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CATALOGUE AND
ANNOUNCEMENT OF COURSES
1922-1923

APRIL, 1922

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EXAMINATION AND REGISTRATION DAYS

1922

Tuesday, September 5—Entrance and Scholarship Examinations begin.
9 A.M. English.
2 P.M. Elementary Algebra.

Wednesday—
9 A.M. Plane Geometry.
2 P.M. American History.

Thursday—
9 A.M. Trigonometry and Solid Geometry.
2 P.M. Advanced Algebra.

Friday—
9 A.M. Psychological Examination.

Saturday—
9 A.M. Chemistry.

Monday, September 11—Registration of previously enrolled students, 8—12 A.M.

Tuesday, September 12—Registration of new students, 8—12 A.M.
To avoid confusion on registration days it is requested that students whose names begin with A to L present themselves between 8 and 10; those from M to Z between 10 and 12.

Wednesday, Sept. 13—
8 A.M. Regular class work begins.
11:30 A.M. Address to new students by the President of the University.
### Calendar 1922 - 1923

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The Board of Regents

OFFICERS OF THE BOARD

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1411 Punahou Street.

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2627 Kalakaua Ave.

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University Farm, Manoa Valley.

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1611 Keamoku St.

Superintendent of Dining Hall,
3134 Hobron Ave.

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P.O. Box 3114.

STANDING COMMITTEES OF THE FACULTY.
1922-1923.

ENTRANCE AND ADVANCED STANDING:
Professors Andrews, Dean and Keller.

GRADUATE WORK:
Professors Adams, Edmondson and Wrenshall.

PHYSICAL EDUCATION AND MILITARY DRILL:
Colonel Clarke and Professors Keller and Wrenshall.

PUBLICITY AND PUBLICATIONS:
Professors Crawford, Donagho and Andrews.

RESEARCH:
Professors Edmondson, Leebriick and Krauss.
THE UNIVERSITY OF HAWAII

HISTORY.

By act of its 1907 Legislature the Territory of Hawaii created an institution of higher education under the name of The College of Agriculture and Mechanic Arts of the Territory of Hawaii. This name was changed by a subsequent Legislature to The College of Hawaii. As its original name indicated this College was a Land Grant College benefiting financially by the Second Morrill Act of 1890 and the Nelson Amendment of 1907. Being a Territory, Hawaii had no grant of lands under the original Morrill Act of 1862. The College received from the Federal Government fifty thousand dollars annually, applied only to instruction in agriculture, the mechanic arts, the English language, and the various branches of mathematical, physical, natural and economic science, with special reference to their applications in the industries of life, and to the facilities for such instruction.

In its first years the College was housed in temporary buildings on the grounds of the McKinley High School, where the first classes were organized in the spring of 1908. Beginning with the fall of 1912 the College occupied the new permanent building in Manoa Valley, where some ninety acres had been set aside by the Territory for use of the College.

The first baccalaureate degrees were awarded in 1912, the first advanced degree, Master of Science, in 1914, and the first honorary degrees in 1919.

The programs of study were largely scientific and adapted to fit young men and women for practical work in applied science. With this College firmly established it was deemed wise to lay the foundations for a wider range of collegiate work in Hawaii by establishing a University whose charter should be sufficiently inclusive to provide for all future needs. The 1919 Legislature of the Territory of Hawaii therefore granted the following charter:

ACT 203.

(S. B. No. 76.)

AN ACT TO ESTABLISH A UNIVERSITY OF HAWAII.

Be it Enacted by the Legislature of the Territory of Hawaii:

SECTION 1. There is hereby established a university of Ha-
waii which shall consist of the college of agriculture or mechanic arts heretofore known and designated as the College of Hawaii, hereafter to be designated as the college of applied science, a college of arts and sciences and such other departments as may from time to time be established.

Section 2. The affairs of the University of Hawaii shall be under the general management and control of a board of regents consisting of seven members of which the president of the university, who shall act as secretary of the board, and the president of the board of agriculture and forestry shall be members ex-officio, and the other five members shall be appointed by the governor of the Territory of Hawaii as by law provided. The regents shall be residents of the Territory of Hawaii, and the appointed members shall be appointed for terms of five years or the unexpired periods thereof in such manner that the term of one regent shall expire at the close of the 30th day of April each year. Such terms shall begin on the first day of May in each year, and the terms of the regents of the College of Hawaii as of June 30, 1919, in the order of their appointments, shall continue as terms of appointments as regents of the University of Hawaii, to expire immediately preceding the first day of May in each of the five years beginning with 1921.

Section 3. The board of regents shall have general management and control of the affairs of the university. It shall have the power to appoint a treasurer and such other officers as it deems necessary, and to require them to give bonds in such amounts as it may prescribe and in the form prescribed by law for bonds of public officers. It shall have power to purchase or otherwise acquire lands, buildings, appliances and other property for the purposes of the university and expend such sums of money as may be from time to time placed at the disposal of the university from whatever source. All lands, buildings, appliances and other property so purchased or acquired shall be and remain the property of the Territory of Hawaii to be used in perpetuity for the benefit of the university.

The official name of the board of regents shall be board of regents, University of Hawaii, and the board shall adopt and use a common seal by which all official acts shall be authenticated.

Section 4. The grants of moneys and the purposes of said grants authorized by the Act of Congress approved August 30, 1890, known as the Second Morrill Act, providing for the endowment and maintenance of colleges for the benefit of agriculture and mechanic arts, and by the Acts of Congress approved
March 2, 1887, and March 16, 1906, providing for agricultural experiment stations in connection with colleges of agriculture and mechanic arts, and by any other Act or Acts of Congress for similar purposes, heretofore assented to in behalf of the College of Hawaii, are hereby reassented to in behalf of the college of applied science as an integral part of the University of Hawaii.

Section 5. The purposes of the university are to give thorough instruction and conduct researches in, and disseminate knowledge of, agriculture, mechanic arts, mathematical, physical, natural, economic, political and social sciences, languages, literature, history, philosophy, and such other branches of advanced learning as the board of regents may from time to time prescribe, and to give such military instruction as the board of regents may prescribe and the federal government require. The standard of instruction shall be equal to that given and required in similar universities on the mainland of the United States, and upon the successful completion of the prescribed courses the board of regents is authorized to confer a corresponding degree upon all students who shall become entitled thereto.

Section 6. No person shall, because of sex, color or nationality, be deprived of the privileges of this institution.

Section 7. The faculties of the university shall be under the direction of a president who shall be appointed by the board of regents of which he becomes ex-officio a member. The board of regents shall appoint such deans, directors, other members of the faculties, and employees as may be required to carry out the purposes of the institution, prescribe their salaries and terms of service, where such salaries and terms of service are not specifically fixed by legislative enactment, make and enforce rules governing sabbatical leaves with or without pay, consistent with the practice of similar institutions on the mainland, and notwithstanding the laws of the Territory of Hawaii relating to vacations of the officers and employees of the Territory.

Section 8. The board of regents shall have the authority to sue in its official name and shall be subject to be sued only in the manner provided for suits against the Territory of Hawaii.

Section 9. Moneys appropriated by the legislature for the University of Hawaii shall be payable by the territorial treasurer, upon warrants issued by the territorial auditor, upon vouchers approved by the board of regents. All moneys received by or in behalf of the board of regents of the university, other than those received from the United States government or other govern-
ments, shall be paid into the territorial treasury, and all such moneys are hereby appropriated for the use of the university. The board of regents shall cause to be kept suitable books of accounts, and shall annually submit to the governor, to be by him submitted to the legislature, a statement showing its receipts from all sources, and expenditures for all purposes.

Section 10. All obligations, rights, privileges, and property whatsoever belonging or appertaining to the board of regents of the College of Hawaii or the College of Hawaii are hereby transferred to the board of regents of the University of Hawaii and the University of Hawaii.

Section 11. Chapter 28, sections 330 to 336, inclusive, of the Revised Laws of Hawaii, 1915, are hereby repealed.

Section 12. This act shall take effect on July 1, 1920.

Approved this 30th day of April, A.D. 1919.

C. J. McCarthy,
Governor of the Territory of Hawaii.

Organization.

Pursuant to this act of the Legislature The University of Hawaii was organized on July 1, 1920, with two colleges. With some changes the programs of study of the College of Hawaii were continued in the College of Applied Science, and a College of Arts and Sciences was organized with programs of study leading to the Bachelor of Arts degree. The control passed to the Board of Regents of the University of Hawaii consisting of the Board of Regents of the College as of June 30, 1920, with the addition of two ex officio members, the President of the Board of Agriculture and Forestry and the President of the University.

Location, Grounds and Buildings.

The University, advantageously situated in Manoa Valley, one of the most attractive of Honolulu's residential districts, is about two and one-half miles from the business center, and but a short walk from the Manoa Valley car-line.

Of the ninety acres which comprise the University grounds, some fifteen are planted to crops and several large fields are used for pasturage. At the rear of the grounds flows the Manoa Stream, which furnishes adequate water for irrigation and experimental studies in irrigation, and may be made to provide for work in hydraulics.
The J. P. Cooke athletic field provides facilities for football, baseball, and track athletics. An asphalt tennis court has also been provided. Through the enterprise of the students in the Fall of 1920 a fund was raised for the construction of a swimming pool. A 25-yard pool, and locker buildings for men and women are available for students of the University.

Hawaii Hall, the first of the University buildings, is of reinforced concrete, three stories in height, and contains some sixty lecture rooms, class rooms, offices and laboratories. In this building are the administrative offices, the library, and the class rooms and laboratories of some of the departments. The new fireproof building for chemistry, physics, and sugar technology contains the laboratories, classrooms, and offices for those departments. A smaller concrete building houses the laboratory for experimental engineering. A dormitory for men with rooms for twenty-six students and a proctor, and a dining hall have been recently erected.

The Legislature of 1919 placed the Honolulu Aquarium under the care of the College of Hawaii. The Charles M. Cooke Estate provided funds for the erection of a laboratory for marine zoology in connection with the Aquarium. Laboratory classes in zoology are held in this seaside building, which is also equipped for research in marine biology.

In addition to the buildings mentioned, there are several small structures on the campus, an insectary, a lath house and a building for experimental plant studies. On the farm are three buildings for dairy purposes, a piggery, poultry houses, horse stable, tool shed, and four laborers' cottages. At Kaimuki there is an astronomical observatory. A more detailed account of the equipment of the buildings and laboratories is given under the head of Courses of Instruction.

By arrangement between the University and the Bishop Museum it is provided that there shall be reciprocity in the use of libraries, laboratories, collections and other facilities of research. Graduate students registered in the University of Hawaii will be allowed to carry on investigations under the guidance of members of the museum staff, and work done in this way may be credited toward advanced degrees by the University. Advanced students will be allowed the use of the museum facilities when working under proper direction, subject to such regulations as may be deemed expedient by the Director of the Museum.
PURPOSES AND STANDARDS.

As required by Section 5 of the act of establishment the University is devoted both to instruction and research in the various fields of knowledge and is committed to the maintenance of the recognized standards of American Universities.

That these standards may be maintained the requirements for admission of regular students to the University are set as high as those of similar institutions on the mainland. Special students must meet the same requirements except that those of mature age who have not the required preparatory school education may be accepted for limited work upon presenting satisfactory evidence of such previous training as manifestly fits them to pursue the desired courses.

No student with entrance conditions can be registered as a Sophomore, none with Freshman conditions as a Junior, and none with Sophomore conditions as a Senior.

A student desiring to take only a part of his course in the University of Hawaii may expect to receive credit at the institution to which he transfers for satisfactory work done here.

LIBRARY.

The Library now contains about 29,000 volumes of the more recent works on Agriculture, Engineering, and Mechanic Arts, the various Mathematical, Physical, Chemical and Natural Sciences, as well as an extensive collection of books in English, French, Spanish, and German Literature. In addition there are on the shelves about 60,000 pamphlets, many of them Bulletins of Agricultural Experiment Stations and of the various departments of the Federal Government. The Library is by law constituted a depository for all Government publications.

A reading room is maintained, wherein may be found local and mainland daily papers, the leading literary magazines and reviews, and a great number of technical and scientific periodicals.

Both the Library and the Reading Room are open to the public; and persons complying with the Library regulations may draw out books for home use.

THE PSYCHOLOGICAL AND PSYCHOPATHIC CLINIC.

Act 140 of the Legislative Session of 1921 provided for the establishment of a psychological and psychopathic clinic under the management and control of the board of regents of the Uni-
Semesters and Credits, Grade Points

versity. The purposes of the clinic are to make examinations of persons at the request of the courts, industrial schools, board of health, department of public instruction and other public institutions and organizations, and, under proper regulation, at the request of private institutions and organizations, parents or guardians. In addition the clinic is to conduct investigations and publish results thereof, and to give lectures and other forms of instruction pertaining to mental disease and defect. The clinic has been established as provided by law with headquarters at the University.

The Waiakea Experiment Station.

Under the provisions of Act 191 of the 1921 session of the legislature, an experiment station has been established at Waiakea, Hawaii. A tract of over 90 acres was reserved for the purposes of an experiment station in the laying out of the homesteads at Waiakea. The greater part of the area is now in cane experiments. Diversified crops and farm animals will also form an important part of the work of the station.

Semesters and Credits.

The year's work is divided into two semesters of eighteen weeks each. Recognition of work done is given in terms of credits, a credit generally being the equivalent of three hours per week spent in the preparation and recitation of a lesson, or in the field or laboratory. The exact division of this time, however, is generally left to the discretion of the professor in charge.

Grade Points.

Beginning with the class entering in September, 1922, a record will be kept of grade points, as well as of grades and semester hours.

Grade points will be determined as follows: For each semester hour 3 grade points will be granted when the grade is 90 or above; 2 grade points when the grade is 80-89; 1 grade point when the grade is 70-79. Grades of 60-69 will carry credit for semester hours, but not for grade points. By passing 3 semester hours with a grade of 90 or above, a student will gain 9 grade points; with a grade of 80-89, 6 grade points; with a grade of 70-79, 3 grade points.
Tuition and Fees

Grade points will be computed in all courses in which grades are reported, including Military Training and Physical Education. A student shall not be entitled to grade points for grades received upon re-examination after being conditioned in any subject.

Students entering as undergraduates with advanced standing will not be given grade points upon work done elsewhere; but on work done here must gain grade points in the same proportion to credit hours required for graduation as is demanded of other students.

To graduate from the University of Hawaii, the student must have gained a minimum of 136 grade points, of which at least 69 must be gained in the last half of the course.

Tuition and Fees.

Tuition in the University is free to residents of the Territory. The term “resident” is defined as follows:

1. Any person who has resided continuously in the Territory of Hawaii for at least one year prior to the registration day of any semester, except that persons, other than those described in paragraphs 2 and 3 below, who come to Hawaii for the purpose of attending the University, may not acquire residence while they are in attendance at the University, unless they become voting citizens of the Territory of Hawaii.

2. Any person, one or both of whose parents is a citizen of the Territory of Hawaii.

3. Any person who is in the military or naval service of the United States, or whose father is in such service.

To others than residents of the Territory the tuition is $25.00 per semester for regular students, or $2 per credit per semester for part time students. A registration fee of $5.00 per semester is charged all regular students and special students registering for 10 or more credits, others are charged at the rate of 50 cents per credit. The use of the swimming tank is free to all students, and those registering for ten or more credits may have locker space assigned to them without charge. Persons registering as candidates for advanced degrees are charged a matriculation fee of $5.00. A charge of $5 per semester to cover cost of materials is required of those taking Courses 1, 2, and 3 in Household Science, and Art and Design 10, and $2.00 a semester in Art and Design 8, 9 and 12; laboratory fees of $1.50 per semester per credit of laboratory work are charged in the courses in chemistry.
Requirements for Admission

and sugar analysis, and $1.00 in physics, engineering laboratory, the biological sciences and soils. Apparatus lost or destroyed is charged at market prices.

A Late Registration Extra Fee of $1.00 is required of all students who register later than the announced registration days, and a Reinstatement Fee of $5.00 will be charged on registration of any student who shall have withdrawn from the College of Hawaii or the University without securing either an honorable dismissal or a leave of absence.

Classification of Students.

The University of Hawaii recognizes four classes of students:

1. Regular undergraduate students in either of the Colleges.
2. Special students in either of the Colleges.
3. Graduate students.
4. Extension students.

Regular students are those who having met the requirements for admission are pursuing a course of study leading to a bachelor's degree in conformity with the regulations of either of the Colleges.

Special students are those who are working for credits, but not following one of the programs of work leading to a degree.

Graduate students are those who have received a degree from one of the Colleges of this University or some other institution of equal standing and taking courses for which graduate credit is allowed.

Extension students are those who are enrolled in extension classes.

Requirements for Admission

The requirements for admission in the two Colleges are uniform.

Admission of Regular Students.

1. Time of application for admission:
   Applications for admission must be filed not later than Sep-
tember 1. Later applications will not be considered unless it can be shown to the satisfaction of the Entrance Committee that delay was unavoidable.

2. Applicants will be given matriculation permits:
   (a) On the presentation of a school record showing that the candidate has completed 15 units of high school work in approved subjects with an average grade of 80% or better. These 15 units must include 3 units of English in which the average grade is at least 80%, and to be admitted to an engineering course the candidate must present 3 1-2 units of mathematics with an average grade of 80% or over.
   (b) On the presentation of a school record showing that the candidate has passed in 15 units of high school work in approved subjects, and the passing of a comprehensive examination designed to test the candidate’s intelligence.

A statement issued by the College Entrance Examination Board, or by an officer of the University of Hawaii certifying that a candidate has passed an examination in any subject will be accepted as an equivalent to an 80% grade given by a preparatory school in the same subject.

A unit signifies the satisfactory completion of a course of study pursued for a full school year, with five recitations of not less than 45 minutes a week, or the equivalent laboratory or shop exercises.

3. Students may be admitted without examination by transfer from another college or university. Students thus transferring must present an official statement of the studies offered for admission, of the studies pursued in college and the grade received in each, and also a certificate of honorable dismissal.

Persons of some maturity who have had experience on sugar plantations, in sugar mills or laboratories, or in some other activity that manifestly prepares them for college work may be given credit for such work. Just what forms of work will be given credit and just how many credits will be granted cannot be stated in advance; but each case will be passed upon individually.

The University of Hawaii desires to make its requirements for admission as flexible as possible without lowering its standards. It does not wish to debar properly qualified students by setting up arbitrary requirements, nor does it wish to dictate to the secondary schools what shall be the precise nature of their courses. The only end which is kept in view is that the entering students shall be prepared to take up their more advanced
Requirements for Admission

courses successfully. Schools that certify pupils unqualified to
do college work will not be regarded as accredited schools, and
their certifications will not be accepted.

In general, the University does not stipulate what studies shall
be offered in satisfying entrance requirements. To this general
principle there are, however, two important exceptions.

*No candidate will be admitted to regular standing in any course
who does not offer the following: 3 units in English; 2 units in
Mathematics.*

Candidates desiring to study mathematics in the University
must offer at least 2½ units in mathematics, and those desiring
to enter the course in Engineering must offer 3½ units in mathe­
matics.

In this connection, attention is called to the rule that no person
will be admitted as a special student who is under the age of
21 years, unless that person shall fully satisfy the entrance re­
quirements for regular standing. It will be seen that no person
under the age of 21 will be admitted either as a regular or as a
special student who does not offer at least 3 units in English and
2 units in mathematics.

Candidates expecting to study Engineering are strongly urged
to begin the study of both physics and mechanical drawing while
in preparatory school. Candidates offering mechanical drawing
as an entrance unit will be required to submit the plates drawn
by them in the preparatory school. They will be placed in a
special section in the class in mechanical drawing, and permitted
to begin at once on the more advanced work.

Candidates offering freehand drawing and perspective must
submit drawings made in the preparatory school.

Students wishing to enter an advanced course in one of the
modern languages must offer at least 2 units in that language.
Students offering 2 or more units in a modern language will not
be permitted to register in the elementary course in that language.

Students entering the College of Arts and Sciences should note
the regulation (p. 44) stating that at the end of the Sophomore
year each student in that College must give satisfactory evidence
of possessing an adequate knowledge of at least one foreign lan­
guage. Students who fail to meet this requirement will not be
allowed credit toward graduation for a language course taken
during the Junior or Senior years to make up this deficiency.

The maximum number of entrance units in commercial subjects
Admission of Special Students

that will be accepted is 5. Of these not more than 2 may be in bookkeeping, and not more than 1 in either stenography or typewriting.

Not more than 2 credits in music may be accepted, under conditions similar to those governing credits in music leading to degrees. (See page 53.)

For the guidance of those who wish to enter by presenting 15 units, a list of the subjects regularly accepted is given:

- English
- Latin
- Greek
- French
- German
- Spanish
- Oriental Languages and Literature
- Algebra
- Plane Geometry
- Solid Geometry
- Plane Trigonometry
- Physics
- Chemistry
- Botany
- Zoology
- Physiology
- Physical Geography
- United States History
- English History
- Ancient History
- General History
- Civil Government
- Commercial Law
- Bookkeeping
- Stenography
- Drawing and Perspective
- Mechanical Drawing
- Household Science
- Manual Training
- Music

In all courses the work of the Freshman year has been planned so as to permit of an easy transition from school to college. The only prescribed studies that demand prerequisites are mathematics and English.

Admission of Special Students.

Candidates will be admitted as special students either (a) by fully satisfying the requirements for admission as a regular student, or (b) by filing with the Committee on Entrance satisfactory evidence of having attained the age of 21 years and of having sufficient training to carry on the work desired.

No person, however, shall be admitted as a special student before his class in a secondary school has been graduated, except by special permission of the University Faculty.
Admission of Graduate Students.

The requirements for admission as a graduate student are stated in conjunction with the requirements for receiving an advanced degree (see page 24).

Physical Education and Military Drill.

All regular students and all special students who are registered for eight or more hours of work are required to take a certain amount of physical education, unless excused from this requirement because of physical disability or other valid reason. Such students may be given special forms of exercise.

For the men the physical education may be in the form of military drill and tactics or various athletic games, or both. For the women it is in the form of outdoor games (basketball, volleyball, etc.) and exercises directed by a coach or supervisor.

A handsome silver cup has been donated by the Faculty Women's Club as a perpetual trophy for women's sports.

