Italian language and literature; (4) the history of philosophy.

Two years of high school Latin, or the equivalent, are prerequisite to candidacy for the master's degree in Spanish.

* Absent on leave, 1943-1944.

† The University of California at Los Angeles does not offer a major in Italian. Students wishing to satisfy the requirement for a major in Italian are referred to the CIRCULAR OF INFORMATION, Departments at Berkeley.

SPANISH**LOWER DIVISION COURSES**

The prerequisites for the various lower division courses are listed under these courses. Students whose high school record seems to warrant it may by examination establish their right to take a more advanced course upon recommendation of the instructor.

1. Elementary Spanish. (4) I, II.

Miss Ryan in charge

This course corresponds to the first two years of high school Spanish.

2. Elementary Spanish. (4) I, II.

Miss Ryan in charge

Prerequisite: course 1 or two years of high school Spanish or Spanish S1 in a summer session with satisfactory grade.

3. Intermediate Spanish. (4) I, II.

Miss Krause in charge

Prerequisite: course 2 or three years of high school Spanish.

4. Intermediate Spanish. (4) I, II.

Miss Krause in charge

Prerequisite: course 3 or four years of high school Spanish.

8A-8B-8C-8D. Spanish Conversation. (1 unit each term). Beginning each term.

Mr. Bailiff in charge

The class meets two hours weekly. Open to students who have completed course 2 or its equivalent with grade A or B.

10. Commercial Spanish. (4) I.

Mr. González

Prerequisite: course 3 or four years of high school Spanish. Required of all majors in business administration who elect Spanish to fulfill their language requirement. Not on the Letters and Science List of Courses.

25A-25B. Advanced Spanish. (3-3) Yr.

Mr. Corbató, Miss Krause, Mrs. Lowther

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, Mr. Corbató

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.

UPPER DIVISION COURSES

Prerequisite: 16 units of lower division Spanish or the equivalent.

Major students who enter the upper division without course 20 or 25A-25B must take 101A-101B.

101A-101B. Oral and Written Composition. (3-3) Yr.

Miss Krause, Mrs. Lowther, Mr. Templin

102A-102B. Survey of Spanish Literature to 1900. (3-3) Yr.

Mr. Templin, Mr. Zeitlin

Prerequisite: course 42A-42B. Required of major students in Spanish.

104A-104B. Survey of Spanish-American Literature. (3-3) Yr.

Lectures and reading.

Mr. Crow, Mr. González

A study of the principal authors of Spanish America.

108A-108B. Spanish Literature from 1850-1898. (2-2) Yr.

Mr. Barja, Mr. Corbató

A study of Spanish Realism in the second half of the nineteenth century.

110A-110B. Contemporary Literature. (2-2) Yr.

Mr. Templin

Reading and discussion of contemporary writers.

116A-116B. Advanced Composition. (3-3) Yr.

Mr. Bailiff, Mr. Corbató

Required of Spanish majors.

199A-199B. Special Studies in Spanish. (1-3; 1-3) Yr.

The Staff

Prerequisite: senior standing, at least 10 units of upper division Spanish, and the consent of the instructor in the field selected for special study.

GRADUATE COURSES***205A-205B. Prose Masterpieces of the Sixteenth and Seventeenth Centuries.**

(2-2) Yr.

Mr. Barja, Mr. Templin

230. Ballads. (2) I.

Mr. Templin

234. The Modernista Movement in Spanish America. (2) II.

Mr. González

Prerequisite: course 104B, 114, or equivalent preparation acceptable to the instructor.

290A-290B. Special Study and Research. (2-6; 2-6) Yr.

The Staff

PROFESSIONAL COURSE IN METHOD**370. The Teaching of Spanish. (3) I.**

Mrs. Lowther

Required of all candidates for the general secondary credential whose major subject is Spanish. To be taken concurrently with Education 370, or in the last half of the senior year.

ITALIAN**LOWER DIVISION COURSES****2. Elementary Italian. (4) I.**

Mr. Speroni

Prerequisite: course 1, or two years of high school Italian.

4. Intermediate Italian. (4) I.

Mr. Speroni

Prerequisite: course 3, or four years of high school Italian.

* All candidates for the degree of Master of Arts must offer at least two years of high school Latin, or the equivalent.

UPPER DIVISION COURSE

Sixteen units of lower division courses in Italian are required for admission to any upper division course. All upper division courses are conducted mainly in Italian.

†199A-199B. *Special Studies in Italian.* (1-3; 1-3) Yr. Mr. Speroni

Prerequisite: sixteen units of lower division Italian, or the equivalent, and the consent of the instructor.

PORTUGUESE**LOWER DIVISION COURSE**

2. *Elementary Portuguese.* (4) I.

Mr. Zeitlin

Prerequisite: course I or two years of high school Portuguese.