Special attention is given to intramural athletics, and competitions between class teams in various sports form a distinctive feature of student activities.

Senior R. O. T. O.

A Senior Reserve Officers' Training Corps unit has been organized in the University of Hawaii by the War Department. All male freshmen and sophomores of American citizenship in regular standing in the University and physically able are required to enroll.

Dormitory for Men.

The dormitory for men accommodates twenty-six students and a proctor. There are four suites consisting of two bedrooms and a study, each accommodating four men, ten single rooms, a general living room, and lanais. Bookshelves and dressers are built in, and beds are provided. Other furniture will be supplied by the occupants. Each student must bring a pillow, four single bed sheets, two pillow cases, blankets, and counterpane marked with his name and room number. The bed linen will be deposited with the caretaker. The room rent includes the laundry of the bed linen and the care of the room. A rental of $35.00 per semester is charged.
Degrees

Dining Hall and Cafeteria.

A dining and cafeteria service is conducted by the University. All meals at noon are on the cafeteria plan; the service at breakfast and dinner is table d'hote. The monthly rate for breakfast and dinner varies somewhat from year to year but approximates $25.00.

The University Y.M.C.A.

The University Y.M.C.A. is an association of Christian students and faculty men who have organized in order to develop Christian character among the students and afford opportunity for expression of the spirit of Christian brotherhood through the various student activities.

Fitting in naturally with the academic, social and athletic phases of the University, the Association definitely promotes the moral and spiritual aspect of student life, on and off the campus. Through the University of Hawaii Y.M.C.A. the students are affiliated with the North American Student Movement and the World Christian Student Federation with a membership of over 200,000.

Degrees

Baccalaureate Degrees.

On satisfactory completion of a regular course in the College of Applied Science a student is granted the degree of Bachelor of Science (B.S.), the diploma designating the course which has been pursued. The degree of Bachelor of Arts (B.A.) is granted upon the satisfactory completion of a regular course in the College of Arts and Sciences.

Advanced Degrees.

Special attention is directed to the unusual advantages of Hawaii for research in botany, entomology, marine zoology, and certain phases of geology. The great variations of elevation, rainfall, and temperature to be found within short distances provide remarkable conditions for ecological studies. The presence of active and extinct volcanoes, lava flows of all ages, and unique conditions of erosion provide numerous interesting geological problems. The character of the population and the geographical situation of the Hawaiian Islands make this a field of
exceptional interest for work in the social and economic sciences.

Advanced students from other institutions and investigators desiring to study special problems, are invited to make use of the facilities of the University of Hawaii for study and research.

The advanced degree of Master of Science (M.S.) and Master of Arts (M.A.) will be granted to Bachelors on the satisfactory completion of advanced work for which their previous education has laid the necessary foundation. They must work under the direction of a special committee for at least one year at the University, or for at least two years not in residence. In addition the student must present an acceptable thesis and pass the required examinations.

The degree of Civil Engineer (C.E.) will be granted to Bachelors of Science who shall have completed the corresponding undergraduate course at this institution, upon the completion of two years of practical experience in their chosen profession, the presentation of a satisfactory paper upon some topic of interest connected with their work, the completion of assigned problems, and the passing of the required examinations.

To be accepted as a candidate for an advanced degree, the applicant must be a graduate of the University of Hawaii or of some other institution of equal standing. The application should be made in writing to the Committee on Graduate work not later than October 1st, and should be accompanied by satisfactory evidence of the completion of undergraduate work and of fitness to pursue the studies the applicant purposes to follow. In case the amount of undergraduate work is deemed insufficient, the applicant, if accepted, may be required to take other undergraduate courses, which will not be credited toward the advanced degree.

A matriculation fee of five dollars is required of all candidates for advanced degrees.

The advanced work may be restricted to one subject only, or to a major and one minor, or to a major and two minors; but at least one-half the work must be in the major, and the minors must be so correlated with the major as to satisfy the Committee on Graduate Work that the candidate is working with a definite purpose. It is expected that the work done for the master's degree will require at least 1620 actual working hours.

Certain undergraduate courses may be taken by graduate students for credit towards an advanced degree. Some count full credit, while others only half credit. Courses not in the following two lists count no credit for advanced degrees:
Advanced Degrees

Full Credit.  
Agriculture 10.  
Art and Design 4, 7.  
Engineering, C.E. 2, 3, 6, 7, 12.  
Household Science 4.  
English 30.  
French 5, 6, 7, 8, 9, 10.  
Spanish 5, 6, 7, 8.  
Botany 8.  
Chemistry 15, 16, 18.  
Entomology 16.  
Physics 4.  
Mathematics 9, 10.  
Zoology 10.  
Sugar Technology 2, 3, 4, 5.  
History 9.  
Education 4, 7, 8, 9.  
Psychology 4, 5, 8, 9.  

Half Credit.  
English 4, 7, 9, 20.  
Economics 7, 8, 9, 12.  
Sociology 1, 2.  
Political Science 2.  
History 15, 19.  
Engineering—C. E. 1.  
Chemistry 5, 6, 9, 9a, 10, 11, 12.  
13, 14.  
Entomology 4, 5, 6, 7.  
Mathematics 5, 6, 7, 8.  
Physics 3.  
Geology 4, 5.  
Commerce 5, 6, 9, 10.  
Sugar Technology 1, 1a.  
Education 2, 3, 5, 6.  
Psychology 3.  

The general subject of the thesis, together with the written approval of the chairman of the committee in charge, must be furnished to the Committee on Graduate Work not later than December 1st of the collegiate year in which the degree is to be taken.

The completed thesis must be presented to the Committee on Graduate Work at least one week before the date set for the candidate's examination, and must win the Committee's approval as demonstrating the candidate's ability both to do original work and also to present the results of that work in creditable form. The thesis, accompanied by the written approval of the chairman of the Committee on Graduate Work, will be returned for use in the examination or for binding. Before the candidate is granted a diploma, a typewritten copy of the thesis, on pages 8x10½ inches in size, bearing the written approval of the professor in charge, must be deposited in the Library as the permanent property of the University, together with a fee sufficient to pay for binding.

The examination for the degree will be conducted by the committee in charge of the candidate's work, and may be either written or oral, or both written and oral. It shall be open to all members of the faculty. Requests for examinations should be made in writing to the Committee on Graduate Work not later than April 15th, and the Committee will announce the time and place of the examination not later than May 1st.
SCHOLARSHIPS.

Honolulu Chamber of Commerce Freshman Scholarship.—A scholarship of $100, awarded to the graduate of a Honolulu preparatory school passing the best examinations in algebra, geometry, American history, and English.

Honolulu Chamber of Commerce Agricultural Scholarship.—An annual scholarship of $100, awarded to an upper classman taking the course in Agriculture or the agricultural division of the course in Sugar Technology.

Hilo Board of Trade Scholarships.—Annual scholarships of $100, awarded by a committee of the Hilo Board of Trade to residents of East Hawaii who desire to take a full regular course at the University of Hawaii.

Maui Women's Club Scholarship.—An annual scholarship of $100 is awarded by the Maui Women’s Club to a graduate of the Maui High School.

University Club Sophomore Scholarship.—This scholarship of $100 is awarded for the Sophomore year to that needy student who makes the best record in the work of the Freshman year.

Honolulu Rotary Club Scholarships—The Rotary Club of Honolulu offers two annual scholarships of $250.00, the award to be made by the Rotary Club on a basis of character, scholarship, and need.

Prince Fushimi Memorial Educational Fund.—The sum of $300 is available annually for the assistance of American citizens of Japanese ancestry of high scholastic and good moral standing who are unable to pay their educational expenses.

Applications for scholarships other than those of the Hilo Board of Trade, the Maui Women's Club and the Honolulu Rotary Club should be addressed to the President of the University not later than May 1.
COLLEGE OF APPLIED SCIENCE

PROGRAMS OF STUDY

The College of Applied Science offers the following courses of study leading to the degree of Bachelor of Science, the diploma to designate the course which has been pursued:

1. A course in AGRICULTURE.
2. A course in ENGINEERING.
3. Courses in SUGAR TECHNOLOGY:
   (a) Agricultural Division, with emphasis on field operations.
   (b) Chemistry Division, with emphasis on mill practice.
   (c) Sugar-house Engineering Division, with emphasis on construction and operation of sugar mills.
4. A course in HOME ECONOMICS.
5. A course in GENERAL SCIENCE, including:
   (a) Physical Sciences,—mathematics, physics, chemistry, and geology.
   (b) Biological Sciences,—botany, entomology and zoology.

AGRICULTURE

The Course in Agriculture is designed to give the student an intimate knowledge of the fundamental principles which underlie agriculture as a science and a profession, and thus equip him for effective service either in practical farming, agricultural education, or research work. Agricultural science comprehends a wide range of subjects, and includes something from nearly every department of human learning. The natural sciences of geology, chemistry, physics, botany, zoology, bacteriology, and physiology are directly and intimately related to it. Not in the sciences alone should the agricultural student be broadly educated, but also in mathematics, languages, history, and economics.

In outlining this course the object sought is first to teach the general laws governing the relationship of growing crops and living animals to soil, climate, and surroundings. The method is by lectures, supplemented by laboratory investigations and field
experiments. This study of the fundamentals will be required of all students who intend to specialize in any advanced line of agricultural work.

Following this fundamental work the special applications and modifications appertaining to particular crops and problems are studied.

**Outline of Course in Agriculture.**

The course in Farm Practice, Agriculture 1, must be completed before the beginning of the Junior year. It may be taken in the vacation following either the Freshman or the Sophomore year.

**First Year.**

<table>
<thead>
<tr>
<th>Name of Course</th>
<th>Credits 1st Sem.</th>
<th>Credits 2nd Sem.</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Composition</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Chemistry</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Botany</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>5 or 6</td>
<td>5 or 6</td>
</tr>
<tr>
<td>Military or Physical Education</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

All electives throughout the course are to be chosen with the advice and consent of adviser. Electives not in suggested list may be chosen with consent of adviser.

*Suggested Electives:* Language (French or Spanish), History, American Institutions, Drawing (Freehand or Mechanical).

**Second Year.**

<table>
<thead>
<tr>
<th>Name of Course</th>
<th>Credits 1st Sem.</th>
<th>Credits 2nd Sem.</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 2 or 3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Qualitative Analysis</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Zoology</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Plant Physiology</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Plant Pathology or Bacteriology</td>
<td>Bot. 5 or 4</td>
<td>3</td>
</tr>
<tr>
<td>Physics</td>
<td>Phys. 2a</td>
<td>3</td>
</tr>
<tr>
<td>Genetics</td>
<td>Agr. 5</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>2 or 3</td>
<td>2 or 3</td>
</tr>
<tr>
<td>Military or Physical Education</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

### Third Year

<table>
<thead>
<tr>
<th>Name of Course</th>
<th>Credits</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entomology Ent. 1 &amp; 2 or 7</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Biological Chemistry Chem. 9</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Agricultural Chemistry Chem. 9a</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Quantitative Analysis Chem. 10</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Geology Geol. 2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Soils Agr. 2</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Crops Agr. 3</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Bacteriology or Plant Pathology Bot. 4 or 5</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Horticulture or Forestry</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

### Fourth Year

<table>
<thead>
<tr>
<th>Name of Course</th>
<th>Credits</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economics Econ. 5</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Sugar Cane Production Agr. 4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>*Accounting Commerce 1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Animal Husbandry</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Poultry Husbandry Agr. 9</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Dairying Agr. 8</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Feeds and Feeding</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Forestry or Horticulture</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Thesis</td>
<td>3 or 6</td>
<td></td>
</tr>
</tbody>
</table>

**Engineering**

The course in engineering is planned to give thorough training in the fundamental principles upon which professional engineering practice is based, and to illustrate the application of these principles by the solution of numerous practical problems. Persons entering this course are expected to be well prepared in the physical sciences and in mathematics up to and including solid geometry and plane trigonometry. (See Entrance Requirements (page 21). It is desired to emphasize the necessity of thorough preparation in order that the more serious work of mastering technical subjects may not be hampered by lack of proper groundwork.

The general plan provides a broad foundation in English,

*Accounting may be continued as an elective.*
mathematics, chemistry, physics, and drawing during the first two years. The work of the last two years is more technical and professional in its nature, embracing the study of the principles involved in power development by means of the various prime movers, including steam engines, water-wheels, gas and gasoline engines, and steam turbines; and also a study of the design of such machines, and of the materials entering into their construction, as well as practical tests to determine their working efficiency and economy of operation. It is aimed to fit graduates to assume gradually, as practical experience is acquired, those administrative responsibilities which are more and more devolving upon men of technical training, and to become ultimately skilful practical engineers. So far as possible, the importance of each subject covered is illustrated by the application to some work which is met with in actual practice. It is also intended that the course shall be valuable from an educational viewpoint; therefore, while the student is learning each subject both theoretically and practically, the training of his mind is kept in view as well as the needs of the profession.

OUTLINE OF COURSE IN CIVIL ENGINEERING.

FIRST YEAR.

<table>
<thead>
<tr>
<th>Name of Course</th>
<th>Credits 1st Sem.</th>
<th>Credits 2nd Sem.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analytic Geometry and Trig.</td>
<td>Math. 3</td>
<td></td>
</tr>
<tr>
<td>English Composition</td>
<td>English 1</td>
<td></td>
</tr>
<tr>
<td>General Chemistry</td>
<td>Chem. 1 or 2</td>
<td></td>
</tr>
<tr>
<td>Mechanical Drawing</td>
<td>M. D. 1</td>
<td></td>
</tr>
<tr>
<td>Algebra and Calculus</td>
<td>Math. 4</td>
<td></td>
</tr>
<tr>
<td>Plane Surveying</td>
<td>C. E. 1</td>
<td></td>
</tr>
<tr>
<td>Elective</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Military or Phys. Education</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SECOND YEAR.

<table>
<thead>
<tr>
<th>Name of Course</th>
<th>Credits 1st Sem.</th>
<th>Credits 2nd Sem.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calculus</td>
<td>Math 5 &amp; 6</td>
<td></td>
</tr>
<tr>
<td>Descriptive Geometry</td>
<td>M. D. 3</td>
<td></td>
</tr>
<tr>
<td>English</td>
<td>Eng. 2 or 3</td>
<td></td>
</tr>
<tr>
<td>Roads and Pavements</td>
<td>C. E. 15</td>
<td></td>
</tr>
<tr>
<td>General Physics</td>
<td>Phys. 2</td>
<td></td>
</tr>
<tr>
<td>Office and Shop Methods</td>
<td>M. E. 9</td>
<td></td>
</tr>
<tr>
<td>Elective</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Military or Phys. Education</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Engineering

## THIRD YEAR

<table>
<thead>
<tr>
<th>Course</th>
<th>1st Sem.</th>
<th>2nd Sem.</th>
<th>1st Sem.</th>
<th>2nd Sem.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analytical Mechanics</td>
<td>C. E. 2</td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Astronomy</td>
<td>Math. 7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bacteriology</td>
<td>Bot. 4</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chem. for Engineers</td>
<td>Chem. 23</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Elec. Measurements</td>
<td>Phys. 3</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geology</td>
<td>Geol. 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydraulics</td>
<td>C. E. 7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydraulic Construction</td>
<td>C. E. 8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Materials</td>
<td>M. E. 2</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Materials Laboratory</td>
<td>X. E. 4</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Municipal Engr.</td>
<td>C. E. 9</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economics</td>
<td>Econ. 5</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Railroad Surveying</td>
<td>C. E. 10</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Steam Machinery</td>
<td>M. E. 1</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structural Mechanics</td>
<td>C. E. 3</td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Topographical Surv. and Drawing</td>
<td>C. E. 4</td>
<td></td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Electrical Machinery</td>
<td>E. E. 1</td>
<td>3</td>
<td></td>
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</tbody>
</table>

## FOURTH YEAR

<table>
<thead>
<tr>
<th>Course</th>
<th>1st Sem.</th>
<th>2nd Sem.</th>
<th>1st Sem.</th>
<th>2nd Sem.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Astronomy</td>
<td>Math. 7</td>
<td></td>
<td>3</td>
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<tr>
<td>Bacteriology</td>
<td>Bot. 4</td>
<td>3</td>
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<tr>
<td>Bridge Design</td>
<td>C. E. 6</td>
<td>3</td>
<td>3</td>
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<tr>
<td>Chem. for Engineers</td>
<td>Chem. 23</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Concrete and Masonry</td>
<td>C. E. 12</td>
<td>3</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Contracts and Specifications</td>
<td>M. E. 8</td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Elec. Measurements</td>
<td>Phys. 3</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geology</td>
<td>Geol. 2</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydraulics</td>
<td>C. E. 7</td>
<td></td>
<td>3</td>
<td></td>
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<tr>
<td>Hydraulic Construction</td>
<td>C. E. 8</td>
<td></td>
<td>3</td>
<td></td>
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<tr>
<td>Materials</td>
<td>M. E. 2</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Municipal Engineering</td>
<td>C. E. 9</td>
<td>3</td>
<td></td>
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<tr>
<td>Economics</td>
<td>Econ. 5</td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Railroad Surveying</td>
<td>C. E. 10</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Steam Machinery</td>
<td>M. E. 1</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structural Design</td>
<td>C. E. 5</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Topographical Surv. and Drawing</td>
<td>C. E. 4</td>
<td></td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Electrical Machinery</td>
<td>E. E. 1</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The Courses in Sugar Technology are designed primarily for the student who, on leaving college intends to enter into active service in some branch of the sugar industry. Although these courses, since they prepare for one particular industry, might be termed highly specialized, the importance of a sound training in general science has not been overlooked, the first two years being devoted largely to English, mathematics, physics, and chemistry. In the third and fourth years, enough special instruction in subjects pertaining directly to the sugar industry is given so that the man who completes this course should have sufficient technical understanding to prove of some immediate value in a subordinate position on a plantation, and yet not have his future progress hampered by an inadequate theoretical training.

The Hawaiian Sugar Planters' Association offers many very valuable opportunities for making more practical the instructional work of the University. Advanced students serve as apprentices in their mills and plantations, and take part in their Experiment Station projects and activities.

The cane sugar industry, as carried on in the tropics, comprises in itself two quite distinct branches: the growing of cane, and its manufacture into sugar. Inasmuch as it would be extremely difficult, if not impossible, to acquire thorough knowledge in both these branches in four years, the courses in Sugar Technology are offered in three divisions.

Agricultural Division. The first two years are almost parallel with the Course in Agriculture. In the third year it is advisable to elect certain courses in chemistry in addition to strictly agricultural topics, for the reason that sugar production is probably more dependent on chemistry than is any other branch of agriculture. Sugar analysis is also required, as familiarity with this work is often required of a field chemist. The lectures on cane sugar manufacture are required in the fourth year, as it is desirable that the agriculturist have some knowledge of what happens to the cane after he has grown it.

Sugar Chemistry Division. The work of the first two years follows closely that of the Agricultural Division, but in the third and fourth years the course differs in offering more work in chemistry, with the purpose of giving such training in chemistry as shall prepare a student not only to become an efficient sugar chemist, but also to conduct investigations leading to better methods of control in the manufacture of sugar.
Sugar Technology

Sugar House Engineering Division. The first year is identical with the Course in Engineering, while the second year differs only in the substitution of qualitative analysis for advanced mechanical drawing. Chemistry is continued in the third year, together with the most essential of the engineering subjects. Students in this division take sugar analysis and sugar manufacture together with those of the Sugar Agricultural Division.

During the summer vacation between the third and fourth years a minimum of eight weeks' work on one of the plantations, or in connection with the work of the Experiment Station of the Hawaiian Sugar Planters' Association, is required of students in all divisions. To obtain credit for this, the student must submit a written report of the work performed.

The second semester of the fourth year is devoted almost entirely to practical work. Arrangements are made whereby students in the Sugar Agriculture Division serve as Student Assistants in the Experiment Station of the Hawaiian Sugar Planters' Association, and those in the Sugar-house Engineering Division serve as special apprentices in the factory of one of the plantations, where they actually perform the manual labor required at the various stations of the mill and boilinghouse. Careful notes must be kept of this work and a report submitted at the end of the semester.

This also applies to students in the Sugar Chemistry Division, who may elect either field or factory practice.

OUTLINE OF COURSES IN SUGAR TECHNOLOGY.

AGRICULTURAL DIVISION.

FIRST YEAR.

<table>
<thead>
<tr>
<th>Name of Course</th>
<th>1st Sem.</th>
<th>2nd Sem.</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Composition</td>
<td>Eng. 1</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics</td>
<td>Math. 1 &amp; 2</td>
<td>3</td>
</tr>
<tr>
<td>Chemistry</td>
<td>Chem. 1 or 2</td>
<td>3</td>
</tr>
<tr>
<td>Botany</td>
<td>Bot. 1</td>
<td>3</td>
</tr>
<tr>
<td>Drawing</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Military or Phys. Education</td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

Suggested Electives: History, American Institutions, Modern Language (French or Spanish).

Summer Farm Practice. Agriculture 1. Summer vacation. (This may be taken at end of either freshman or sophomore year.)
### SECOND YEAR.

<table>
<thead>
<tr>
<th>Name of Course</th>
<th>Credits 1st Sem.</th>
<th>Credits 2nd Sem.</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>Eng. 2 or 3</td>
<td>3</td>
</tr>
<tr>
<td>Qualitative Analysis</td>
<td>Chem. 4</td>
<td>3</td>
</tr>
<tr>
<td>Physics</td>
<td>Phys. 2a</td>
<td>3</td>
</tr>
<tr>
<td>Surveying</td>
<td>C. E. 1</td>
<td>2</td>
</tr>
<tr>
<td>Genetics</td>
<td>Agr. 5</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Military or Phys. Education</td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

**Suggested Electives:** Plant Physiology (Bot. 6), Zoology 1, Geology 2, Bacteriology or Plant Pathology, Modern Language (French or Spanish).

### THIRD YEAR.

<table>
<thead>
<tr>
<th>Name of Course</th>
<th>Credits 1st Sem.</th>
<th>Credits 2nd Sem.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sugar Analysis</td>
<td>S. T. 1</td>
<td>3</td>
</tr>
<tr>
<td>Soils</td>
<td>Agr. 2</td>
<td>5</td>
</tr>
<tr>
<td>Crops</td>
<td>Agr. 3</td>
<td>5</td>
</tr>
<tr>
<td>Electives</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>*Field Practice</td>
<td>S. T. 3</td>
<td>6</td>
</tr>
</tbody>
</table>

**Suggested Electives:**
- Agricultural Chemistry (Chem. 9a).
- Biological Chemistry (Chem. 9).
- Quantitative Analysis (Chem. 10).
- Bacteriology or Plant Pathology.
- Entomology 1 and 7.
- Forestry or Horticulture.

### FOURTH YEAR.

<table>
<thead>
<tr>
<th>Name of Course</th>
<th>Credits 1st Sem.</th>
<th>Credits 2nd Sem.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sugar-house Calculations</td>
<td>S. T. 1a</td>
<td>1</td>
</tr>
<tr>
<td>Sugar Manufacture</td>
<td>S. T. 2</td>
<td>3</td>
</tr>
<tr>
<td>Sugar Cane Production</td>
<td>Agr. 4</td>
<td>4</td>
</tr>
<tr>
<td>Economics</td>
<td>Econ. 5</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td></td>
<td>5 or 6</td>
</tr>
<tr>
<td>Field Practice</td>
<td>S. T. 4</td>
<td>16</td>
</tr>
</tbody>
</table>

**Suggested Electives:**
- Animal Husbandry.
- Forestry or Horticulture.
- Irrigation Engineering.

*Taken in the summer vacation following the Junior year.*
Sugar Technology

SUGAR CHEMISTRY DIVISION.

FIRST YEAR.

<table>
<thead>
<tr>
<th>Name of Course</th>
<th>Credits</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Composition</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Chemistry</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Botany</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Drawing</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Electives</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Military Drill</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

*Suggested Elective: French.

SECOND YEAR.

<table>
<thead>
<tr>
<th>Name of Course</th>
<th>Credits</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Qualitative Analysis</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Physics</td>
<td>3</td>
<td>3</td>
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<td>Electives</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Military Drill</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

*Suggested Electives:

- Modern Language (French).
- Geology 2.
- Bacteriology or Plant Pathology.
- Surveying (C. E. 1).
- Zoology 1.

THIRD YEAR.

<table>
<thead>
<tr>
<th>Name of Course</th>
<th>Credits</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soils</td>
<td>5</td>
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<tr>
<td>Crops</td>
<td>5</td>
<td></td>
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<tr>
<td>Sugar Analysis</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Electives</td>
<td>9-12</td>
<td>9-12</td>
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<tr>
<td>*Field of Mill Practice</td>
<td>6</td>
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</tr>
</tbody>
</table>

*A required course taken in the summer vacation following the Junior year.
Sugar Technology

Suggested Electives:

Organic Chemistry (Chem. 5 or 6).
Quantitative Chemistry (Chem. 10).
Agricultural Chemistry (Chem. 9a).
Biological Chemistry (Chem. 9).
Bacteriology or Plant Pathology.
Physical Chemistry (Chem. 11).
Physical Chemistry Laboratory (Chem. 12).
Thermodynamic Chemistry (Chem. 13).
Thermodynamic Chemistry Laboratory (Chem. 14).

FOURTH YEAR.

<table>
<thead>
<tr>
<th>Name of Course</th>
<th>Credits 1st Sem.</th>
<th>Credits 2nd Sem.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sugar Cane Production</td>
<td>Agr. 4</td>
<td>4</td>
</tr>
<tr>
<td>Sugar Manufacture</td>
<td>S. T. 2</td>
<td>3</td>
</tr>
<tr>
<td>Sugar-house Calculations</td>
<td>S. T. 1a</td>
<td>1</td>
</tr>
<tr>
<td>Economics</td>
<td>Econ. 5</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Field or Factory Practice</td>
<td>S. T. 4 or 5</td>
<td>16</td>
</tr>
</tbody>
</table>

Suggested Electives:

Accounting.
Quantitative Analysis (Chem. 16).
Steam Tables (M. E. 3).
Physical Chemistry (Chem. 11).
Physical Chemistry Laboratory (Chem. 12).

SUGAR-HOUSE ENGINEERING DIVISION.

FIRST YEAR.

<table>
<thead>
<tr>
<th>Name of Course</th>
<th>Credits 1st Sem.</th>
<th>Credits 2nd Sem.</th>
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</thead>
<tbody>
<tr>
<td>Analytic Geometry</td>
<td>Math. 3</td>
<td>5</td>
</tr>
<tr>
<td>Algebra &amp; Calculus</td>
<td>Math. 4</td>
<td>5</td>
</tr>
<tr>
<td>English Composition</td>
<td>Eng. 1</td>
<td>3</td>
</tr>
<tr>
<td>Chemistry</td>
<td>Chem. 1 or 2</td>
<td>3</td>
</tr>
<tr>
<td>Mechanical Drawing</td>
<td>M. D. 1</td>
<td>2</td>
</tr>
<tr>
<td>Plane Surveying</td>
<td>C. E. 1</td>
<td>2</td>
</tr>
<tr>
<td>Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Military Drill</td>
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Suggested Elective: French or Spanish.
Agriculture

SECOND YEAR.

<table>
<thead>
<tr>
<th>Name of Course</th>
<th>Credits 1st Sem.</th>
<th>Credits 2nd Sem.</th>
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</thead>
<tbody>
<tr>
<td>English</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Physics</td>
<td>4</td>
<td>4</td>
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<tr>
<td>Qualitative Analysis</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Descriptive Geometry</td>
<td>2</td>
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<tr>
<td>Calculus</td>
<td>3</td>
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<td>Shop and Office Methods</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Military or Phys. Education</td>
<td>2</td>
<td>2</td>
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</table>

THIRD YEAR.

<table>
<thead>
<tr>
<th>Name of Course</th>
<th>Credits 1st Sem.</th>
<th>Credits 2nd Sem.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organic Chemistry</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Quantitative Analysis</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Sugar Analysis</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Mechanics</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Steam Mach. or Hydraulics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Electrical Machinery</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Electrical Measurements</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Engineering Laboratory</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>*Field Practice</td>
<td>6</td>
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</table>

FOURTH YEAR.

<table>
<thead>
<tr>
<th>Name of Course</th>
<th>Credits 1st Sem.</th>
<th>Credits 2nd Sem.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sugar-house Calculations</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Sugar Manufacture</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Hydraulics or Steam. Mach.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Engineering of Sugar Plants</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Economics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Factory Practice</td>
<td>16</td>
<td></td>
</tr>
</tbody>
</table>

*Taken in the summer vacation following the Junior year.
HOME ECONOMICS

The course in Home Economics is designed to meet the needs of women students who wish to specialize either in the applications of art or science, or both, to the household. The work of the first two years is prescribed, that of the last two elective within the range of subjects belonging either to Household Science or Art, or closely related thereto. In selecting the elective subjects of Junior and Senior years the student will be assisted by her Faculty Adviser to arrange a program adapted to her special needs and capabilities.

OUTLINE OF HOME ECONOMICS COURSE.

FIRST YEAR.

<table>
<thead>
<tr>
<th>Name of Course</th>
<th>Credits 1st Sem.</th>
<th>Credits 2nd Sem.</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Composition</td>
<td>Eng. 1</td>
<td>3</td>
</tr>
<tr>
<td>Chemistry</td>
<td>Chem. 1 or 2</td>
<td>3</td>
</tr>
<tr>
<td>Drawing</td>
<td>A. &amp; D. 1</td>
<td>2</td>
</tr>
<tr>
<td>Textiles and Elementary Garment Making</td>
<td>A. &amp; D. 8</td>
<td>3</td>
</tr>
<tr>
<td>*Elementary Food Selection and Preparation</td>
<td>H. S. 1</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Physical Education</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

*Suggested Elective for students planning to major in home economics: Mathematics 1 and 2.

SECOND YEAR.

<table>
<thead>
<tr>
<th>Name of Course</th>
<th>Credits 1st Sem.</th>
<th>Credits 2nd Sem.</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>Eng. 2 or 3</td>
<td>3</td>
</tr>
<tr>
<td>Color and Design</td>
<td>A. &amp; D. 3</td>
<td>3</td>
</tr>
<tr>
<td>Dressmaking and Designing</td>
<td>A. &amp; D. 9</td>
<td>3</td>
</tr>
<tr>
<td>Food Economics</td>
<td>H. S. 2</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Physical Education</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

*Suggested Elective for students majoring in home economics: Physics 2a.

*Freshmen with entrance credit in Household Science may substitute electives.
THIRD AND FOURTH YEARS.

Prescribed. The following subjects must be taken in Junior and Senior Years:
- Art and Design 4
- Household Science 5
- Physiology 1
- Economics 5 and 6
- Psychology 1
- Physical Education

Electives. Courses to complete the minimum requirements of 132 credits for graduation must be selected from the following:
- Art and Design 5, 6, 7, 10, 12
- Household Science 3, 4, 6, 7
- Botany 1, 4
- Zoology 1, 2
- Entomology 1, 10
- Chemistry 4, 9
- Sociology 1, 2
- Accounting (Com. 1, 2)
- History (not over 12 credits)
- Advanced English courses
- American Literature
- Education
- Foreign Language (not over 18 credits).

GENERAL SCIENCE

The General Science Course is designed for those students who do not wish to enter upon the strictly limited programs of study of the more professional courses of Engineering, Agriculture, Home Economics and Sugar Technology. It is intended that each student shall have a knowledge of the elements of a considerable range of subjects, and at the same time specialize in some field sufficiently to become acquainted with its more advanced phases and proficient in its methods of work. In order to accomplish this result the student is allowed considerable latitude in the selection of studies, and yet required to carry the major part of his elective work in some one group of sciences.

In order to graduate in the General Science Course the student must have passed the prescribed studies of the first and second years and have satisfactorily completed not less than a total of 136 credits. One of the two groups—Physical Sciences or Biological Sciences—must be selected, and not less than 60 per cent of the elective work of the course taken in this major group.

In the group of studies designated as Physical Sciences, the student has the opportunity of electing work in Chemistry, Physics, and Mathematics, thus becoming trained to take up work as a chemist or as an instructor in the physical sciences.
If the student prefers work in the group known as Biological Sciences he has the privilege of choosing such subjects as Botany, Zoology, and Entomology.

Students who plan to specialize in Chemistry, Zoology or Botany should have a working knowledge of French, since it is essential for advanced work in these subjects. Such students, therefore, should elect French in the Freshman year. In every case, the student should consult for advice the head of that department in which he plans to take the major course.

**OUTLINE OF GENERAL SCIENCE COURSE.**

**PRESCRIBED WORK.**

**FIRST YEAR.**

<table>
<thead>
<tr>
<th>Name of Course</th>
<th>Credits 1st Sem.</th>
<th>Credits 2nd Sem.</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Composition</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Chemistry</td>
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<td>3</td>
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<tr>
<td>Electives</td>
<td>9-11</td>
<td>9-11</td>
</tr>
<tr>
<td>†Military or Phys. Education</td>
<td>2 or 1</td>
<td>2 or 1</td>
</tr>
</tbody>
</table>

**SECOND YEAR.**

<table>
<thead>
<tr>
<th>Name of Course</th>
<th>Credits 1st Sem.</th>
<th>Credits 2nd Sem.</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>†Military or Phys. Education</td>
<td>2 or 1</td>
<td>2 or 1</td>
</tr>
</tbody>
</table>

**ELECTIVE WORK.**

**Group A.**

**PHYSICAL SCIENCES.**

<table>
<thead>
<tr>
<th>1st Year.</th>
<th>*2nd Year.</th>
<th>†3rd and 4th Years.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math. 1, 2, 3, 4</td>
<td>Math. 5, 6</td>
<td>Math. 7, 8, 9, 10</td>
</tr>
<tr>
<td>Geol. 1</td>
<td>Phys. 2</td>
<td>Chem. 5, 6, 9, 9a, 10, 11, 12, 13</td>
</tr>
<tr>
<td>French</td>
<td>Chem. 4</td>
<td>14, 15, 16, 23</td>
</tr>
<tr>
<td>Spanish</td>
<td>Geol. 2</td>
<td>Sugar Tech. 1, 2</td>
</tr>
<tr>
<td>Drawing</td>
<td>C. E. 1</td>
<td>Phys. 3, 4</td>
</tr>
<tr>
<td></td>
<td>M. D. 3</td>
<td>C. E. 2, 3, 7</td>
</tr>
<tr>
<td></td>
<td>French</td>
<td>M. E. 1, 2</td>
</tr>
<tr>
<td></td>
<td>Spanish</td>
<td>E. E. 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Geol. 4, 5, 6</td>
</tr>
</tbody>
</table>

*First year electives are open to Sophomores.
†First year electives taken by Juniors and Seniors count half credit only. Second year electives are open to Juniors and Seniors.
‡Two credits for men; 1 credit for women.
**General Science**

**Group B.**

**BIOLOGICAL SCIENCES.**

<table>
<thead>
<tr>
<th>1st Year</th>
<th>2nd Year</th>
<th>3rd and 4th Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bot. 1, 2</td>
<td>Bot. 6, 7, 10</td>
<td>Bot. 4, 5, 8, 11</td>
</tr>
<tr>
<td>Zool. 1, 2</td>
<td>Zool. 3</td>
<td>Zool. 4</td>
</tr>
<tr>
<td>Geol. 1</td>
<td>Ent. 1, 2</td>
<td>Ent. 4, 5, 6, 16</td>
</tr>
<tr>
<td>French</td>
<td>Geol. 2</td>
<td>Agr. 2, 3, 5, 6</td>
</tr>
<tr>
<td>Spanish</td>
<td>Physiol. 1</td>
<td>Geol. 3</td>
</tr>
<tr>
<td>Drawing</td>
<td>Psychology</td>
<td></td>
</tr>
<tr>
<td></td>
<td>French</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Spanish</td>
<td></td>
</tr>
</tbody>
</table>

**HUMANITIES:** Elective in all groups, but not counting as major electives except as noted above.

---

*First year electives are open to Sophomores.*

†First year electives taken by Juniors and Seniors count half credit only. Second year electives are open to Juniors and Seniors.
The College of Arts and Sciences was created by the Act of the 1919 Legislature of the Territory of Hawaii which established the University of Hawaii. Officially it came into being on July 1, 1920.

The College of Arts and Sciences has a twofold purpose. Its first aim is to make possible a comprehensive and thorough acquaintance with those fields of thought and achievement, both in the humanities and the sciences, upon which our present civilization has reared. It seeks also, through the operation of a system of group electives, commencing with the Sophomore year, to prepare the student for those activities which are professional rather than technical in their nature, such as law, medicine, teaching, journalism, commerce and public and social service.

In the main, therefore, the courses of study offered in this College are those generally recognized as forming the basis of a liberal education. In one important particular there has been a deviation, and that because of Hawaii's unique geographical position. Standing midway between continental America and the Orient, Hawaii must understand the Orient as well as the Occident. More than usual attention is therefore given to the languages, literature, philosophy, and history of the lands bordering upon the Pacific. Especial emphasis will also be given to the study of still other aspects of the Orient in their bearing upon the development of commerce between East and West.

Graduates from the College of Arts and Sciences will be granted the degree of Bachelor of Arts.

Requirements for graduation—affecting candidates registered before September, 1922. To be entitled to the degree of Bachelor of Arts, the candidate must have passed in all the prescribed studies, and have received credit for a minimum of 136 semester hours.

Requirements for graduation—affecting candidates registering in September, 1922, and thereafter. To be entitled to the degree of Bachelor of Arts, the candidate must

(a) have passed all the prescribed studies (see p. 44).

(b) have received credit for a minimum of 128 semester hours, and

(c) have gained a minimum of 136 grade points*, of which at least 68 must have been gained during the last half of the course.

Choice of Requirements for Graduation. Students who were

*For an explanation of the grade point see p. 17.
registered as candidates for the degree of Bachelor of Arts before
September, 1922, may elect whether they will meet the old or the
new requirements.

Number of semester hours a semester. Except as provided
below, no student in the College of Arts and Sciences shall be per­
mitted to register for more than 16 semester hours in any sem­
ester, in addition to the prescribed courses in Military Drill and
Physical Education. Students who have, however, during the
preceding semester, gained a minimum of 30 grade points may
register for 18 credit hours, in addition to Military Drill and
Physical Education; as may freshmen during their first semester,
provided their grades in the subjects offered for entrance average
85% or more.

Although the greater part of the work is elective, the student
is expected to select his studies in conformance with a well de­
fined program. To this end he registers in one of the four groups
of allied subjects indicated below, and is given a Faculty Adviser
who will assist him in his choice of studies. No student is al­
lowed to register in any course without the written approval of
his adviser appearing upon his class-registration card.

Group I. History, Economics, and Social Science.
Group II. Languages, Literature, and Art.
Group III. Natural and Physical Sciences.
Group IV. Education.

At the end of the Sophomore year each student must give sat­
sactory evidence of adequate knowledge of at least one foreign
language. Students who fail to meet this requirement will not
be allowed credit towards graduation for language courses taken
later to make up this deficiency

REQUIREMENTS FOR THE BACHELOR OF ARTS
DEGREE

128 semester hours to graduate: 42 prescribed, 86 elective.

Prescribed Studies.
Freshman Year.

<table>
<thead>
<tr>
<th>Name of Course</th>
<th>Credits</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Composition</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>A Science</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>American Institutions</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>*Elective</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>†Military or Physical Education</td>
<td>2 or 1</td>
<td>2 or 1</td>
</tr>
</tbody>
</table>

*See above.
†One credit for women; 2 credits for men.
**Sophomore Year.**

<table>
<thead>
<tr>
<th>Name of Course</th>
<th>Credits 1st Sem.</th>
<th>Credits 2nd Sem.</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Literature</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Logic</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Introduction to Psychology</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>*Electives</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>†Military or Physical Education</td>
<td>2 or 1</td>
<td>2 or 1</td>
</tr>
</tbody>
</table>

**Junior Year.**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argumentation</td>
<td>2</td>
</tr>
<tr>
<td>‡Physical Education</td>
<td>1</td>
</tr>
<tr>
<td>*Electives</td>
<td>14</td>
</tr>
</tbody>
</table>

**Senior Year.**

All elective, except Physical Education for women.

**Freshman Electives.**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>History 1</td>
<td></td>
</tr>
<tr>
<td>Art and Design 1</td>
<td></td>
</tr>
<tr>
<td>French</td>
<td></td>
</tr>
<tr>
<td>Spanish</td>
<td></td>
</tr>
<tr>
<td>Japanese</td>
<td></td>
</tr>
<tr>
<td>Chinese</td>
<td></td>
</tr>
<tr>
<td>Mathematics 1, 2, 3, 4</td>
<td>10</td>
</tr>
<tr>
<td>Physics 2a, 2b</td>
<td></td>
</tr>
<tr>
<td>Chemistry 1 or 2</td>
<td></td>
</tr>
<tr>
<td>Botany 1, 2</td>
<td></td>
</tr>
<tr>
<td>Zoology 1</td>
<td></td>
</tr>
<tr>
<td>Geology 1</td>
<td></td>
</tr>
<tr>
<td>Economics 4</td>
<td></td>
</tr>
<tr>
<td>Freehand and Mech. Drawing</td>
<td></td>
</tr>
</tbody>
</table>

**Sophomore, Junior, and Senior Electives.**

The number and character of the group elective is as follows:

**Group I.**—*History, Economics, and Social Science.*

Of the 86 elective semester hours, at least 42 are to be chosen from courses in History, Government, Social Sciences and Economics in accordance with a program approved by the student's adviser. Students preparing for the study of law or for public or social service or for business will select this group.

**Group II.**—*Languages, Literature, and Art.*

In addition to the courses required of all students in the College of Arts and Sciences, students electing this group must take Art and Design 5 and 6. A minimum of 36 semester hours

*See page 44.
†One credit for women; 2 credits for men.
‡Physical education is required of women during the four years.
must be chosen from the courses in English, French, Spanish, Chinese, Japanese and Art and Design 1-4 and 7. Students preparing for journalism will select either this group or Group 1.

GROUP III.—Natural and Physical Sciences.

Of the 86 elective semester hours at least 48 must be chosen from some group of related sciences in accordance with a program approved by the student's adviser. Students preparing for the study of medicine or dentistry will select this group.

GROUP IV.—Education.

The number of semester hours to be chosen within this group will vary with the subject or subjects the student is preparing to teach. In addition to an adequate number of courses dealing with the subjects to be taught, the student will select courses in Psychology and Education in accordance with the Adviser's suggestions.

PREPARATION FOR COMMERCE AND THE PROFESSIONS

Suggested Curricula.

COMMERCE.

Students desiring training for a career in international commerce, especially that so rapidly developing between the countries of the Orient and the American republics, as well as between the latter and Australia and New Zealand, will be expected to register in Group I. For their greater convenience the following outline of courses has been prepared:

OUTLINE OF COURSE IN COMMERCE.

FIRST YEAR.