† To be given if a sufficient number of students enroll.

SUBJECT A: ENGLISH COMPOSITION

CARL SAWYER DOWNES, Ph.D., Assistant Professor of English, Chairman,
Committee on Subject A.

✧ JAMES K. LOWERS, M.A., Supervisor of Instruction in Subject A.

VIVIEN T. FURMAN, M.A., Acting Supervisor of Instruction in Subject A.

ELLA O. HUTCHINS, M.A., Associate in Subject A.

WILLIAM B. HOLTHERR, B.A., Associate in Subject A.

Subject A. (No credit) I, II.

The Staff

Fee, \$10.

Three hours weekly for one term. 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 term immediately following this failure, the course in Subject A. Sections are limited to thirty students. For further details, see the CIRCULAR OF INFORMATION.

Training in correct writing, including drill in sentence and paragraph construction, diction, punctuation, grammar, and spelling. Weekly compositions and written tests on the text.

✧ On leave for duty in the armed forces.

ZOÖLOGY

BENNET M. ALLEN, Ph.D., Professor of Zoölogy (Chairman of the Department).

✧ ALBERT W. BELLAMY, Ph.D., Professor of Zoölogy.

LOYE HOLMES MILLER, Ph.D., Professor of Biology, Emeritus.

GORDON H. BALL, Ph.D., Associate Professor of Zoölogy.

RAYMOND B. COWLES, Ph.D., Associate Professor of Zoölogy.

EDGAR L. LAZIER, Ph.D., Associate Professor of Zoölogy.

SARAH ROGERS ATSATT, Ph.D., Assistant Professor of Zoölogy.

BORIS KRICHESKY, Ph.D., Assistant Professor of Zoölogy.

A. MANDEL SCHECHTMAN, Ph.D., Assistant Professor of Zoölogy.

ROBERT C. STEBBINS, Ph.D., Instructor in Zoölogy.

TZE TUAN CHEN, Ph.D., Lecturer in Zoölogy.

ELLY M. JAKOBSEN, Ph.D., Research Associate in Zoölogy.

HERBERT S. JENNINGS, Ph.D., Research Associate in Zoölogy.

MARION L. QUEAL, Ph.D., Research Associate in Zoölogy.

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 the CIRCULAR OF INFORMATION.

Preparation for the Major.—Zoölogy 2, 14, 15, and one year of college chemistry, preferably 1A-1B. French and German are recommended.

The Major.—Eighteen units of upper division work in zoölogy and 6 units of upper division work chosen from zoölogy or from approved *related* courses in anthropology, bacteriology, botany, chemistry, entomology, home economics, mathematics, paleontology, physics, or psychology. Of the 18 upper division units in zoölogy at least 4 units must be taken in each of the three following groups of courses:

Group 1: Courses 101, 103, 111, 118, 130, 131.

Group 2: Courses 104, 105, 106, 107, 107C, 111C, 111H.

Group 3: Courses 110, 112, 113, 113C, 113D.

Curriculum for Medical Technicians.—For details see the ANNOUNCEMENT OF THE COLLEGE OF LETTERS AND SCIENCE, LOS ANGELES.

Laboratory Fees.—Zoölogy 2, \$3.50; 4, \$6; 14, \$2; 15, \$7; 16, 35, 105, 131, 133, \$3.50; 106, \$8.50; 107C, \$6; 111C, \$3.50; 112, \$2.50; 115C, \$3; 199A, 199B, \$3.50.

ZOÖLOGY

LOWER DIVISION COURSES

2. General Zoölogy. (3) I.

Mr. Cowles

Lectures, two hours; laboratory, three hours. Prerequisite: course 15. Fee, \$3.50.

✧ On leave for civilian war work.

4. Microscopical Technique. (2) I, II.

Mr. Lazier

Laboratory, six hours; assigned readings. Prerequisite: high school chemistry and course 15, or the consent of the instructor. Fee, \$6.

The preparation of tissues for microscopical examination.

14. Elementary Embryology. (2) I, II.

Mr. Schechtman

Lecture, one hour; laboratory, three hours. Prerequisite: course 15. Fee, \$2.

An introduction to embryology with emphasis on the vertebrates.

15. Introductory Zoölogy and Physiology. (5) I, II.

Mr. Schechtman, Mr. Lazier

Lectures, three hours; laboratory, six hours. Prerequisite: Chemistry 1A or 2A. Fee, \$7.

A combination of courses 1 and 13, offered previously.

16. Applied Human Physiology. (2) I.

Miss Atsatt

Lectures, two hours; laboratory, three hours. Prerequisite: course 15. Fee, \$3.50.

35. General Human Anatomy. (3) I.

Miss Atsatt

Lecture, two hours; laboratory, three hours. Prerequisite: course 15. Fee, \$3.50.