<table>
<thead>
<tr>
<th>Name of Course</th>
<th>Credits 1st Sem.</th>
<th>Credits 2nd Sem.</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Composition</td>
<td>Eng. 1</td>
<td>3</td>
</tr>
<tr>
<td>American Institutions</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Modern Language (French, Spanish, Japanese or Chinese)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Physiography</td>
<td>Geol. 1</td>
<td>3</td>
</tr>
<tr>
<td>Economic Geography</td>
<td>Econ. 4</td>
<td></td>
</tr>
<tr>
<td>*Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>†Military or Phys. Education</td>
<td></td>
<td>2 or 1</td>
</tr>
</tbody>
</table>

*See page 45.
†Two credits for men; 1 credit for women.
### SECOND YEAR

<table>
<thead>
<tr>
<th>Name of Course</th>
<th>Credits 1st Sem.</th>
<th>Credits 2nd Sem.</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Literature</td>
<td>Eng. 3</td>
<td>3</td>
</tr>
<tr>
<td>Modern Language (French, Spanish, Japanese or Chinese)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Elements of Economics</td>
<td>Econ. 5, 6</td>
<td>3</td>
</tr>
<tr>
<td>Accounting</td>
<td>Com. 1, 2</td>
<td>3</td>
</tr>
<tr>
<td>Logic</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Introduction to Psychology</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>†Military or Phys. Education</td>
<td></td>
<td>2 or 1</td>
</tr>
</tbody>
</table>

### THIRD YEAR

<table>
<thead>
<tr>
<th>Name of Course</th>
<th>Credits 1st Sem.</th>
<th>Credits 2nd Sem.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argumentation</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Commercial Law</td>
<td>Com. 9, 10</td>
<td>3</td>
</tr>
<tr>
<td>Money and Banking</td>
<td>Econ. 7</td>
<td>3</td>
</tr>
<tr>
<td>International Trade</td>
<td>Econ. 8</td>
<td>3</td>
</tr>
<tr>
<td>Transportation</td>
<td>Econ. 9</td>
<td>2</td>
</tr>
<tr>
<td>History of Oriental Nations</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>*Elective</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

### FOURTH YEAR

<table>
<thead>
<tr>
<th>Name of Course</th>
<th>Credits 1st Sem.</th>
<th>Credits 2nd Sem.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commerce of Pacific Nations</td>
<td>Com. 7, 8</td>
<td>3</td>
</tr>
<tr>
<td>Group elective in Economics and Commerce</td>
<td>Com. 3, 4, 5, 6, 9, 10, Econ. 12</td>
<td>5</td>
</tr>
<tr>
<td>‡Electives to make a total of sixteen units.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The course offers instruction not only in the commerce and resources of the countries bordering the Pacific, but also in the fundamental principles of economics and the business of trade, in accountancy, law, and many other subjects of vital importance in commerce.

Honolulu by its very location affords unsurpassed advantages to young men wishing to equip themselves for the business of commerce. There is constant and close touch here with the commerce of all Pacific countries, and some or many of their nationals are in residence here. This is not an “outpost,” but a center of trade.

*See page 45.
†See page 45.
‡Two credits for men; 1 credit for women.
†A thesis treating of the commerce or some aspect of the commerce of some country bordering the Pacific will be required of each Senior. The credit for such thesis will be according to the merit of the thesis and the amount of work.
Obviously the study of one or more modern languages, other than English, is a prime requisite in this training. The student must attain to a certain standard of proficiency in the language chosen. Two years' study of one language is the minimum requirement, but further work may be deemed necessary, the amount depending on the relative difficulty of the language elected and on previous language study. Full credit will be given for all courses successfully completed.

In his choice of electives, the student will be guided in part by his special purpose and interest. Ordinarily he will find it advantageous to choose most of his elective courses from the following: Commerce, Economics, Sociology, History and Government, Modern Languages, English, Physics and Chemistry.

PREPARATION FOR PROFESSIONAL SCHOOLS

COLLEGES OF MEDICINE

The American Medical Association has announced that "beginning January 1, 1918, the minimum requirement for admission to acceptable medical schools, in addition to the high school work, will be sixty semester hours of collegiate work, extending through two years of thirty-two weeks each, exclusive of holidays, in a college approved by the Council on Medical Education." The Medical Association, further, outlines an acceptable pre-medical course of two years to which the program presented below conforms.

The prospective medical student may follow here either of two lines of procedure. He may take a two years' course which will admit him to a medical school where he may obtain the M.D. degree; or he may obtain both the baccalaureate and M.D. degrees by first taking the pre-medical course as outlined by the University of Hawaii.

The pre-medical course is designed for three years in this institution and the fourth year in an approved medical school, in accordance with the following ruling:

"The University of Hawaii will henceforth permit the substitution of the first year in an approved professional school for the fourth year of the University course; and will, upon the satisfactory completion of three years of a University course and one year in an approved professional school, grant the degree of B.S. or B.A. (according to the course pursued)."
It is possible, therefore, to obtain both the B.A. or B.S. and M.D. degrees in seven years. Students planning to enter a medical school later should register either in the College of Arts and Sciences or the College of Applied Science, depending upon the degree they wish or the work they desire.

### Schedule of High School Subjects Required or Accepted for Entrance to the Pre-Medical Course as Prescribed by the American Medical Association.

**Subjects:**

<table>
<thead>
<tr>
<th>Group</th>
<th>Subjects</th>
<th>Units</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>English</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Literature and Composition</td>
<td>3-4</td>
<td>3</td>
</tr>
<tr>
<td>II</td>
<td>Foreign Languages</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Latin</td>
<td>1-4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Greek</td>
<td>1-3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>French or German</td>
<td>1-4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other foreign language</td>
<td>1-4</td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>Mathematics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Elementary Algebra</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Advanced Algebra</td>
<td>1/2-1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Plane Geometry</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Solid Geometry</td>
<td>1/2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Trigonometry</td>
<td>1/2</td>
<td></td>
</tr>
<tr>
<td>IV</td>
<td>History</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ancient history</td>
<td>1/2-1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Medieval and modern history</td>
<td>1/2-1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>English history</td>
<td>1/2-1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>American history</td>
<td>1/2-1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Civil government</td>
<td>1/2-1</td>
<td></td>
</tr>
<tr>
<td>V</td>
<td>Science</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Botany</td>
<td>1/2-1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Zoology</td>
<td>1/2-1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chemistry</td>
<td>1/2-1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Physics</td>
<td>1/2-1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Physiography</td>
<td>1/2-1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Physiology</td>
<td>1/2-1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Astronomy</td>
<td>1/2-1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Geology</td>
<td>1/2-1</td>
<td></td>
</tr>
</tbody>
</table>
Pre-Medical Course

Group VI. Miscellaneous.

Agriculture ........................................... 1-2
Bookkeeping ........................................... ½-1
Business Law ........................................... ½-1
Commercial Geography ............................... ½-1
Domestic Science ..................................... ½-2
Drawing, freehand or mechanical .................. ½-2
Economics and economic history .................... ½-1
Manual training ........................................ 1-2
Music, appreciation and harmony ................... 1-2

A total of fifteen units of high school work is required. Eight units are required as noted in above schedule; the balance may be made from any of the other subjects in the list.

Both of the required units of foreign language must be of the same language, but the two units may be presented in any of the languages.

For entrance to the standard medical college the candidate must have spent at least two years in a college and have completed the following work. A degree from the University of Hawaii will not be granted for less than three years' work here and a fourth in an approved medical college.

Schedule of Subjects of the Two-Year Pre-Medical Course.

Sixty semester hours required.

<table>
<thead>
<tr>
<th>Required subjects</th>
<th>Univ. of Hawaii equivalent</th>
<th>Semester hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Chemistry</td>
<td>Chem. 1 or 2, 4, 5 and 6</td>
<td>20</td>
</tr>
<tr>
<td>Physics</td>
<td>Physics, 2b</td>
<td>8</td>
</tr>
<tr>
<td>Biology</td>
<td>Botany 1, 2, Zoology 1</td>
<td>8</td>
</tr>
<tr>
<td>English Composition</td>
<td>English 1</td>
<td>6</td>
</tr>
<tr>
<td>Other non-science subjects: history, language, economics</td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

Subjects strongly urged:

A modern foreign language .......................... 6-12
Advanced botany or advanced zoology ............. 3-6
Psychology ........................................... 3-6
Advanced mathematics, including trigonometry ... 3-6

Other suggested electives:

English (additional), economics, history, sociology, political science, logic, mathematics, drawing, Latin, Greek.

*After January 1, 1922, organic chemistry will be required by medical schools for admission.
Pre-Medical Course

To meet the above requirements and also those of the University of Hawaii, a student may register either in the College of Arts and Sciences or the College of Applied Science. The following programs of study are suggested:

OUTLINE OF PRE-MEDICAL COURSE.

Students desiring to receive the B.A. degree from the University of Hawaii should take the following studies, complying in general with the requirements in the College of Arts and Sciences. Special attention is directed to the requirement of Physics 2b in the second year and its prerequisite of Mathematics 1 and 2 or the equivalent. Students, therefore, who enter deficient in high school mathematics should arrange to take mathematics in the second year and its prerequisite of Mathematics 1 and 2 more entrance credits in a foreign language, thus being relieved of the foreign language requirements of the first year, or by postponing one of the sciences until the sophomore year.

FIRST YEAR.

<table>
<thead>
<tr>
<th>Name of Course</th>
<th>Credits 1st Sem.</th>
<th>Credits 2nd Sem.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry</td>
<td>Chem. 1 or 2</td>
<td>3</td>
</tr>
<tr>
<td>Zoology or Botany</td>
<td>Zool. 1 and 2, or Bot. 1</td>
<td>3</td>
</tr>
<tr>
<td>English Composition</td>
<td>Eng. 1</td>
<td>3</td>
</tr>
<tr>
<td>Language</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>American Institutions</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Military or Phys. Education</td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

SECOND YEAR.

<table>
<thead>
<tr>
<th>Name of Course</th>
<th>Credits 1st Sem.</th>
<th>Credits 2nd Sem.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry</td>
<td>Chem. 4</td>
<td>3</td>
</tr>
<tr>
<td>Physics</td>
<td>Phys. 2b</td>
<td>4</td>
</tr>
<tr>
<td>English Literature</td>
<td>Eng. 3</td>
<td>3</td>
</tr>
<tr>
<td>Language</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Logic</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Psychology</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Military or Phys. Education</td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>
### Third Year

<table>
<thead>
<tr>
<th>Name of Course</th>
<th>Credits 1st Sem.</th>
<th>Credits 2nd Sem.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organic Chemistry</td>
<td>Chem. 5 &amp; 6</td>
<td>4</td>
</tr>
<tr>
<td>Biological Chemistry</td>
<td>Chem. 9</td>
<td>3</td>
</tr>
<tr>
<td>Bacteriology</td>
<td>Bot. 4</td>
<td>3</td>
</tr>
<tr>
<td>Sociology</td>
<td>Soc. 1 &amp; 2</td>
<td>3</td>
</tr>
<tr>
<td>History</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Argumentation</td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

Students desiring the B. S. degree from the University of Hawaii and planning to enter medical school would select the General Science course in the College of Applied Science and be governed by the requirements of that course, also electing work that would meet the medical school requirements. Entering students who have had the equivalent of Mathematics 1 and 2 are not required to repeat this work in the freshman year, but may substitute other elective work.

A typical outline would be as follows:

### First Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Composition</td>
<td>3</td>
</tr>
<tr>
<td>Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>Botany</td>
<td>3</td>
</tr>
<tr>
<td>Zoology</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Military or Phys. Education</td>
<td>2</td>
</tr>
</tbody>
</table>

Electives to be chosen from history, language (see entrance requirements), drawing, American Institutions.

### Second Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>Physics</td>
<td>4</td>
</tr>
<tr>
<td>Physiology</td>
<td>3</td>
</tr>
<tr>
<td>Entomology</td>
<td>3</td>
</tr>
<tr>
<td>English</td>
<td>3</td>
</tr>
<tr>
<td>Economics</td>
<td>3</td>
</tr>
<tr>
<td>Military or Phys. Education</td>
<td>2</td>
</tr>
</tbody>
</table>

Electives to be chosen from history, language (see entrance requirements), sociology, psychology, logic.
THIRD YEAR.

<table>
<thead>
<tr>
<th>Name of Course</th>
<th>Credits 1st Sem.</th>
<th>Credits 2nd Sem.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organic Chemistry</td>
<td>5 &amp; 6</td>
<td>4</td>
</tr>
<tr>
<td>Biological Chemistry</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>Bacteriology</td>
<td>Bot. 4</td>
<td>3</td>
</tr>
<tr>
<td>Geology</td>
<td>Geol. 2</td>
<td></td>
</tr>
<tr>
<td>Quantitative Analysis</td>
<td>Chem. 10</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td></td>
<td>5</td>
</tr>
</tbody>
</table>

Electives to be chosen from botany 5 & 6, sociology 1 & 2, history, entomology.

This course is not rigid, and deviations are permissible, the only requirement being that the student secure the requisite credits for entrance to medical school and also satisfy the University of Hawaii requirements for a degree.

COLLEGES OF LAW.

Requirements for admission to the Colleges of Law have been steadily advancing, until now at least two years of college training is demanded by the better institutions. Many demand three years of collegiate training, and in some instances the College of Law admits only those who have received a bachelor's degree.

Although these colleges do not ordinarily specify the exact nature of the courses to be taken in preparation for admission, they recommend especially courses in English Composition, Public Speaking, Foreign Languages, Physics, Chemistry, and Physiology, and the more fundamental courses in Government, Economics and English and American History.

The College of Arts and Sciences will undertake to give adequate preparation for admission to the various Colleges of Law, and faculty advisers will assist in outlining such two, three, and four-year courses as will satisfy their entrance requirements.

MUSIC.

Courses in music taken in the Punahou School of Music may be credited towards graduation from the University of Hawaii, provided that the courses taken are of a nature to justify the granting of credits. The courses that may be credited and the number of credits each will carry will be left to the judgment of the University of Hawaii.
Students desiring credit for work done in the Punahou School of Music should register for such work on their University Registration Card, and at the same time make a written request for credit, stating fully the nature of the course and the amount of time the course will demand.*

TEACHING.

Students preparing for the profession of teaching will elect to take their work in accordance with the terms governing Group IV (p. 46). In addition to meeting the general requirements for the degree of B.A. (p. 44) they will elect an adequate number of courses dealing with the subject or subjects they desire to teach, as well as at least 21 credit hours in courses in Psychology and Education (p. 61).

SOCIAL SERVICE.

While the University does not offer a special course for the professional training of social welfare workers, a student in the College of Arts and Sciences may by an appropriate use of his electives, secure a considerable amount of work of value in this connection. Students interested in such work should communicate with their advisers not later than the beginning of the Sophomore year.

The following courses are recommended:

- American Institutions
- Sociology 1, 2.
- English Literature
- Botany 4.
- American Literature
- Physiology 1.
- Psychology, 1, 3, 4, 5
- Chemistry 5, 9.
- Education 1, 2, 3, 4, 5
- Household Science 1, 2, 3, 4, 5, 6.
- Economics 5, 6, 12
- Entomology 10.

* For information concerning the Punahou School of Music, consult the Annual Catalogue of that School, which may be obtained upon request addressed to the Director of the School.
DETAILED STATEMENT OF

SUBJECTS OF INSTRUCTION

LANGUAGES AND LITERATURE

ENGLISH.

1. Composition. The principles of exposition, description, and narration; analysis of illustrative specimens; frequent written exercises, and personal conferences with instructor; occasional exercises in oral composition; collateral reading. Designed to lead not only to correctness of expression, but also to a knowledge of constructive principles. Required of all Freshmen. Prerequisite: the successful completion of at least three years of high school English or the equivalent. First and second semesters, 3 credits each.  Professor A. L. Andrews, Asst Professor Neil and Miss Schwartz

2. Technical and Business English. A study of the methods of collecting, collating and interpreting scientific and technical data, and of preparing the material for either oral or written presentation to those not technically trained. Attention will be paid also to the writing of reports, and to the forms of business correspondence. Text: Watt's "The Composition of Technical Papers." May be taken in place of English 3 by sophomores in the College of Applied Science. First and second semesters, 3 credits each.  Mr. Morrissey.

3. English Literature. A survey of the development of English literature, from Beowulf to Stevenson. Texts: Neilson and Thorndike's "History of English Literature," the "Century Readings in English Literature," Marvin's "History of European Philosophy," and selected novels and plays. Required of all sophomores in the College of Arts and Sciences, and may be elected by all other sophomores in place of English 2. First and second semesters, 3 credits each.  Professor A. L. Andrews


5. Public Speaking. A study of the principles underlying
oral expression and practice in public speaking. The second semester will be given to the writing and delivery of speeches dealing with topics of present interest. Designed primarily for Seniors in Arts and Sciences. First and second semesters, 2 credits each.

6. ARGUMENTATION. The theory of argumentation; the analysis of representative arguments; practice in the writing of briefs and forensics. Required of all Juniors in Arts and Sciences. First and second semesters, 3 credits each.

Professor A. L. Andrews

7. THE NOVEL. The history of the novel in England. Particular attention will be given to social and literary tendencies as reflected in representative novels from De Foe to Meredith. Prerequisite English 3. First and second semesters, 3 credits each.

Mr. Morrissey

8. THE SHORT STORY. The principles of the short story, analysis of representative stories; collateral reading; practice in short-story writing; conferences with instructor. Prerequisite: English 3. (To be given in 1922-1923.) Second semester, 3 credits.

Professor A. L. Andrews

9. SHAKESPEARE. A careful study of some of Shakespeare's representative plays. Reading and interpretation of the plays in class; supplementary lectures; outside reading with reports on assigned topics. Prerequisite, English 3. First and second semesters, 3 credits each.

Assistant Professor Neil

20. ENGLISH POETRY OF THE ROMANTIC PERIOD. A study of the poets of the century 1780-1880 as interpreters of the ideals of the age both social and aesthetic. Wide reading, lectures, topics assigned for interpretation and literary criticism. Prerequisite, English 1. First and second semesters. 3 credits each.

Assistant Professor Neil

30. RECENT LITERATURE. Designed primarily for Juniors and Seniors in Arts and Sciences. The point of departure will be F. S. Marvin's "Recent Development in European Thought." Translations of Russian, French, Belgian, and Norwegian literature will be read, as well as some of the more significant books of England and America. (Not offered in 1922-1923.) First and second semesters, 3 credits each.

Professor A. L. Andrews

FRENCH.


Professor Pecker.

3. Nineteenth Century French Novel. Reading of selected masterpieces of Hugo, Daudet, Balzac, Sand and others. Conversation, essays, and lectures. Comfort's "Exercises in French Composition." Prerequisite: one year of French in college or two years in preparatory school. First semester, 3 credits.


5. Contemporary French Literature. (This course and all to follow are conducted entirely in French.) Critical study of the most modern movement in French prose, with especial attention to war literature. Texts for use in class are imported directly from Paris. Essays, lectures, and discussion on contemporary topics. Prerequisite: Two years of College French or equivalent. First semester, 3 credits.


7. Classic Drama. Masterpieces of Corneille, Racine and Molière. Lectures in French upon the literary history of the period. Additional outside reading and research will be assigned. Prerequisite: three years of college French or equivalent. First semester, 2 credits.

8. Romantic School. Readings from Lamartine, de Musset, Hugo, etc. Lectures in French upon the significance and influence of the Romantic movement. Individual research and reports on assigned topics. Prerequisite: French 7. Second semester, 2 credits.

9. Modern French Drama. This course alternates with French 7. Selected plays of Brieux, Hervieu, Rostand, Maeterlinck, Bernard, Becque, Bernstein, and others. Rapid reading with essays, lectures, and discussions. Individual research and reports. Prerequisite: Same as for French 7. (Not offered in 1922-1923.) First semester, 2 credits.

10. Advanced French Seminar. This course alternates with French 8. Continuation of study as outlined for French 9, or similar work on any phase or period of French literature in which students may be interested. Prerequisite: French 9. Second semester, 2 credits. (Not offered in 1922-1923.)
1. **Elementary Course.** Coster's "Spanish Grammar"; Padre Isla's "Gil Blas de Santillana." Conversation and dictation. Both Castilian and Latin-American pronunciation taught. First semester, 3 credits.  
*Professor Pecker.*

*Professor Pecker.*

3. **Contemporary Spanish Literature.** Works of Galdós, Valera, Pereda, Ibáñez, and others. Conversation and composition based on Waxman's "A Trip to South America." Commercial correspondence. Prerequisite: Spanish 2. First semester, 3 credits.  
*Professor Pecker.*

4. **Contemporary Spanish Literature.** Presupposes and continues Spanish 3. Attention is given the literary development in Spanish America, with reading of Isaac's "María." Conversation and composition continued, with further study of epistolary usages. Prerequisite: Spanish 3. Second semester, 3 credits.  
*Professor Pecker.*

5. **Spanish Classics.** Works of Cervantes, Lope de Vega, Tirso de Molina, Calderón de la Barca, and others. The picaresque novel, Lazarillo de Tormes. Lectures upon the history of Spanish literature. Composition, conversation, and review of grammar. Prerequisite: two years of college Spanish. First semester, 2 credits. (Not offered in 1922-1923.)  
*Professor Pecker.*

6. **Advanced Spanish Seminar.** Rapid reading of modern Spanish novels, plays, and current periodicals. Lectures and discussions. Individual research and reports on assigned topics. Prerequisite: Spanish 5. Second semester, 2 credits. (Not offered in 1922-1923.)  
*Professor Pecker.*

7. **Modern Spanish Novel.** Rapid reading course with advanced work in composition and conversation. Review of grammar. This course alternates with Spanish 5. Prerequisite: Two years of college Spanish. First semester, 2 credits.  
*Professor Pecker.*

8. **Modern Spanish Drama.** Rapid reading of modern Spanish plays, with continued work in composition, diction and conversation. This course alternates with Spanish 6. Prerequisite: Spanish 7. Second semester, 2 credits.  
*Professor Pecker.*
HAWAIIAN

1. A course for beginners in the Hawaiian language, pronunciation, grammar, vocabulary, reading of easy prose, composition and conversation. First and second semesters, 3 credits each.  
   Mr. Beckley.

2. Reading of legends, meles, and more difficult prose, including legal documents. The figurative language. Conversation. First and second semesters, 3 credits each.  
   Mr. Beckley.

JAPANESE.

1. ELEMENTARY COURSE. “Japanese Readers”; “How to Speak Japanese Correctly.” Conversation and dictation. First and second semesters, 3 credits each.  
   Professor Harada.

2. INTERMEDIATE COURSE. “Japanese Readers”; “How to Read and Write Japanese Correctly.” Conversation and composition. First and second semesters, 3 credits each.  
   Professor Harada.

3. JAPANESE LITERATURE. Astor’s “History of Japanese Literature,” with supplementary lectures. Lectures on the development of contemporary literature, with selected readings. Translation and composition. First and second semesters, 3 credits each.  
   Professor Harada.

CHINESE.

1. ELEMENTARY COURSE. Phonetics, dictation, conversation. Text: New Chinese Readers, with phonetic notes, Nos. 1 to 3. First semester, 3 credits.  
   Professor Wang.

   Professor Wang.

3. MODERN PROSE. Composition and conversation. Text: New Chinese Readers, Nos. 5 to 7. First semester, 3 credits.  
   Professor Wang.

   Professor Wang.

HISTORY AND SOCIAL SCIENCES

HISTORY.

1. MEDIAEVAL HISTORY. The problems of the Middle Ages, between the years 378-1250. Texts: Emerton’s “Introduction to the Middle Ages,” and Emerton’s “Medieval Europe.” First and second semesters, 3 credits each (Not offered 1922-23.)  
   Miss Yoder.

2. GENERAL EUROPEAN HISTORY. The general history of the development and expansion of European civilization from the earliest times to the beginning of the World War. Hayes’ “Political and Social History of Modern Europe,” and collateral reading; 1st and 2nd semesters, 3 credits each.  
   Professor Leebriek
6. **History of Europe Since 1800.** The history of diplomacy and international developments in Europe in the Nineteenth and Twentieth Centuries. Attention is called to the influence of international movements in their world aspects. No one text is used, but the student is advised to buy one of several recommended texts. First and second semesters, 2 credits each. (Not offered 1922-1923.)

**Professor Leebrick**

7. **United States History.** A study of the early history of the United States. The first semester covers the separation from Great Britain and the period of the American Revolution. The second semester deals with the organizations of the States into the United States under the “Constitution,” and subsequent developments to about the year 1800. Text to be selected; assigned reference readings. First and second semesters, 3 credits each.

**Miss Yoder.**

5. **American History.** A general course in American history. The first semester deals with the discovery and settlement of all nations in North America, the growth of the Colonies and the achieving of independence. The second semester deals with the development of the United States and its growth since 1790, considerable attention being devoted to the period since the Civil War. First and second semesters, 3 credits each. (Not offered 1922-1923.)

**Professor Leebrick.**

9. **European Expansion in the Pacific Area.** A study of the expansion of European peoples and civilization in the lands in and bordering the Pacific Ocean. A course for advanced students conducted as a reading seminar course. Admission only by the consent of the instructor. First and second semesters, 2 credits each.

**Professor Leebrick.**

15. **History of Japan.** Brinkley’s “History of the Japanese People,” with supplementary lectures. Special attention is given to the development of Feudalism and of Modern Japan; the development of political, social, intellectual, and religious movements, from the time of the arrival of Commodore Perry, in 1852, to the present time. First and second semesters, 2 credits each.

**Professor Harada.**

19. **Chinese History.** Lectures on the ancient, mediaeval and modern history of China, from the Han Dynasty to the Republic of China. Special attention is given to the relations between Tartar Tribes and the Chinese; the development of Chinese political, literary and religious movements. First and second semesters, 2 credits each.

**Professor Wang.**

22. **Ethnology and Social History, with reference to Polynesia.** Second semester, 2 credits. (Given in 1921-22.)

**Dr. E. S. Handy.**
1. **American Institutions.** The aim is to teach citizenship by familiarizing students with the various institutions of American government and to gain a clear insight with new working principles. Training in reading newspapers, magazines and books; discussion of current events, local, national, and international. The discussion-recitation method is followed. Text: Munro's "The Government of the United States." The library has several copies of supplementary texts. First and second semesters, 3 credits each.  
*Professor Leebrock and Miss Yoder.*

2. **Comparative Government.** A comparison of the government of the United States with other governments, especially that of Great Britain, France, Switzerland, Imperial Germany. Attention will be given to the principles of Political Science, and the end of the second semester will be devoted to a brief examination of current political ideas. First and second semesters, 3 credits each. (Not offered 1922-1923.)  
*Professor Leebrock.*

3. **Political Science.** Introduction to Political Science. Texts: R. G. Gettell's "Introduction to Political Science" and "Readings," and other assigned texts. First and second semesters, 3 credits each.  
*Professor Leebrock.*

**Logic**

**Logic, Deductive and Inductive.** Required of all sophomores in the College of Arts and Sciences. First semester, 3 credits.  
*Assistant Professor ———*

**Education and Psychology.**

In view of the complex social situation, the peculiar vocational, economic, and political conditions, and the comparative isolation of this Territory, the importance of public education can hardly be over-estimated. The purpose of the courses in education and psychology is to furnish a background of theory and practice which shall prepare the student for effective service in the educational, social, or economic field as teacher, welfare worker, or employment manager. Specifically it is intended to provide professional training for departmental teachers for intermediate and high schools, and administrators for elementary and secondary schools.

In addition to meeting the special academic requirements of the subject to be taught, each prospective teacher will be expected to earn at least six units of credit in psychology and fifteen in education, including the principles and practice of teaching and the principles of secondary education.

The University is desirous of correlating its work with that of
the public and private schools as far as possible and will endeavor to arrange a suitable meeting time for some of the more advanced courses when there is sufficient demand from properly qualified teachers-in-service.

EDUCATION.

1. INTRODUCTION TO EDUCATION. The purpose of this course is to furnish a comprehensive view of contemporary educational movements; it is designed not only for prospective teachers, but for those who, as citizens, wish to be informed regarding this fundamental democratic institution. Typical problems in various divisions of the educational field will be considered and the principles of education developed. Class instruction will be based upon a textbook with collateral reading, recitations, discussions, and reports. Not open to first-year students. First semester, 3 credits. Professor Flanders.

1a. INTRODUCTION TO EDUCATION. This course has the same general scope and purpose as Education 1. It is sometimes offered to teachers-in-service and others properly qualified. Time and place of meeting are arranged to suit the group. Instruction is imparted through lectures, assigned reading, discussion, reports and written examinations. Given only when there is sufficient demand. 2 credits. Professor Flanders.

2. AMERICAN EDUCATION. An introductory study of the more important present-day problems in the organization, administration, and adjustment of public education in the United States considered in the light of their historical development. Text: Cubberley's "Public Education in the United States." Not open to first year students. Second semester, 3 credits. Professor Flanders.

3. EDUCATIONAL MEASUREMENTS. Consideration will be given to the nature of standardized pedagogical tests; their use in school administration and classroom supervision; the diagnostic value and reliability of results; elementary statistical and graphical methods as an aid in interpretation. Prerequisites: Education 1 or its equivalent and Educational Psychology. First semester, credit to be arranged. (Not offered 1922-1923.) Professor Flanders.

4. PRINCIPLES OF SECONDARY EDUCATION. This course deals with the aims and underlying principles of secondary education; the development of present theory and practice; the tendency toward readjustments to meet physical, social, vocational, and intellectual needs of the pupil and the civic and economic demands
Psychology

of society. Prerequisites: Education 1 and Educational Psychology. Second semester, 3 credits. (Not offered 1922-23.)

Professor Flanders.

5. PRINCIPLES OF TEACHING. Classroom organization and control are based upon physiology, sociology, and psychology. Fundamental principles will be considered. Since the course is preparatory to practice teaching systematic observation of instruction will be emphasized. There will be individual reports and criticisms and group discussion. Open to seniors and graduate students who have earned twelve approved units of credit in education and psychology. First semester, 3 credits.

Professor Flanders.

6. PRACTICE TEACHING. Practice in the technique of instruction and of classroom management will be afforded in the schools of the city. Responsibility, under supervision, must be accepted for the preparation and presentation of material in the student's chosen subject for at least one semester and until ability to teach has been demonstrated. Conferences will be held each week. Open only to those who have had Education 5. Second semester, 3 credits.

Professor Flanders.

7. SEMINAR IN ADMINISTRATIVE PROBLEMS. A course intended for graduate students in education and specially qualified principals and supervisors. Each member will prepare and present for discussion and criticism a typewritten report of an original investigation of some problem in school administration or supervision in which he is particularly interested. Enrollment only after consultation. Credit and hours to be arranged. (Not offered 1922-23.)

Professor Flanders.

8. DIRECTED READING IN EDUCATION. Open only to those qualified to do independent work and show results. Either semester. Credit to be arranged.

Professor Flanders.

9. RESEARCH IN EDUCATION. An opportunity is offered for graduate students, and others properly qualified, to carry on special investigations. A thesis will be required. Either semester. Credit to be arranged.

Professor Flanders.

PSYCHOLOGY.

1. INTRODUCTION TO PSYCHOLOGY. A general survey of the field of psychology; its scope, nature, methods, and subdivisions. The fundamental facts and functions of mental life will be considered with special reference to adult human behavior. An attempt will be made to develop the scientific attitude so that the student may differentiate experimentally determined fact from belief based upon speculation. It is very desirable that this course should be preceded by Zoology 1 or Physiology 1. Not open to
first-year students. Required of Sophomores in Arts and Sciences. Second semester, 3 credits.  
Professor Flanders.

2. EXPERIMENTAL PSYCHOLOGY. Elective for those who have had or are taking Psychology 1. Second semester, hours and credit to be arranged. (Not offered in 1922-23.)

3. EDUCATIONAL PSYCHOLOGY. Consideration will be given to original endowment, mental development, individual differences in relation to heredity and environment, the learning process, transfer of training, and fatigue. While educational aspects will be stressed, the course is fundamental for any branch of applied psychology. Prerequisite: Psychology 1 or its equivalent. First semester, 3 credits.  
Professor Flanders.

4. NORMAL AND EXCEPTIONAL INTELLIGENCE. A course of lectures and discussions on the development and distribution of human intelligence, the relationship of physical and mental growth, the methods and aims of psychological examinations, including personality studies and mental tests. The general aim and direction of the course will be towards the study of individual differences in school children and the methods of discovering and classifying the abnormal, sub-normal and super-normal. There will be a survey of literature dealing with mental testing, together with assigned readings. Open only to advanced students and experienced teachers after consultation. Prerequisite: Educational Psychology. Second semester, credit to be arranged.  
Professor Porteus.

5. MEASUREMENT OF INTELLIGENCE. This is a continuation of Psychology 4 and is a practical course in the method of giving standardized individual and group tests. Each student will be expected to make a study involving the use of tests with the tabulation and interpretation of results. A knowledge of elementary statistical methods will be necessary and will be included as part of the semester assignment. In this and the above course a series of case demonstrations will be given at the laboratory of the Psychological and Psychopathic Clinic. Students will be required to attend these demonstrations and to present case histories and test records based on the demonstrations. First semester, credit to be arranged.  
Professor Porteus.

6. DIRECTED READING IN PSYCHOLOGY. Open only to those qualified to do independent work and show results. Either semester, credit to be arranged.  
Professors Flanders and Porteus

7. RESEARCH IN PSYCHOLOGY. An opportunity is offered for graduate students, and others properly qualified, to carry on special investigations. A thesis will be required. Either semester, credit to be arranged.  
Professors Flanders and Porteus.
PSYCHOLOGICAL AND PSYCHOPATHIC CLINIC.

Dr. S. D. Porteus, Director.

A Psychological Clinic, under the direction of Dr. S. D. Porteus, is now established in connection with the University. Its activities may be comprised under three heads—mental examinations, research, and training in certain fields of applied psychology.

Mental examinations will be conducted of cases referred to the Clinic by juvenile courts, industrial schools and other social welfare agencies. If requested mental surveys of schools and institutions will also be carried out.

Research activities will be concerned mainly with the development and adaptation of mental tests for use in the Territory. Data on various problems in racial psychology will at the same time be gathered and analyzed.

The Psychological Clinic will also provide facilities for properly qualified students to obtain practical training in methods of mental testing and psychological research. This training will be particularly applicable to students wishing to qualify themselves for work in the fields of psychology, sociology and special education. Ordinarily credit will be given for this work under Psychology 9.

SOCILOGY.

1. INTRODUCTION TO SOCIOLOGY. The social nature of man; the nature of society; social institutions; social evolution. Prerequisite: Two years of college work. First semester, 3 credits. 
   Professor Adams.

2. SOCIAL PROBLEMS. Problems of today viewed in relation to each other and to recent progress. Prerequisite: Sociology 1. Second semester, 3 credits. 
   Professor Adams.

3-4. A reading course in the literature of some field of social service to accompany Sociology 5-6. Consultations and reports monthly. Semester papers based on reading and practical work. Open only to students believed to be able to do successful work with but little direction. Credit not to exceed 3 units for each semester, to be given according to work accomplished. 
   Professor Adams.

5-6. A practical course in social service offered by the university in cooperation with some approved social service agency in Honolulu. The student will devote such time as may be determined upon to actual work under the direction of the head worker of the selected social service agency, and shall be respon-
sible to such head worker. Course to be accompanied by Sociology 3-4. Open only to students who have made appropriate arrangements for service. Credit will be based on success in the work and the number of units shall be according to the amount of work done, but in no case shall it exceed five for any one semester.

Professor Adams.

ECONOMICS.

4. Economic Geography. A study of the productions of the principal regions and of commerce. Special attention is given to the countries bordering the Pacific Ocean. Second semester, 3 credits.

Professor Adams.


7. Money and Banking. A study of the problems centering around the use of money and credit. Prerequisite: Economics 5, 6. First semester, 3 credits.

Professor Adams.

8. International Trade. Nature of the gain from international trade. How trade is financed. Commercial policies of leading countries; tariffs. Attention is given to the trade of South America and the Orient. Prerequisites: Economics 5, 6. Second semester, 3 credits.

Professor Adams.


Professor Adams.


Professor Adams.

13-14. Practical Banking. A course in actual work in the Bank of Hawaii and under the direction of the officers of the bank. Students will be given an opportunity to learn the varied sorts of banking procedure, receiving promotion to new kinds of work as their practical efficiency and other conditions may warrant. Students will work two afternoons of each week from one o'clock till the books are balanced. Open only to students who have credit in or are registered in Economics 7 and who are recommended by the professor of economics and accepted by the bank. Reports of progress will be required monthly. Two credits each semester.

Professor Adams and Mr. Richards.
Faculty appointments in Commerce are not completed and consequently the details of some of the courses cannot be presented at this time. Since this course was introduced in 1920-21, there will be no senior students in the year 1922-23, and courses 5-6 and 9-10 especially designed for Seniors will not be given.


3-4. Corporation Accounting. The corporation structure; accounting for stocks, voucher systems, valuation, depreciation, fixed property accounting, intangible assets, merchandise, stock-in-trade; cash, mercantile credits; fixed liabilities; surplus; reserves; dividends; liquidation; branch house accounting; consolidated balance sheet; profit and loss summary; accounts and reports of receivers and trustees. 3 credits each semester. *Mr. Phillips.*

5-6. Seminar in Accounting. Fundamental principles of accounting applied to specific lines of business such as that of a factory, a wholesale store, a plantation or a municipality. Each student will study some one type of business and devise a suitable system of accounts for its use, the results to be presented orally before the class and in the form of a thesis. Two credits each semester. (Not given in 1922-23.)


11. Insurance. Principles of insurance applied to life, fire and marine risks. First semester, 3 credits.


13-14. A Seminar in Commerce. The general field of study will be either the commerce of the Pacific nations or the commercial agencies of Hawaii, or both fields may be studied in alternate years. Each student will make a study of a selected business, and the study will involve the collection and analysis of data and the presentation of conclusions orally and in writing. Two credits each semester. (Not given in 1922-23.)

Detailed plans for the courses in Commerce will be announced in September.
MATHEMATICAL AND PHYSICAL SCIENCES

CHEMISTRY.

The chemical laboratories are well equipped with apparatus and supplies for work in general chemistry, qualitative analysis, elementary and advanced quantitative analysis, organic chemistry, sugar technology, and for chemical research. To specify somewhat in detail, the laboratories are supplied with platinum ware, volumetric apparatus, chemical balances, apparatus for gas and oil testing and for food analysis, a bomb calorimeter, polariscopes, spectroscopes, refractometers, and apparatus for work in physical chemistry. Gas, water, and electricity are all at hand, and the equipment of desks and hoods is well adapted to present needs.

1. GENERAL CHEMISTRY. An elementary course in general chemistry, designed to serve either as a foundation for the advanced courses in chemistry or as a general survey of the science for those who do not intend to take further work in chemistry. Two hours class room and 1 period laboratory a week. First and second semesters, 3 credits each. Professor Wrenshall

2. ADVANCED GENERAL CHEMISTRY. To be substituted for Chemistry 1 by properly qualified students who have had chemistry in a preparatory school. Lectures and recitations in which the general principles of chemistry are considered from a quantitative standpoint. Laboratory work includes elementary physico-chemical measurements, quantitative determinations and inorganic preparations. Two hours class room and 1 period laboratory a week. First and second semesters, 3 credits each. Professor Wrenshall and Mr. Kirschman.

4. QUALITATIVE ANALYSIS. Principally a laboratory course, covering the characteristic reactions of the more common metals and acids, and group separations of the same. It includes also methods for analyses of solids and methods for obtaining solutions of solids. Each student analyzes a series of from thirty to forty "unknowns," covering a wide range of inorganic substances. In a lecture or recitation period methods are given and the reactions studied. Text: "Qualitative Chemical Analysis," Noyes. Prerequisite: Chemistry 1 or 2. Two periods laboratory and one hour classroom a week. First and second semesters, 3 credits each. Professor Dillingham and Mr. Kirschman.

5. ORGANIC CHEMISTRY. The Aliphatic and Aromatic Series. Lectures, collateral reading, discussions, and frequent quizzes.
For those who specialize in chemistry and sugar technology this is accompanied by the laboratory course. Text: Perkin and Kipping's "Organic Chemistry." Prerequisite: Chemistry 1 or 2. Three hours class room a week. First and second semesters, 3 credits each.

Professor Wrenshall

6. ORGANIC CHEMISTRY LABORATORY. To be taken in conjunction with Chemistry 5. A study of the preparation, separation, and analysis of a number of organic compounds. One period laboratory a week. Text: West's "Experimental Organic Chemistry." First and second semesters, 1 credit each.

Professor Wrenshall

9. BIOLOGICAL CHEMISTRY. A course consisting of lectures, recitations, supplementary reading, and laboratory periods dealing with the chemistry of air, food constituents, plant and animal life, and nutrition. Text: Chamberlain's "Organic Agricultural Chemistry." Prerequisite: Chemistry 1 or 2. Two hours class room and one period laboratory a week. First semester, 3 credits. (Not given in 1922-23.)

Professor Dillingham

9a. AGRICULTURAL CHEMISTRY. A course consisting of recitations, supplementary reading and laboratory periods dealing with the chemistry of soils, fertilizers, and insecticides. Text: Fraps' "Principles of Agricultural Chemistry." Prerequisites: Chemistry 1 or 2 and 9. Two hours class room and 1 period laboratory a week. Second semester, 3 credits. (Not given in 1922-23.)

Professor Dillingham

10. QUANTITATIVE ANALYSIS. The principles of gravimetric and volumetric analysis, including the determination of the constants of the balance, analyses of a carefully selected series of pure compounds, calibration of glassware, acidimetry, alkalimetry, and other volumetric methods. Text: Foulk's "Quantitative Chemical Analysis." Prerequisites: Chemistry 1 or 2 and 4. One hour class room and 2 periods laboratory a week. First and second semesters, 3 credits each.

Professor Wrenshall

11. PHYSICAL CHEMISTRY. Lectures, recitations and collateral reading covering the general principles of physical chemistry, including a study of pressure-volume relations of gases; colligative properties of solutions, electrical transference and conduction, phase equilibria and thermo-chemistry. Text: Noyes and Sherill's "Principles of Chemistry." Prerequisites: Chemistry 1 or 2, and 4. Two hours a week. First semester, 2 credits. (Alternate years, offered 1922-1923.)

Mr. Kirschman

12. PHYSICAL CHEMISTRY LABORATORY. A series of carefully selected physico-chemical measurements to be taken in con-
Geology

13. Thermodynamic Chemistry. A continuation of chemistry 11. The first and second laws; energy, entropy, free energy, and fugacity; behavior of pure substances, solutions, and heterogeneous systems from an energy standpoint; electro chemistry. Prerequisite: Chemistry 11. Second semester, 2 credits. (Alternate years, offered 1922-1923.) Mr. Kirschman.

14. Thermodynamic Chemistry Laboratory. A laboratory course to be taken in conjunction with Chemistry 13. One period laboratory a week. Second semester, 1 credit. (Alternate years, offered 1922-1923.) Mr. Kirschman.

15. Chemical Literature. A library course in which articles appearing in current chemical periodicals are studied. Prerequisites: Chemistry 1 or 2, 4, and 10. To be taken in conjunction with Chemistry 16. One hour class room a week. First and second semesters, 1 credit each. Professors Dillingham and Wrenshall.

16. Advanced Quantitative Analysis. Analysis of special substances, such as foodstuffs, soils, fertilizers, ores, iron, steel, water, etc. Prerequisites: Chemistry 1 or 2, 4, and 10. Three periods laboratory a week. First and second semesters, 3 credits each. Professors Dillingham and Wrenshall.

18. Chemistry Research. The preparation of a thesis on some subject in pure or applied chemistry. Elective course, particularly for graduate students. Hours and credits to be arranged. Professors Dean, Dillingham and Wrenshall.

23. Chemistry for Engineers. A course of lectures and recitations covering the chemistry of fuels, water, lubricants, and materials used in engineering. Text: Benson’s “Industrial Chemistry for Engineering Students.” Required of Juniors or Seniors in Engineering. Prerequisite: Chemistry 1 or 2. Two exercises a week. First and second semesters, 2 credits each. (Alternate years, not given 1922-23.) Professors Dean and Wrenshall.

GEOLOGY.

1. Physical Geography. The processes which shape the surface of the earth, the forms resulting from these processes, and the suitability of the earth for the abode of man. Attention is also given to man’s dependence on climate and his plant and animal associates. This course is designed as an introduction to Economics 4. First semester, 3 credits. Assistant Professor Palmer.
2. PHYSICAL GEOLOGY. The work of the atmosphere, streams, ground water, lakes and oceans, snow and ice, earthquakes and volcanoes. The nature of the processes and the results they accomplish. Two recitations and one laboratory period a week. First semester, 3 credits. 
Assistant Professor Palmer.

3. HISTORICAL GEOLOGY. The history of the earth, its continents and ocean basins, and of its plant and animal inhabitants. Prerequisite: Geology 2. Second semester, 3 credits.
Assistant Professor Palmer.

4. GEOLOGY OF GROUND WATER. The origin, distribution, amount, circulation, and recovery of ground water, with especial reference to the Hawaiian problem. Prerequisite: Geology 2. Two recitations and one laboratory period a week. Second semester, 3 credits. 
Assistant Professor Palmer.