UPPER DIVISION COURSES

103. Experimental Zoölogy. (2) I.

Mr. Schechtman

Lectures and reports on articles in scientific journals. Prerequisite: courses 1, 2, 14, or the consent of the instructor.

Factors governing cell-differentiation; a survey of the results of experimental embryology, transplantation, regeneration, and tissue culture.

105. Mammalian Embryology. (3) II.

Mr. Allen

Lecture, one hour; laboratory, six hours. Prerequisite: courses 14 and 15. Fee, \$3.50.

Emphasis on man, rat, and pig.

106. Comparative Anatomy of the Vertebrates. (4) I.

Mr. Lazier, Mr. Stebbins

Lecture, two hours; laboratory, six hours. Prerequisite: courses 2, 14, 15. Fee, \$8.50.

A study of the structural relationships of the vertebrates. Dissection of the elasmobranch, amphibian, and mammal.

111. Parasitology. (2) II.

Mr. Ball

Prerequisite: courses 1, or 15.

General discussion of the biological aspects of parasitism and of the animal parasites of man and the domestic animals.

111C. Parasitology Laboratory. (2) II.

Mr. Ball

Prerequisite or concurrent: course 111. Fee, \$3.50.

111H. Laboratory Aide Training in Parasitology. (2) II.**Mr. Ball****Prerequisite:** course 111C.

Training in identification of animal parasites of man; designed particularly for persons intending to become laboratory technicians.

112. Advanced Invertebrate Zoölogy. (4) I.**Mr. Stebbins**

Lectures, two hours; laboratory and field, six hours. Prerequisite: courses 2, 15. **Fee, \$2.50. Morphology, habits, habitats, and life histories of both marine and fresh water invertebrates, with especial reference to local faunas.**

118. Endocrinology. (2) II.**Mr. Allen**

Prerequisite: course 15. **Lectures and reports on articles in scientific journals.**

199A-199B. Problems in Zoölogy. (2-2) Yr.**The Staff**

Prerequisite: course 15, with such special preparation as the problem may demand. **Fee, \$3.50 a term.**

GRADUATE COURSES**251A-251B. Seminars in Ecology.****Section 1. Vertebrates. (1) I.****Mr. Cowles****252A-252B. Seminars in Endocrinology.****Section 1. Growth and Development. (1) II.****Mr. Allen****253A-253B. Seminars in Genetics and Evolution. (2-1) Yr.****Mr. Chen****254A-254B. Seminars in Experimental Zoölogy. (2-2) Yr.****Mr. Schechtman****255A-255B. Seminars in Protozoölogy and Parasitology. (2) II.****Mr. Ball.****290A-290B. Research in Zoölogy. (2-6); 2-6) Yr.****The Staff**

General Bulletins, and Bulletins Referring Primarily to the Colleges, Schools, and Departments of the University at Berkeley and Davis

The Announcement of Courses of the University of California, Berkeley: courses of instruction in the departments at Berkeley. Price, 10 cents.

The Circular of Information of the University of California (primarily for those interested in the Undergraduate Division at Berkeley): general information about the University, its organization, the requirements for admission to undergraduate status, for the degree of Associate in Arts, and for the bachelor's degree in the colleges of Letters and Science, Agriculture, Chemistry, and Engineering, and in the School of Business Administration; requirements for certificates in the several curricula, and students' fees and expenses. Price, 10 cents.

The Prospectus of the College of Agriculture: general information concerning the College of Agriculture at Berkeley, Davis, Los Angeles, and elsewhere; its organization, requirements for admission, degrees, etc.

The Annual Report of the College of Agriculture and the Agricultural Experiment Station.

The Bulletins and Circulars of the Agricultural Experiment Station.

The Announcement of the School of Business Administration.

The Announcement of the School of Education, Berkeley.

The Announcement of the College of Engineering.

The Announcement of the Department of Forestry.

The Announcement of the Graduate Division, Northern Section.

The Announcement of the School of Jurisprudence.

The Announcement of the School of Librarianship.

The Announcement of the School of Optometry.

The Announcement of the Department of Social Welfare.

The Catalogue of Officers and Students, Section I (Berkeley Departments).
Price, 60 cents.

The Annual Commencement Programme (at Berkeley), containing the list of degrees conferred, scholarships, prizes, and other honors.

The President's Biennial Report.

The Annual Register. Price, \$1.00.

The Bulletins and Circulars of the University Extension Division.

Bulletins Referring Primarily to Schools and Colleges of the University in San Francisco

The Announcement of the College of Dentistry.

The Announcement of the Medical School.

The Announcement of the School of Nursing.

The Announcement of the College of Pharmacy.

The Announcement of the Hastings College of the Law.

The Announcement of the California School of Fine Arts.