5. MINERALOGY. A study of the crystal systems and of the physical, chemical, and morphological criteria for the determination of minerals, leading up to the sight identification of the more common rock-forming and economic minerals. Prerequisites: Chemistry 1 or 2 and 4. One lecture and two laboratory periods a week. First semester, 3 credits. Assistant Professor Palmer.

6. METEOROLOGY, CLIMATOLOGY, AND OCEANOGRAPHY. A study of the causes and effects of atmospheric conditions, such as changes of temperature, pressure, winds, humidity, clouds, precipitations, and storm. Also a study of analogous phenomena in the ocean. Second semester, 3 credits. Assistant Professor Palmer.

MATHEMATICS.

1. PLANE TRIGONOMETRY. Prerequisites: Algebra and Plane Geometry. First semester, 3 credits. Professor Donaghho.

2. ALGEBRA AND ANALYTIC GEOMETRY. Prerequisite: Same as for Course 1. Second semester, 3 credits. Professor Donaghho.

3. ANALYTIC GEOMETRY AND TRIGONOMETRY. (a) Analytic geometry, plane and solid. (b) Spherical trigonometry. Required of Freshmen in Engineering. Prerequisites: Elementary Algebra, Plane and Solid Geometry, Plane Trigonometry. First semester, 5 credits. Professor Donaghho.

4. ALGEBRA AND INTRODUCTORY CALCULUS. (a) A short course in Advanced Algebra, including symmetric functions, partial fractions, irrational functions, simultaneous quadratic equations, binomial theorem, theory of equations, infinite series, logarithms. (b) A short course in differentiation. Required of Freshmen in Engineering. Prerequisite: Course 3. Second semester, 5 credits. Professor Donaghho.
5. **Calculus.** Differential and integral calculus. Required of Sophomores in Engineering. Prerequisite: Course 4. First semester, 3 credits.

   Professor Donaghho.

6. **Calculus.** Continuation of Course 5. Required of Sophomores in Engineering. Second semester, 3 credits.

   Professor Donaghho.

7. **Astronomy.** A brief course in practical astronomy, adapted to the needs of engineering students. Required of students in Engineering. Prerequisites: Courses 3, 4. First semester, 3 credits. (Alternates with M.E. 1; not offered in 1922-23.)

   Professor Donaghho.

8. **Astronomy.** A lecture course in descriptive astronomy. Second semester, 1 or 2 credits. (Not offered in 1922-23.)

   Professor Donaghho.

9. **Calculus.** (a) A list of comparatively simple problems, giving a rapid review of many applications of the calculus. (b) Drill problems, of increasing difficulty. Prerequisites: Courses 5 and 6. First semester, 1 or 2 credits.

   Professor Donaghho.

10. **Calculus.** Continuation of Course 9. Second semester, 1 or 2 credits.

    Professor Donaghho.

**Physics.**

The physical laboratory is equipped in mechanics and heat with substantially the material used in Millikan's *College Course* in those subjects. In light and electricity the following may be mentioned as giving an idea of the grade of apparatus: a Browning spectrometer, gratings, a Brace spectrophotometer, a Lummer-Brodhun photometer, a Kelvin balance, a Carey Foster bridge and standard resistances, a Leeds and Northrup potentiometer, a variable standard of self and mutual inductance, a Roentgen ray outfit, and a wireless receiving set with antennae. The laboratory includes a dark room, seismograph room, and a shop with engine lathe and other tools for the construction and repair of apparatus, in addition to the ordinary laboratories.

2. **General Physics.** Physics for Engineering students. Prerequisites: Mathematics 3 and 4. Parallel Courses: Mathematics 5 and 6. Two lectures and two laboratory periods weekly. First and second semesters, 4 credits each.

   Professor Romberg.

2a. **General Physics.** Mechanics, sound, light, heat, and electricity. Prerequisites: Mathematics 1 and 2. Two lectures and one laboratory period weekly. First and second semesters, 3 credits each.

   Professor Romberg.
2b. **General Physics.** Same as course 2a but an additional laboratory period each week and an additional credit each semester. Designed especially for students taking Pre-Medical course. *Professor Romberg.*

3. **Electrical Measurements.** A laboratory course. Includes measurements of current voltage, resistance, inductance, capacity, magnetic properties of iron, etc. Prerequisite: Physics 2. Two laboratory periods weekly. First semester, 2 credits. *Professor Romberg.*

4. **Advanced Physics.** Upon request more advanced courses in light, heat or electricity may be given. *Professor Romberg.*

**Biological Sciences**

**Botany.**

The University of Hawaii offers exceptional advantages for the study of botany in all its branches. There is no dormant season, so that specimens may be collected and experimental work in the field may be performed at any time. This enables the student to observe and study plants under natural conditions, thus increasing the interest in and adding to the value of the work.

The laboratories are fully equipped with microscopes and accessories, apparatus, chemicals, stains and other supplies necessary to botanical work. Water, gas and electricity are all at hand.

Attention is especially directed to the opportunities presented for work along special lines and for research. The accessibility of the coral reefs facilitates the collection of marine algae for systematic work and presents an unusual opportunity for the study of marine ecology.

The continuity of the growing season permits work to be carried on throughout the year. Conditions peculiar to the Islands introduce a number of special problems in tropical agriculture and horticulture, in addition to general problems, thus making plant physiology a particularly attractive field for study. The physiological equipment includes apparatus for the study of respiration, oxidase and catalase activity, hydrogenion concentration by electrometric or colorimetric methods, electrical conductivity and cryoscopic determinations, so that physiological investigations may be carried on by the most exact methods.

The great diversity of environmental conditions within a range
of a few miles offers excellent advantages for the study of ecology or for ecological research, particularly in plant succession.

The unusually high percentage of endemic plants in the Hawaiian flora makes the study of systematic botany especially attractive. The University offers an exceptional opportunity in this line of work, because of its excellent herbarium and the extensive collection of systematic works in the library.

The Herbarium of the University of Hawaii, in the custody of the Bishop Museum, contains the most nearly complete collection of Hawaiian plants in existence, including specimens of species which have already become extinct. The portions of the types and the co-types of plants described by Dr. W. Hillebrand, together with the types of new species, form the most valuable part of the herbarium. The former are part of an assortment of about a thousand sheets of Hawaiian plants secured by Professor Rock from the Berlin Botanical Museum, where the Hillebrand collection is deposited. In addition, portions of the types of Hawaiian plants described by Dr. Asa Gray were also secured from the Harvard Herbarium, and photographs of other Hawaiian specimens in the Harvard, Berlin, Vienna, and Paris museums were taken. Recently the herbarium has obtained duplicates of the plants collected in Hawaii by the Galatea Expedition in 1842, also of Hawaiian plants collected by A. A. Heller in 1895. Besides the Hawaiian collection the herbarium possesses a set of plants collected on the Galapagos Islands by the California Academy of Science Expedition, also specimens from Australia, the Philippines, Java, Ceylon, Cuba, Mauritius, South and Central America, and New Zealand.

The library of systematic botany contains nearly all the atlases and texts of the early voyages, and is practically complete as far as the original descriptions of Hawaiian plants are concerned. This, with the completeness of the herbarium, makes possible the preparation of monographs on various groups of Hawaiian plants. The library further includes such works as Martius' Natural History of Palms, the Flora Brasiliensis, many works on continental as well as insular floras, and Das Pflanzenreich and several periodicals.

1. General Botany. A study of the organization of the plant body of seed-bearing plants. The structure of the members of the plant body, the relation of form to function and adjustment to external conditions are given special attention during the first semester. This is followed in the second semester by a brief survey
of the principal groups from algae to seed-bearing plants with a study of the life history of representative forms. The evolution of the vegetative and reproductive organs of the plant as related to the habitat is given special attention. Two periods laboratory and one hour lecture or recitation a week. First and second semesters, 3 credits each.  

Professor Pollock.

2. Elementary Systematic Botany. A study of native and introduced plants, especially with reference to characters which are useful in determining their identity. Practice in the use of keys for identification and in the recognition of the more common forms and families on sight is emphasized. Two periods laboratory or field and one hour lecture or recitation a week. Prerequisite: Botany 1. First and second semesters, 3 credits each. (Not offered in 1922-23.)  

Professor Pollock.

3. Plant Ecology. A study of plants in relation to the environment. The use of exact methods in the measurement of factors of the environment and of the effect of these factors on the plant. Studies in migration, invasion, competition and dominance in relation to plant succession, and the use of exact methods of determining the composition of the plant community. Prerequisites: Botany 1, 2 and 4. Two periods field or laboratory with one hour lecture or recitation a week and assigned reading. First and second semesters, 3 credits each. (Not offered in 1922-23.)  

Professor Pollock.

4. General Bacteriology. An introductory course on the morphology and physiology of bacteria and the relation of these organisms to household and industrial processes and to sanitation. The preparation of culture media, methods of isolation and the study of cultural characteristics. Texts: Buchanan, "Household Bacteriology" and Moore's "Laboratory Guide." One hour recitation or lecture and two laboratory periods a week. Second semester, 3 credits.  

Professor Pollock.

5. Elementary Plant Pathology. A systematic study of plant diseases. The morphologic characters, life history and methods of control. Prerequisite: Botany 1. Two periods laboratory and one hour lecture or recitation a week. Second semester, 3 credits. Alternates with course 4. (Not offered in 1922-23.)  

Professor Pollock.

6. Plant Physiology. A study of the physiological activities of the plant, such as absorption, translocation, synthesis of food materials, respiration, growth, and reproduction. Text: Duggar's "Plant Physiology." Two periods laboratory and one
Entomology

hour lecture or recitation a week. First and second semesters, 3 credits each.

7. BOTANICAL Research. Open to students who show sufficient preparation and ability to carry on studies of an investigational nature. Hours and credits to be arranged. Professor Pollock.

ENTOMOLOGY.

The entomological collection, systemically arranged in standard cabinets, is particularly rich in economic material, and although the greater part represents Hawaiian forms, it is also well supplied with specimens from the South Seas and North America.

The laboratories are well equipped with Zeiss compound and binocular microscopes, dissecting lenses, and other necessary apparatus. A photographic room, used in common with other departments, is thoroughly equipped with cameras and other needed accessories.

Not only is the modern equipment of the University at the service of students engaged in research work, but also the several entomological collections and libraries in Honolulu are available for the use of advanced students, and add to the attractions of this location for research in entomology.

1. GENERAL Entomology. A study of the general morphology, physiology, and classification of insects. Introductory lectures on the relatives of insects, followed by a consideration of the characteristics of the orders, suborders, and principal families, with life histories and habits of typical species. Laboratory work includes a study of the structures of insects and practice in their classification. The making of a collection by each student offers practical experience in field work. One hour class room, two periods laboratory. First semester, 3 credits.

Professor Crawford.

2. Economic Entomology. Deals primarily with insects of economic importance. Lectures on the more important insect pests and methods of controlling them. Laboratory work includes a study of the several stages in the life history of our common insects, and the making of a collection showing these. Field observation is emphasized. Required in Biological Science and Agriculture. Prerequisite: Entomology 1. One hour class room and two periods laboratory. Second semester, 3 credits.

Professor Crawford.

work in entomology. Prerequisite: Entomology 1. Two periods laboratory. Second semester, 2 credits. **Professor Crawford.**

5, 6. **Toxonomy of Insects.** A laboratory course in the identification of insects, applying the study of wing venation. Special groups may be studied and original work done by the students. At least one semester required of students for advanced work in entomology. Prerequisites: Entomology 1 and 4. Two periods laboratory. First and second semesters, 2 credits each. **Professor Crawford.**

7. **Economic Entomology of Sugar Cane.** A general study of the chief insects affecting sugar cane, with laboratory work upon the life-histories of the more common local species. Special attention will be given to the very important work accomplished by insect parasites in Hawaii. Required in Sugar Technology, Agriculture Division. Prerequisite: Entomology 1. One lecture and two periods laboratory. Second semester, 3 credits. **Professor Crawford.**

10. **Medical Entomology.** Insects affecting man's person, with suggestions for their control. Lectures and assigned readings on disease-transmitting insects. Laboratory work on life-histories of available species. Two periods laboratory. Second semester, 2 credits. **Professor Crawford.**

16. **Research in Economic Entomology.** Primarily a post-graduate course. Opportunities for research work in this field are especially attractive, since the problem can be developed throughout the year without interruption. Open only to students who have shown marked ability in the study of entomology. Prerequisites: Entomology 1, 2, 4, and 5. Throughout the year, 3 or more credits a semester. **Professor Crawford.**

**ZOOLOGY.**

The courses in zoology are intended to meet the demands both of elementary and advanced students, and are arranged to take advantage of the wealth of illustrative and research material available in the Island fauna throughout the year.

The establishment of a biological laboratory for research at Waikiki, adjacent to the aquarium, offers an excellent opportunity for the investigation of marine biological problems. An extensive tropical fauna in the waters about the Hawaiian Islands makes possible an unlimited field for research in zoology. Coral reefs are easily accessible; provision will be made for plankton
work, and dredging may be done in moderate depths outside the reefs.

In addition to the general laboratory the building provides private research rooms, aquaria tables with running salt and fresh water, gas, electricity, a photographic room, and other conveniences. Advanced students and special investigators will be given every possible accommodation for the pursuance of research.

1. General Zoology. An introductory course covering in a general way the field of animal life. Biological principles are presented and a study of the structure, development, relationship, distribution, and economic importance of animals is made. Text: Galloway’s “Text Book of Zoology.” Required of pre-medical students and Sophomores in Agriculture. Two lectures and one laboratory period a week. First semester, 3 credits.

Professor Edmondson.

2. Comparative Anatomy of Vertebrates. A continuation of Course 1, including a comparative study of the systems of organs of typical vertebrates. Structural relationships of the various groups are emphasized and the progressive development from the lower to higher forms pointed out. Text: Kingsley’s “Comparative Anatomy of Vertebrates,” and other reference works. Prerequisite: Zoology 1. Required of pre-medical students. Two lectures and one laboratory period a week. Second semester, 3 credits.

Professor Edmondson.

3. Elementary Marine Problems. A course in ecological studies of marine organisms. Observations of animals in their histories of available species. Two periods laboratory. Second natural surroundings; collections on shore and reef and laboratory studies of our common marine animals. Each student will follow an independent line of investigation under the direction of the instructor. Prerequisites: Zoology 1 and 2. Two laboratory periods a week. Either semester, 2 credits. Professor Edmondson.

4. Histological Technique. A laboratory course involving methods of fixing, staining and mounting animal tissues. Studies will be made of the tissues prepared. Prerequisite: Zoology 1. Two laboratory periods a week. Either semester, 2 credits. (Not given in 1922-23.) Professor Edmondson.

7. Mammalian Anatomy. A laboratory course primarily for pre-medical students involving the careful dissection of a typical mammal. Prerequisites: Zoology 1 and 2. Two laboratory periods a week. First semester, 2 credits. Professor Edmondson.

10. Research. Students with sufficient preparation are en-
couraged to undertake the investigation of special zoological problems with reference to land, fresh water, or marine animals. Hours and credits to be arranged.  

Professor Edmondson.

PHYSIOLOGY

1. PHYSIOLOGY. A course in physiology for the general student as well as those preparing for medicine. The functions characteristic of the various systems of organs of the human body are considered in detail. Not open to freshmen. Three lectures a week. Second semester, 3 credits. (Not given in 1922-1923.)  

Professor Edmondson.

AGRICULTURE

The University of Hawaii is advantageously situated for agricultural experiments and demonstrations. The climate permits of plant growth throughout the year. The alternation of wet and dry seasons affords opportunities for work under conditions both of rainfall and irrigation. To the facilities of the University are added those of the Territorial Board of Agriculture and Forestry, the Federal Experiment Station, and the Experiment Station of the Hawaiian Sugar Planters' Association, through the generous cooperation of those institutions.

LANDS: The University farm comprises some sixty acres lying between the University buildings and the Manoa Stream. Any portion of it can be reached by a five minutes’ walk from the class rooms. About twenty acres, laid off in a permanent and definite system of one-acre fields, are under cultivation. The remainder is in pasture and unimproved fields. Though some of the latter are too rocky to plow, they may be utilized for experiments in forestry. The pasture lands are well fenced.

ROADS: A permanent graded road constitutes the axis of the farm, and branches from this give access to all cultivated fields.

IRRIGATION: A twelve-inch irrigation line from the Manoa Stream, with five-inch laterals, provides water for the cultivated fields.

LABORATORY: The agricultural laboratory is well equipped for carrying on experiments in connection either with class work or research work. It also contains a collection of typical Hawaiian soils, seeds, dried and preserved plant specimens, feed stuffs, fertilizers, and animal models.

BUILDINGS: The buildings consist of a piggery, poultry houses, milking shed, dairy, horse barn, feeding shed for cattle, sheds for farm machinery and implements, tool shed, and four cottages for laborers.
LIBRARY: An extensive collection of books dealing with agricultural subjects is found in the University Library. There is also a rather complete file of U. S. Department of Agriculture publications and bulletins, as well as those of the various state experiment stations. The leading agricultural magazines are received weekly.

LIVESTOCK: The University possesses a herd of fine dairy animals of both the Holstein and Guernsey breeds, Berkshire swine, and the necessary horses to do the farm work.

POULTRY: The breed that predominates and is used for the various feeding and housing experiments is the S.C.W. Leghorn. Representatives of some of the other leading breeds as well as some interesting crosses are also included in this department.

MACHINERY: The farm is well equipped with machinery, including a caterpillar type of farm tractor.

COURSES IN AGRICULTURE.

1. SUMMER FARM PRACTICE. A period of at least eight weeks must be spent in practical farm work, either on the University farm or some other approved farm where diversified agriculture is practised. The purpose in this course is to gain familiarity with the fundamental agricultural operations, the care of farm animals, and the care and use of implements. Required of all students in Agriculture and Agricultural division of Sugar Technology before the beginning of the Junior year. Those who can present satisfactory evidence of sufficient practical experience may be excused from this requirement. Professors Henke and Krauss.

2. SOILS. Origin, composition, tilth, and fertility of soils with special reference to the Hawaiian Islands. Required of Juniors in Agriculture and Sugar Technology, Agriculture and Chemistry divisions. Three lectures or recitations and two laboratory periods each week. First semester, 5 credits. Professor Henke.

3. CROPS. A study of the growing, harvesting and improvement of the leading tropical and temperate zone crops with special emphasis on the former. Required of Juniors in Agriculture and Sugar Technology, Agriculture and Chemistry divisions. Prerequisite, Agriculture 2. Three lectures or recitations, two laboratory periods each week. Second semester, 5 credits. Professor Krauss.

4. SUGAR CANE PRODUCTION. A study of the varieties of cane, their planting, irrigation, fertilization, and harvesting. Includes
visits to various experimental fields and plantations. Students are required to keep Wednesdays as free from other work as possible for field trips. Required of Seniors in Agriculture and Sugar Technology, Agriculture and Chemistry divisions. Prerequisite: Agriculture 2 and 3. Lectures, recitations, and laboratory periods. First semester, 4 credits.

5. Genetics. A study of the underlying principles and their practical application in the improvement of plants and animals. Required of Sophomores in Agriculture and Sugar Technology, Agriculture division. Lectures, recitations and laboratory work. Second semester, 3 credits.

6. Animal Husbandry. A general study of the important breeds of horses, cattle, sheep and swine, their feeding, care and management. Required of Seniors in Agriculture. Lectures, recitations, and laboratory work. First semester, 3 credits.

7. Agricultural Thesis. Advanced individual work in field and laboratory, with accompanying library work. Required of Seniors in Agriculture. Second semester, 6 to 10 credits.

8. Dairying. A study of dairy cows, the production, handling, and marketing of milk and milk products, milk testing and separation, butter-making, etc. Required of Seniors in Agriculture. Two lectures or recitations, and one laboratory period a week. Second semester, 3 credits.

9. Poultry Husbandry. A study of poultry types and breeds; their feeding, housing, marketing, and general care; the operation and care of incubators and brooders. Required of Seniors in Agriculture. Two lectures or recitations and one laboratory period a week. Second semester, 3 credits.

10. Research Work. Situated in a climate where out-of-door experimental work can be carried on the year round, Hawaii affords ideal opportunities for research in tropical agriculture. First and second semesters. Credit by arrangement.


12. Forestry. A study of general forestry problems, with special reference to those of the Hawaiian Islands. The course is given every other year, alternating with Horticulture. Required of Juniors or Seniors in Agriculture. (Given in 1922-1923.) First semester, 3 credits.
13. **Horticulture.** A general study of horticulture with special reference to the fruits of the Hawaiian Islands. The course is given every other year, alternating with Forestry. Required of Juniors and Seniors in Agriculture and Sugar Technology, Agriculture division. First semester, 3 credits.

*Professor Krauss.*

14. **Irrigation Measurements.** An introduction to the principles governing the occurrence, development, distribution, and measurement of water supplies for irrigation. The course will include class room discussion of the construction and operation of recording devices, the laws of flow in open channels and pipes, and discharge through orifices and over weirs, and some practice in measurement of water. First semester, 2 credits.

*Assistant Professor Palmer.*

**ENGINEERING**

**Drawing.** The drafting-room equipment includes a number of first-class adjustable tables and desks, fitted with all accessories, complete for work; also an extensive outfit for blue printing, and many special instruments, such as parallel attachments for tables, railroad curves, splines, protractors, planimeters, special scales, drafting machines, and computing instruments.

**Testing Laboratory.** In connection with the wood-working and forge laboratory, the University maintains a laboratory for testing materials of construction, including wood, iron, steel, and cement, and also provides facilities for fuel testing. The equipment of the testing laboratory includes a 150,000 lb. capacity Riehle universal testing machine, with automatic and autographic attachments, for tension, compression, and transverse tests of large specimens; a small Riehle machine for testing specimens up to 10,000 lbs. in transverse strain; an Olsen torsion machine for torsion tests up to 50,000 in.-lbs.; a special Olsen machine of 40,000 lbs. capacity for compression tests of cement and concrete cubes; and a standard Riehle 2,000 lb. machine for briquettes. These machines are provided with a complete assortment of the necessary special instruments, such as extensometers, compressometers, deflectometers, and gauges, thus making possible the accurate measurement of deformation over a wide range of tests. In addition to the above, the testing laboratory also includes an extensive equipment of molds, sieves, Vicat needles, moist closets, drying ovens, and other minor accessories necessary to carry out
practical tests of cements and concrete in any of the usual forms.

A section of the laboratory is fitted with the essential apparatus for the physical testing of road materials. This equipment includes a Page impact machine, Dorry hardness machine, Deval abrasion machine, Page briquette-forming machine, together with core drills, sieves and miscellaneous asphalt-testing apparatus.

LIBRARY. Students in engineering are encouraged and required to make frequent use of the library in connection with the regular courses of instruction. The library contains a large and well-selected collection of standard technical books, besides many periodicals pertaining especially to engineering. The collection includes sets of Transactions and Proceedings of the four National Engineering Societies, together with bound volumes of the Engineering News back to and including the year 1876, which, taken together, constitute an excellent working library of current practice in each of the main branches of engineering.

DRAWING AND MACHINE DESIGN (M.D.).

M.D. 1. MECHANICAL AND FREEHAND DRAWING. Elementary drafting, which includes freehand sketching, freehand lettering, use of instruments, conventional sections, drawing from copies and models (using parts of machines from the mechanical laboratory as models), the making of shop drawings, shading, tracing and blue-printing; in which particular attention is given to lettering, general neatness, and accuracy. Text: French's "Engineering Drawing." The cost of materials and instruments required is about $50.00. First and second semesters, 2 credits each. Professor C. Andrews.

M.D. 3. DESCRIPTIVE GEOMETRY. Descriptive geometry, with special reference to its application to practical work in the drafting office, embracing lectures and drafting-room practice in which a large number of problems of a practical nature are worked out. Text: Wm. G. Smith's "Practical Descriptive Geometry." Pre-requisites: M.D. 1, and Math. 3 and 4. Sophomores in Engineering and Sugar Technology, Sugar-house Engineering division. First and second semesters, 2 credits each. Professor Keller.

M.D. 4. ELEMENTARY MECHANICAL DRAWING. A course covering free-hand lettering, elementary mechanical drawing, tracing and blue printing. The work is largely instrumental and is designed to be followed in the second semester by freehand drawing (see M.D. 5). Students electing this course who have had sufficient preparation will be given problems in elementary graphics, conventional topographic signs and farm building plans.
The cost of instruments and supplies is about $40.00. Elective for freshmen both colleges. Recommended elective for freshmen, Agriculture and Sugar Technology excepting Engineering division. First semester, 2 credits. Professor Keller.

M.D. 5. Elementary Freehand Drawing. Fundamental principles of freehand drawing embracing the study of perspective, drawing in outline, light and shade; drawing from memory. Designed as a continuation of M.D. 4. Elective for freshmen both colleges. Recommended elective freshmen in Agriculture and Sugar Technology except Engineering division. Second semester, 2 credits. Professor Chipman and Miss Harbaugh.

MECHANICAL ENGINEERING (M.E.).

M. E. 1. Steam Machinery. The fundamental laws governing the transformation of heat into work, embracing the properties of gases, laws of expansion, heat measurement, the mechanical equivalent of heat, properties of steam, construction and study of steam tables, and heat analysis as applied to steam and internal combustion engines. The solution of a large number of problems of a practical nature is required. Lectures and recitations. Prerequisites: Math. 5 & 6, M. D. 3. Senior Civil Engineers and Juniors in Sugar Technology, Sugar-house Engineering division. First semester, 3 credits. (Alternates with C.E. 7, given in 1922-1923.) Professor Young.

M. E. 2. Materials of Engineering. Lectures and recitations on the properties and requirements for materials used in engineering construction, including wood, iron, steel, and concrete. Methods of manufacture as affecting quality of material, standard tests employed to secure the proper grade of material, and standard specifications. Prerequisites: Math. 5 & 6, M. D. 3. Juniors in Civil Engineering. First and second semesters, 2 credits each. (Alternates with Chemistry 23, given in 1922-1923.) Professor Keller.


M. E. 6. Engineering of Sugar Plants. Lectures and drafting-room exercises involving the application of the fundamental principles of engineering practice to modern sugar works, including grinding and evaporating machinery, boiler and engine plant, conveying machinery, industrial railways, arrangement of buildings, layout of plant, and other general and special engineer-
ENGINEERING LABORATORY (X. E.)

X. E. 4. MATERIALS LABORATORY. Laboratory practice in testing the materials of construction, involving complete tests of specimens of wood, iron, steel, and concrete in their various forms. Special attention is given to the preparation and testing of specimens of concrete, both plain and reinforced, in the form of cubes, columns, beams, and girders. The facilities available for such work are ample, and the instruction given covers a large number of practical tests, thus affording the student valuable means of familiarizing himself with the behavior of such materials under stress. Prerequisite: C. E. 2. Juniors in Civil Engineering and Sugar Technology, Sugar-house Engineering division. Second semester, 3 credits for students in Civil Engineering and 2 credits for students in Sugar-house Engineering division of Sugar Technology.

Professor Keller
CIVIL ENGINEERING (C. E.).

C. E. 1. SURVEYING. Plane surveying, supplemented by lectures and drafting-room exercises. The use of the chain, tape, transit and level, and practice in the manipulation of these instruments in the field. The drafting-room work includes practice in the computations that the surveyor is called upon to make, and plotting from original notes. Text: Breed and Hosmer’s “Principles and Practice of Surveying,” Vol. 1. Prerequisites: M. D. 7, Math. 1 & 2, or 3 & 4. Required of Freshmen in Civil Engineering and Sugar Technology, Sugar-house Engineering division; Sophomores in Sugar Technology, Agricultural division. Elective by Sophomores in Agriculture, General Science and Sugar Technology, Chemistry division. First and second semesters, 2 credits each. Professor C. Andrews.

C. E. 2. ANALYTICAL AND APPLIED MECHANICS. The fundamental principles of the various branches of applied mechanics, and the use of higher mathematics in the solution of problems relating to engineering work. Includes the study of analytical statics, composition and resolution of forces, application to rigid bodies, centers of gravity, centers of mass, friction, work, flexible cords, funicular polygon, the catenary, and loaded chords, together with a large number of problems to illustrate special and general methods of solution. The analytical theory of kinetics is developed, and special attention is given to the laws of motion, variable forces, constrained motion, central forces, impact, energy, dynamics of prime movers, moments of inertia, rotary motion, and the simple and compound pendulum. Text: Poorman’s “Applied Mechanics.” Prerequisites: Math. 5 & 6. Juniors in Civil Engineering and Sugar Technology, Sugar-house Engineering division. First semester, 4 credits. Professor C. Andrews.

C. E. 4. Surveying and Drawing. Recitation and field and drafting work, covering the various methods of making and plotting topographical surveys, including the theory and use of the plane table, stadia, sextant, and solar attachment to the transit. Students are required to make and reduce observations illustrating the methods of base line measurement, triangulation, and precise leveling. Text: Breed and Hosmer's "Principles and Practice of Surveying," Vol. II. Prerequisites: Math. 5 & 6, and C. E. 1. Juniors in Civil Engineering. First and second semesters, 3 credits. (Alternates with C. E. 10. Not offered in 1922-23.) Professor C. Andrews.

C. E. 5. Structural Design. Lectures and drafting exercises, in which the student computes the stresses and designs the members of a plate girder bridge and a steel building truss. Includes the making of complete detail drawings and specifications, done under close supervision and carefully checked. The important general points are covered by lectures, minor points being taken up with individual students during the progress of the work. Text: Merriam and Jacoby's "Roofs and Bridges," Parts I and II. Seniors in Civil Engineering. First semester, 3 credits. Professor Young.

C. E. 6. Bridge Design. Lectures and drafting exercises following C. E. 5 and covering the complete design of a single track through bridge for a given conventional loading, and including all computation, the making of complete engineer's drawings, and the specifications. Text: Merriam and Jacoby's "Roofs and Bridges," Parts II and III. Seniors in Civil Engineering. Second semester, 3 credits. Professor Young.

C. E. 7. Hydraulics. Lectures and recitations covering the more important principles of hydraulics which govern and treat of fluids at rest, hydrostatic pressure, manometers, and Pitot tube, Venturi meter, strength of pipes, pressure of water against walls and dams, earth pressure, barometric leveling, flow of liquids through pipes and over weirs, fluid friction, loss of head, flow of water in open channels, Kutter's formula, impulse and resistance of fluids, the Pelton water wheel, overshot, breast and undershot wheels; turbines and reaction wheels, and the general practice of turbine testing. The laboratory practice includes the gauging and measurement of flow in channels and over weirs, tests of water motors of various types, tests of hydraulic rams, and pumping machinery of various kinds. Text: Daugherty's "Hydraulics." Prerequisites: C. E. 2 & 3. Seniors in Civil Engineering and Sugar Technology, Sugar-house Engineering di-
C. E. 8. HYDRAULIC CONSTRUCTION. Lectures, recitations and reports covering the more important hydraulic constructions. The work is divided into three parts, as follows: water storage, including reservoir capacity, available sources of supply, the design of spillways and flood channels; irrigation engineering, including methods of distribution, construction of flumes, tunnels, and ditches, and also touching upon the agricultural problems involved; harbor engineering, including a study of various types of wharves, methods of dredging, and harbor improvement. Prerequisites: C. E. 2, 3 & 7. Seniors in Civil Engineering. Second semester, 3 credits. (Alternates with C. E. 9; not given in 1922-23.)

Professor Keller.

C. E. 9. MUNICIPAL ENGINEERING. Lectures and recitations, including the general principles and methods of construction and cost; city water supply; waterworks, and fire protection; the methods of sewage and garbage disposal; the hydraulics of sewers; the relation of rainfall to storm flow. Part of the course is devoted to municipal transportation problems now handled by the various public service commissions. Texts: Turnearue & Russell's "Public Water Supply"; Metcalf & Eddy, "American Sewerage Practice," Vol. III.; Robinson's "Civic Art"; Lewis' "Planning of the Modern City"; Engineering Periodicals and U.S. Government Reports. Juniors in Civil Engineering. First and second semesters, 3 credits each. (Alternates with C. E. 7, and C. E. 8, and will be given in 1922-23.)

Professor Keller.

C. E. 10. SURVEYING. Railroad surveying, construction, and economics. Field work and recitations, covering the methods of establishing grade lines, laying out circular and transition curves, the reconnaissance, preliminary and location surveys for a railroad; earth work computation, maps, profiles; plans of structures, and estimates. Texts: Raymond's "Railroad Surveying"; Webb's "Railroad Construction"; Nagle's "Field Manual for Railroad Engineers." Prerequisites: C. E. 1, Math. 5 & 6. Seniors in Civil Engineering. First and second semesters, 3 credits each. (Alternates with C. E. 4, and will be given in 1922-23.)

Professor C. Andrews.

C. E. 12. CONCRETE AND MASONRY STRUCTURES. The properties of stone, brick, and concrete, and their uses in engineering structures, such as foundations, retaining walls, piers, abutments, and dams; including the design of arches and dams in stone, and the design of reinforced concrete structures, such as beams, gird-

C. E. 15. Roads and Pavements. Lectures, laboratory practice in testing materials of road construction, and inspection of local types of pavements. The lecture work covers the construction and maintenance of various types of roads and city pavements, special reference being made to local types. Prior to inspection trips, the specifications under which the road to be visited was built are studied. In the laboratory the student becomes familiar with the type machines used in testing road materials and the methods of performing such tests. Text: Blanchard and Drowne's "Textbook on Highway Engineering." Prerequisites: C. E. 1 and M. D. 1. Sophomores in Civil Engineering. First and second semesters, 2 credits each. Professor Keller.

ELECTRICAL ENGINEERING (E. E.).


SUGAR TECHNOLOGY

The sugar laboratory contains a recent model Schmidt and Haensch saccharimeter, a Landolt-Lippich polariscope for monochromatic light, a Stammer colorimeter, an Abbe-Zeiss and an immersion refractometer, a standardized comparator for measuring tube lengths, a small hand mill, and practically all the miscellaneous apparatus needed in a sugar factory laboratory. A number of old model polariscopes of different types have been donated by plantations, and are of value in demonstrating the theory and construction of the modern instrument.

1. Sugar Analysis. Laboratory and lecture course intended to fit the student for the position of chemist in a sugar-house
laboratory, or to give him a good working knowledge of chemistry as applied to the manufacture of raw and refined sugar. Among the topics taken up are the theory and construction of the polariscope and the refractometer, the calibration and testing of these and other laboratory apparatus, general laboratory routine, and the fitting out of a sugar laboratory, the methods of sampling and of analysis of the various products met with in a cane sugar factory. In addition, as time permits, instruction will be given in soil, water, and flue gas analysis.

In order to take this course the student must have a working knowledge of general chemistry and laboratory manipulations. Prerequisites or parallel, Chemistry 1 or 2 and 4. Required of Juniors in Sugar Technology. One lecture and two laboratory periods a week. First and second semesters, 3 credits each.

Professor Dillingham.

1a. Sugar-House Calculations. A lecture and recitation period in which instruction is given in sugar-house calculations, in working out problems involving the yield and losses ordinarily encountered in actual factory work, and in making out typical laboratory reports such as are required by plantations in the Hawaiian Islands. Prerequisite: S.T. 1 and 3. Seniors in Sugar Technology. First semester, 1 credit.

Professor Dillingham.

2. Sugar Manufacture. A series of lectures and recitations on the manufacture of sugar, taking up in detail a discussion of the various types of machinery and apparatus employed in the best modern factories and the principles involved in their use, embodying such topics as multiple milling, the effect of various types of roller grooving, pressure and maceration on extraction, clarification of juices, multiple effect evaporation, the economical use of steam, sugar boiling, crystallization in motion, and the curing, drying, and preparation of sugars for the market. Though this is primarily a course for cane sugar men, a brief description of the methods employed in beet sugar manufacture and refinery practice is also given, together with a discussion of the various processes for making white sugar direct from the cane. Required of Seniors in Sugar Technology. Prerequisite: S.T. 1 and 3. Three hours a week class room. First semester, 3 credits.

Mr. McAlup

3. Summer Practice. During the summer vacation between the Junior and Senior years, students in Sugar Technology will be required to spend at least 8 weeks in practical field or mill work. Those taking field work become Student Assistants in the Experiment Station of the Hawaiian Sugar Planters' Association. Those taking factory work enter one of the mills, where they are
under the direction of the manager and work at various stations under regular factory conditions. Academic credit for this will be granted on the presentation of a satisfactory report in duplicate. Prerequisite: S. T. 1. Six credits.

4. FIELD PRACTICE. During the second semester of the Senior year in the Agricultural Division the student does his work in the capacity of a Student Assistant in the Experiment Station of the Hawaiian Sugar Planters’ Association. He may serve a part or all of the time at the Waipio Substation, or he may be sent out as an assistant to the field men in charge of experimental work on the various plantations. A written report in duplicate must be submitted at the end of the semester. Sixteen credits.

5. FACTORY PRACTICE. Seniors in the Sugar-house Engineering division spend the second semester of Senior year as apprentices in the factory of one of the plantations. They are under the regular discipline of the factory and are given different stations in the mill, boiling-house and laboratory so that they may become familiar with the various pieces of equipment and their operation. A written report in duplicate covering the lay-out of the mill and its operation must be submitted at the close of the work. Sixteen credits.

N. B. Seniors in the chemistry division of Sugar Technology may elect either Sug. Tech. 4 or Sug. Tech. 5, after consultation with their adviser.

HOME ECONOMICS

The Division of Art and Design is provided with three well-lighted rooms in the main building, a small kiln-room equipped for firing purposes, offices, a sewing laboratory, and a store-room for supplies. The Ceramic and Drawing studios are equipped with casts, drawing models, color charts, Maxwell wheel and disks, pottery, Oriental brasses, illustrative designs, photographs and stereopticon slides on architectural and allied subjects. The sewing laboratory is equipped with cutting tables, machines, dress forms, fitting-room, lockers, electric iron, pressing table, charts and illustrative material sufficient for a class of twelve students at one time.

The Division of Household Science is provided with a cooking laboratory, a dining-room, and an office. The cooking laboratory is equipped with work tables sufficient to accommodate a class of sixteen students at a time, individual cooking outfits for practical work; gas, oil, and electric stoves; scientific apparatus, charts, and illustrative material; the dining-room is furnished with all necessaries for serving of meals.
1. **Freehand Drawing.** Study of type models; freehand perspective; drawing in outline and in light and shade from ornamental forms, natural objects, and casts; memory sketching; charcoal composition. Open to regular and special students. Required of students in Home Economics. Students who have received entrance credits in freehand drawing and perspective, or have otherwise presented satisfactory evidence of preparation, are given more advanced work. Two periods laboratory. First and second semesters, 2 credits each.

*Professor Chipman and Miss Harbaugh.*

3. **Color and Design.** Theory of color, study of color values and harmonies, making of color scales and charts; instruction in the principles and practice of design as expressed in art line, dark and light, and color. Costume design based on the foregoing principles and including analysis of individual types. Brief survey of the history of costume. Lectures and laboratory work. Prerequisite: Course 1. First and second semesters, 3 credits each.

*Professor Chipman and Miss Harbaugh.*

4. **Interior Decoration.** Theory and practice in the application of principles of design and color to interior decoration in relation to architecture; technical rendering of problems in line and color; study of historic styles in furniture; designing of wall hangings and other decorative objects; interpretation of designs in suitable materials. Lectures and laboratory. Prerequisite: Course 3. First and second semesters, 3 credits each. (Alternates with course 7. Given in 1922-23.)

*Professor Chipman and Miss Harbaugh.*

5. **History of Architecture.** Study of the development of architectural styles of the ancient Egyptians, Chaldeans, Greeks, and Romans, and of the Medieval (Byzantine, Romanesque, Gothic) and Renaissance periods. Consideration of conditions, materials, etc., in their effect upon architecture. First semester, 2 credits.

*Professor Chipman.*

6. **History of Sculpture and Painting.** Historical and appreciative study of ancient and medieval sculpture and of the great schools of painting. Discussion of principles of art structure and composition in relation to the masterpieces. Prerequisite; Course 5. Second semester, 2 credits.

*Professor Chipman.*
Art and Design

7. Ceramic Design and Porcelain Decoration. Study of the principles of proportion and subordination which govern line and area composition and their application to specific problems in original design; discussion of the methods of pottery and porcelain manufacture and of the composition of ceramic colors, glazes, lustres, and metals; study of historic ceramics; consideration of good shapes in porcelain; application of original designs to suitable porcelain forms in mediums adapted to the ware used; practice in the firing of ceramic ware. Lectures and laboratory. Prerequisite: Course 3. First and second semesters, 3 credits each. (Alternates with course 4. Not offered in 1922-23.)

Professor Chipman and Miss Harbaugh.

N. B.—All work of students in Courses 1, 3, 4, and 7 remains in the department during the college year. The University reserves the right to retain for a period of two years such work as it may select, and to keep permanently one piece of each student's work. Credit will be given for extra work above that required in the outlined courses.

8. Textiles and Elementary Garment-Making. A study of fabrics, processes of manufacture, and economic value and uses; the use and altering of patterns, and elementary garment-making. Lectures, discussions, and laboratory work. Required of students in Home Economics. Open to regular and special students. Two semesters, 3 credits each.

Assistant Professor Dahl.

9. Dressmaking and Designing. The principles of dressmaking; the taking of accurate measurements; drafting of patterns, the choice and economical cutting of material; crinoline modeling, the designing and making of gowns, decorative needlework, and trimmings. Lectures, discussions, and laboratory work. Prerequisites: A. & D. 1 and 8; prerequisite or parallel; A. & D. 3. Two semesters, 3 credits each. Assistant Professor Dahl.

10. Millinery. The construction and trimming of hats, beginning with the use of foundation materials; making of wire and buckram frames from given dimensions; copying from models and pictures; original designs. Prerequisites: A. & D. 8 and 9. Two semesters, 3 credits each. (Given in alternate years; not offered in 1922-23.)

Assistant Professor Dahl.

12. Advanced Dressmaking. Making of gowns from original designs, drafting and making of suits, coats, and capes. Prerequisites: A. & D. 8 and 9. Two semesters, 2 credits each. (Given in alternate years, offered in 1922-23.)

Assistant Professor Dahl.
1. **Elementary Food Selection and Preparation.** Production, manufacture, and composition of typical foods, classified into food principles. Study of fundamental principles governing selection and preparation of foods. Preparation of common foods. Lectures and laboratory work. Not open to students presenting entrance credit in Home Economics. First and second semesters, 3 credits each.

2. **Food Economics.** Advanced selection and preparation of foods. Practice in menu making with reference to the season, cost, availability of foods, and combinations suitable to existing conditions, marketing, cooking, and serving of the daily home meal and meals for special occasions. Discussions and laboratory work covering kitchen equipment, economy of labor and fuels. Prerequisite: Entrance credit in Household Science or H. S. 1; prerequisite or parallel: Chemistry 1 or 2. First and second semesters, 3 credits each.

3. **Nutrition.** The nutritive value of foods; digestion, functions of foods, food requirements under varying conditions of climate, occupation, age and health, dietaries, menu planning; preparation of food for the sick and convalescent. Prerequisite: Physiology 1, H. S. 2; prerequisite or parallel: Chemistry 5 and 6 or 9. First semester, 3 credits.

4. **Food Investigation.** The working out of special problems in connection with foods; the economic side of the food question; uses and application of preservatives; marketing, domestic storage; experimental work with food materials raised in the Hawaiian Islands. Laboratory work, reading and discussions. Prerequisites: H. S. 2 and 3. Second semester, 3 credits.

5. **Housewifery.** A study in the efficient care of the house from the chemical, economic, and practical standpoints, including such matters as the treatment of floors, walls, and woodwork, the removal of stains, the cleaning of rugs and draperies, laundering and renovation of household linen and clothing, and selection of cleaning apparatus and machinery. Laboratory work, readings, and discussions. First semester, 3 credits.

6. **Household Sanitation.** The house as a factor in health. Situation, surroundings, ventilation, heating, drainage, plumbing, lighting, and furnishings of the house. Household pests and

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**N.B.**—The courses announced here are subject to revision by Miss Miller, recently appointed as Assistant Professor of Household Science.
their eradication. The study of the household in its relation to
the health of the community. Investigations will be made of gen-
eral sanitary conditions from a practical and scientific stand-
point with reference to the needs of the community, the household,
and the school. Prerequisite: Entomology 10 and Botany 4. Sec-
ond semester, 3 credits.

7. HOME NURSING AND FIRST AID. Instruction in domestic
emergencies and first aid; communicable diseases, their transmis-
sion and prevention; care of the sick room; observation and care of
the patient; food for the sick. First or second semester, 2 credits.

**PHYSICAL EDUCATION**

**MEN.**

During the first two years of the course, regular students and
special students who are registered for eight or more hours of
work are required to take a minimum of two hours per week of
physical education or military drill. Students suffering from
physical disability may be given special forms of exercise.

**WOMEN.**

All women under twenty-five years of age and regis-
tered as regular students or as special students taking ten or more credit
hours a semester are required to take a minimum of one credit
hour per week of physical education. Exemption from this re-
quirement may be obtained only by permission of the Faculty
Committee.

3. **PHYSICAL EDUCATION.** Women students. Weekly reports
are required on forms furnished by the University showing the
amount and character of exercise taken. First and second year
students are required to take two periods per week of supervised
exercise. This work takes the form of calisthenics, games, swim-
mimg and group dancing. Juniors and Seniors whose weekly re-
ports show that they are getting at least five hours per week of
suitable exercise may, at the discretion of the instructor, be ex-
cused from the class periods. First and second semesters, 1 credit
each.

**MILITARY SCIENCE AND TACTICS**

All male students who are citizens of the United States and
physically fit are required to enroll during their first two years
in the Reserve Officers’ Training Corps, and to devote three
periods a week of not less than one hour each to military science
and training. Two of the three periods are devoted to drill
practice and one period to theoretical training. Students who wish may attend a summer camp.

At the end of the basic course a student who so elects and who is selected by the President of the University and the Professor of Military Science and Tactics, and who signs a form of written agreement prescribed by the Secretary of War, may be enrolled for two more years of service in the Reserve Officers' Training Corps. Such students are required to devote five hours a week to an advanced course in military science and training throughout two years, and the completion of this work becomes for them a prerequisite for graduation. They are required also to attend one summer camp of six weeks' duration. While enrolled in the Advanced Course, except the time at camp, they receive commutation of rations at the authorized rate; at camp, the ration itself is furnished and pay at the rate of one dollar per day.

**First Year Basic Course.**

1a, 2a. *Practical.* Organization, military courtesy and discipline, infantry drill regulations, infantry weapons, care and handling of infantry arms and equipment, guard duty, rifle marksmanship, minor tactics, physical training. Two hours a week. Both semesters, 1 credit each.

*Colonel Clarke, Capt. Rudelius, Capt. M'Neill, Lieut. Aaron*

1b, 2b. *Theoretical.* Infantry drill regulations, care and handling of arms and equipment, rifle marksmanship, minor tactics, military courtesy. One hour a week. Both semesters, 1 credit each.

*Colonel Clarke, Capt. Rudelius, Capt. M'Neill, Lieut. Aaron*

**Second Year Basic Course.**

3a, 4a. *Practical.* Review of subjects given in 1a-2a, map reading and military sketching, automatic rifle, bayonet drill, hand and rifle grenades, military hygiene, sanitation and first aid. Two hours a week. Both semesters, 1 credit each.

*Colonel Clarke, Capt. Rudelius, Capt. M'Neill, Lieut. Aaron*

3b, 4b. *Theoretical.* Advanced work in subjects 1b-2b, map reading and military sketching, automatic rifle, military hygiene. One hour a week. Both semesters, 1 credit each.

*Colonel Clarke, Capt. Rudelius, Capt. M'Neill, Lieut. Aaron*
Military Science

First Year Advanced Course.

5a, 6a. Practical. Duties of officers and non-commissioned officers, including all subjects in 1a, 2a, 3a, 4a, coaching gallery and range practice, troop leading. Three hours a week. Both semesters, 2 credits each.

Colonel Clarke, Capt. Rudelius, Capt. M'Neill, Lieut. Aaron

5b, 6b. Theoretical. Camp sanitation and care of troops in the field, musketry, minor tactics, administration, international and military law, military policy of the United States, field engineering, liaison for all arms. Two hours a week. Both semesters, 2 credits each.

Colonel Clarke, Capt. Rudelius, Capt. M'Neill, Lieut. Aaron

Second Year Advanced Course.

7a, 8a. Practical. Duties of officers and noncommissioned officers including advanced work in subjects 5a-6a, and solutions of problems in musketry and minor tactics. Three hours a week. Both semesters, 2 credits each.

Colonel Clarke, Capt. Rudelius, Capt. M'Neill, Lieut. Aaron

7b, 8b. Theoretical. Company administration, military history and policy of the United States, study of the world war, court-martial, rules of land warfare, musketry solution of problems in minor tactics. Two hours a week. Both semesters, 2 credits each.

Colonel Clarke, Capt. Rudelius, Capt. M'Neill, Lieut. Aaron
UNIVERSITY EXTENSION SERVICE

"Making the Territory of Hawaii Our Campus."

The University of Hawaii is developing a program of extension service whereby some of its educational facilities may be made of larger and wider use throughout the Territory. In equipping for its primary function of educating the youth of Hawaii the University has provided scientific laboratories, an extensive library and a corps of specialists as instructors. So far as it is compatible with its primary function, this equipment is offered for service beyond the University campus.

The Extension Service Department of the University of Hawaii is directing its work along several lines, as follows:

1. Extension Classes.
2. Correspondence Instruction.
3. Lectures and Informal Talks.
4. Public Service.

EXTENSION CLASSES

Extension courses open to all interested persons are offered by the University. The length of these courses is variable, from one week to several months. Courses in the following subjects have been given during the year 1921-22:

1. EDUCATIONAL PROBLEMS. A study of problems in secondary schools, conducted by Professor Flanders, the class meeting once a week during the first semester, at the Library of Hawaii.

2. JAPANESE HISTORY. A course of six weekly lectures given by Professor Harada.

3. MARINE ZOOLOGY. A course of twelve weekly lectures given at the C. M. Cooke Marine Biological Laboratory, Waikiki, by Professor Edmondson.

4. POPULAR ASTRONOMY. A series of monthly demonstrations and lectures given at the Kaimuki Observatory by Mr. Edwin Bryan under the direction of Professor Donaghho.

5. APPLIED HORTICULTURE. An intensive laboratory and field study of gardening and fruit growing, conducted by Professor Krauss, the class meeting once a week on the University Farm through a period of fifteen weeks.
6. Poultry Culture. A practical, intensive course in methods of raising poultry for profit, conducted by Professor Krauss, the class meeting once a week on the University Farm through a period of twenty weeks.

7. Bee Culture. A six weeks course in bee-keeping conducted by Mr. E. C. Smith of Honolulu and Professor Crawford, the class meeting once a week at the campus apiary.

8. Pineapple Production. A short, intensive course in scientific principles of pineapple production, offered particularly for experienced field men. Three lectures and laboratory or field periods each day for one week, March 27 to April 1. Lectures by several members of the University faculty and local pineapple experts.

Total enrollment in these extension courses during the year was about 350.

CORRESPONDENCE INSTRUCTION

One correspondence course was offered this year in Elementary Principles of Agriculture. This course consists of about twenty lessons mimeographed and sent out one each week. The scope of the lesson topics is broad, the lessons being prepared by several members of the University faculty. About 190 persons throughout the Territory are enrolled in this course, distributed geographically as follows: Island of Hawaii 74, Oahu 68, Kauai 24, Maui 15, Molokai 5, United States mainland 2, Dominican Republic 1.

Somewhat in the nature of a correspondence course is the weekly circular letter being sent out free to subscribers, called "The Extension Letter." This carries agricultural information and news of local interest throughout the Territory.

LECTURES

A program of informal lectures by faculty members has been given by the University throughout the Islands. A detailed announcement of this service together with a list of lecture subjects will be mailed upon request.

PUBLIC SERVICE

Under this head are included miscellaneous forms of public service such as technical laboratory and field investigations, expert consultations, dissemination of information through the press or otherwise, special correspondence, assistance in marketing, etc.

For further details regarding the University Extension Service, address its Director, Professor D. L. Crawford.
DEGREES CONFERRED
TENTH ANNUAL COMMENCEMENT, JUNE 6, 1921.

MASTER OF SCIENCE
John Howard Midkiff.
Inez Wheeler Westgate.
Ruth Atwater Wood.

MASTER OF ARTS.
Elsa Margaret Kluegel.

BACHELOR OF SCIENCE IN AGRICULTURE.
Toshisuke Shimizu.

BACHELOR OF SCIENCE IN CIVIL ENGINEERING.
Daniel Kealalio.

BACHELOR OF SCIENCE IN GENERAL SCIENCE.
Raphael Awan Chiu Ai.
Fook Tan Ching.
Giichi Fujimoto.
Ruth Shook Jin Hoe.
En Fon Lee-Toma.
Kiyoshi Hosoi, degree Sept. 22, 1921.
Thomas Cochrane McVeagh, degree June 30, 1921.

BACHELOR OF SCIENCE IN SUGAR TECHNOLOGY.
Francis Antonius Emilius Abel.
Frank Walton Broadbent.
Wilnorman King.
Herman Kofoad Stender.
Lionel Verner Brash.
George Cutter Bromley.
Harry Lea Denison.
Charles Frederick Poole.
Scholarships

UNDERGRADUATES WHO HOLD UNIVERSITY SCHOLARSHIPS

Honolulu Chamber of Commerce Freshman Scholarship,
ERNEST M. TANI.

Honolulu Chamber of Commerce Agricultural Scholarship,
PETER J. HANOHANO.

University Club Sophomore Scholarship,
RICHARD LUM.

Hilo Board of Trade Scholarship,
RICHARD CHOI YONG.

Honolulu Rotary Club Scholarship,
HENRY MARTIN BINDT.
CLIFFORD D. McGREW,

Prince Fushimi Fund Scholarship,
KAKUICHI OSHIMO,
KEIJI SUZUKI.

Maui Women's Club Scholarship.
UME YANAGI.

Central Union Church Special Scholarship.
JANET M. ROSS.

The Ruth Scudder Memorial Scholarship, controlled by the Women's Society of the Central Union Church, is held, in 1921-22, by Yoshino Matsumura and Ah Hea Young.
REGISTER OF STUDENTS

1921-22

GRADUATE STUDENTS.

Alexander, William P., Ewa, Oahu.  
Ph.B., Yale, '15.
Borden, Ralph, 1434 Kalihi Rd.  
Fujimoto, Giichi, 1412 Nuuanu St.  
B.S., Univ. of Hawaii, '21.
Hastings, Edgar C., Mills School.  
A.B., Lebanon Valley College, '21.
Neal, Marie C., 56 Wyllie St.  
B.A., Smith, '12.
Rugh, Dwight D., Univ. of Hawaii Dormitory.  
A.B., Univ. of California, '21.

GRADUATES IN UNDERGRADUATE COURSES

Barnhard, Emma C., Punahou School, 1419 N. Main St., Independence, Mo.
Bartlett, Earl C., Kamehameha Schools.
Bauknight, Pickney M., 1150 Alakea St.
Boice, Myrtie B., 1429 Makiki St.
Calmes, Marquis F., Mills School, Atlanta, Ga.
Carpenter, John E. N., Kamehameha Schools.
Couch, Mary J., 218 A, Kalulani Ave.
Crawford, Leona M., 2524 Manoa Road.
Damon, Ethel M., 62 Puiwa Road.
Davis, Alice N., 610 S0. King St.
Edmondson, Margaret B., 2236 Hyde St.
Elliott, Raymond M., 1411 Punahou St.
Greenley, Maurice G., 2386 Liloa Rise.
Hemmerly, Wilbert R., Mills School; Lowell, Wyoming.
Huston, Grace E., Kawaiahao Seminary; Corning, Iowa.
Ike, Tadaasi, 1444 Nuuanu St.
Kelly, Paul W., care The Donna Hotel.
Kirschman, H. Darwin, 257 Saratoga Road.
Students

Loomis, Chas. F., 1029 13th Avenue.
Merriam, Theodore E., 2401 Kalakaua Ave.
Nelson, John Frithiof, Mills School.
Noyes, Winthrop Gilman, University Club; New York, N.Y.
Palmer, Albert W., 1660 Beretania St.
Pohlmann, Flora S., 940 12th Avenue.
Pratt, Helen G., 1500 Kapiohali St.
Purinton, Angie L., 3 Ocean View Court; Topsham, Maine.
Putnam, James Leslie, Cottage L, Makiki Court.
Rowell Dorothy C., 2361 Liloa Rise.
Schenck, Dorothy R., 2611 E. Manoa Road.
Schmittgen, Paul E., Mills School.
Shaw, Ruth C., 2121 McKinley St.
Weinrich, William, Pearl City.
Wist, Benjamin O., Territorial Normal School.

COLLEGE OF APPLIED SCIENCE

REGULAR STUDENTS.

SENIORS.

Chang, Peter Y.T. (Civil Engineering), 1934 So. King St.
Denison, Frederic C. (Sugar Tech., Agriculture), 1657 Bingham St.
Denham, E. P. (Physical Sciences), 12 Dewey Court.
Hanohano, Peter J. (General Science), 1731 Liliha St.
Iyer, V. Padmanaba (Sugar Technology), Paauilo, Hawaii.
Kanahele, Francis (Civil Engineering), 1827 Ahuula St.
Lau, Ah Com (Physical Sciences), Moanalua Gardens.
Li, Mary L. S. (Home Economics), 52 S. Kukui St.
Maneki, Tsumika (Sugar Tech., Agri.), Fort St.; Kaumana, Hilo, Hawaii.
Marques, Laura L. (General Science), 2312 Liloa Rise.
McTaggart, Earl L. (Sugar Tech., Agriculture), 1311 Lunalilo St.
Suzuki, Keiji (Civil Engineering), 2018 So. King St.
Takemoto, Suematsu (Civil Engineering), 2125 Beretania St.; Kapaa, Kauai.
Thompson, John C. (Sugar Tech., Agriculture), 2521 Rose St.
Wells, Douglas H. (General Science), University of Hawaii Dormitory; Haiku, Maui.
JUNIORS

Alexander, Herman H. (General Science), 2561 Jones St.
Chun, Kong Fat (General Science), Holokohana Lane, 546 Liliha St.
Hashimoto, Shoichi (Sugar Tech., Engineering), 65 Smith Lane.
Jacobson, Wilson N. (Sugar Tech., Engineering), Waikiki Inn.
Jay, J. Yuk (General Science), 320 B, School St.
Kapohakimohewa, David K. (General Science), 1457 A Noble Lane; Waikoa, Maui.
Low, Daniel S. K. (General Science), 2236 Young St.
Miyake, Seichi (Sugar Tech.), Chemistry, 2225 Hyde St.; Hiroshima, Japan.
Nichols, Howard A. (General Science), 930 Ocean View Drive.
Park, Kwan Doo (General Science), 1423 C Bower's Lane; Honokaa, Hawaii.
Park, Tai Sool (General Science), 3320 Waialae Road.
Searle, Clarence C. (Civil Engineering), 1534 Magazine St.
Tong, Koon Ching (General Science), 1017 Maunakea St.; Canton, China.
Tong, Richard C. (General Science), Yamamoto Lane; Hilo, Hawaii.
Wilson, William S. (Civil Engineering), 4 Fort Shafter, Oahu.
Wolters, William (Sugar Tech., Agriculture), 1336 Punahou St.; Kailua, Kauai.
Yim, Ah Num (Agriculture), 93 Kukui St.
Zane, James C. (General Science), 1066 Young St.

SOPHOMORES.

Beveridge, Thomas (Sugar Tech., Chem.), The Roselawn; Papaikou, Hawaii.
Bourne, Charles P. (General Science), 69 Beretania St.
Bowers, Francis A. I. (Sugar Tech., Agriculture), 237 Merchant St.
Chang, Peter Tai (Civil Engineering), Cot. 2, Smith Lane.
Chung, Wai (Agriculture), 2302 No. King St.
Chung, William C. (Physical Sciences), 1432 Fort St.
Conant, Raymond K. (Sugar Tech., Agrl.), The Donna Hotel, Kaunakakai, Molokai.
Forbes, Allister S. (Sugar Tech., Agrl.), Univ. of Hawaii Dormitory, Hilo, Hawaii.
Forbes, David M. L. (General Science), Univ. of Hawaii Dormitory; Hilo, Hawaii.
Goo, Robert Y. (General Science), 539 No. School St.
Students

Greig, Marjorie I. (Household Science), 2438 Upper Manoa Road.
Hee, Kai Ngu (Agriculture), 86 School St.
Hirashima, Kazuo B. (Civil Engineering), 516 No. School St.
Kawahara, Kazuto (Sugar Tech., Eng.), 626 King St.; Papaaloa, Hawaii.
Keppeler, Herbert K. (Civil Eng.), Univ. of Hawaii Dormitory; Pearl City, Oahu.
Koiki, Tsuneo (Civil Eng.), 2225 Hyde St.; Holualoa, Hawaii.
Lambert, Charles B. (Sugar Tech., Agr.), 1550 D, Pensacola St.
Lum, Richard (Agri.), 2101 No. King St.; Wahiawa, Oahu.
Lydgate, John M. (Sugar Tech., Agri.), Kahalawai, P. O. Box 395; Lihue, Kauai.
Matsuki, Henry Y. (Civil Eng.), St. Mary's Mission; Waimea, Kauai.
Matsumura, Yoshino (General Science), 2345 Liloa Rise; Waimea, Kauai.
Morimoto, Hiroshi Wm. (Civil Engineering), 591 D Beretania St.
Morita, Helene T. (Pre-Medical), 1021 Kama Lane.
Omura, Shizuo (Civil Eng.), 2125 So. Beretania St.; Hamakuapoko, Maui.
Ruttman, George F. K. (Sugar Tech., Agriculture), 474 D Hotel St.
Sato, Etsuo (Civil Engineering), 20th Ave. Kaimuki.
Tani, Edward M. (Civil Eng.), 1407 Nuuanu St.; Kamuela, Hawaii.
Tarleton, Colby D (Civil Engineering), 44 Haleleina Tract.
Wong, Cheong (Pre-Medical), 1835 Fort St.
Wong, Sum (Civil Engineering), Heeia, Oahu.

FRESHMEN.

Alexander, Arthur H. (General Science), Univ. of Hawaii Dormitory; Kapaa, Kauai.
Blaisdell, Neal S. (Sugar Tech. Agriculture), 486 Hotel St.
Boyum, Sevath E. (Civil Eng.), 1641 Anapuni St.; Hamakuapoko, Maui.
Brodie, Hugh W. (General Science), Univ. of Hawaii Dormitory; Hamapepe, Kauai.
Ching, You Kee (General Science), 267 No. Vineyard St.
Chow, Benjamin S. K. (Agriculture), 365 No. Beretania St.
Deverill Norman S. (Sugar Tech., Agriculture), 2172 Atherton Rd.
Dol, Isame (General Science), P. O. Box 704; Kalaheo, Kauai.
Eanes, Wm. H. (General Science), Headquarters Detachment, Fort Shafter, Oahu.
Farden, Carl A. (Sugar Tech., Agri.), Univ. of Hawaii Dormitory; Lahaina, Maui.
Fincke, William S. (Civil Engineering), 1762 Young St.; Olaa, Hawaii.
Forbes, Dyfrig McH. (Sugar Tech., Agri.), Univ. of Hawaii Dormitory; Hilo, Hawaii.
Fuller, Samuel M. (Sugar Tech., Agrl.), 1516 Gulick Ave.
Goo, Irene (General Science), 900 E. Kauwe Lane.
Heminger, Murray V. (Sugar Tech., Chemistry), 1511 Piikoi St.
Hitchcock, Joshua D. (Sugar Tech., Agriculture), 25 Judd St.
Ing, Edmund T. (Pre-Medical), 1749 Lewis Avenue.
Iwasaki, Koji (Sugar Tech., Agrl.), Fort St.; care of Hongwanji Mission; Kurtistown, Hawaii.
Kobatake, Akeshi (Civil Engineering), P. O. Box 936.
Kunimoto, Takeo (Civil Eng.), 1335 Pua Lane; Waialua, Oahu.
Lai, Alvin L. (Pre-Medical), Kamanuwai Lane.
Leong, Edward C. H. (General Science), 10 Yong Lane, P. O. Box 826; Waialua, Oahu.
Lung, Kwai Chong (Civil Engineering), 1707 Nuuanu St.; Kilauea, Kauai.
Lyman, Richard, Jr. (Sugar Tech., Agrl.), Univ. of Hawaii Dormitory; Kapoho, Hawaii.
Miller, Leland Porter (Pre-Medical), 1333 Pensacola St.
Minvielle, Albert E., Jr. (General Science), 1635 Young St.
Moir, Hector McD. (Civil Eng.), The Donna Hotel; Papaikou, Hawaii.
Mopua, John F. (Sugar Tech., Agriculture), 144 Ohua Lane.
Mori, Takechi (Civil Engineering), 2 Iwilei Road.
Okumoto, Yoshiwo (Pre-Med.), 1368 College Walk, P. O. Box 853; Hilo, Hawaii.
Peterson, Edwin W. (General Science), 2347 Vancouver Highway.
Poepoe, Samuel K. (Agriculture), 768 Kanoa St.
Reeves, Charles K. (Sugar Tech., Engineering), 1031 East 5th Ave.
Ryan, Thomas C. (Sugar Tech., Agriculture), 1206 King St.
Sakamaki, Paul F. (Sugar Tech., Agrl.), 2346 Liloa Rise; Olaa, Hawaii.
Sato, Mutsuru (Civil Engineering), 20th Ave., P. O. Box 916.
Searle, Theodore C. (General Science), 1534 Magazine St.
Suga, Hajime (Sugar Tech., Eng.), 2125 So. Beretania St.; Lawai-koloa, Kauai.
Tani, Ernest M. (Civil Eng.), 1407 Nuuanu St.; Kamuela, Hawaii.
Tanimura, John M. (Civil Eng.), Vineyard St., near Nuuanu; Paaulu, Hawaii.
Tokimasa, Hidemichi (Sugar Tech., Agric.), cor. School and Nuuanu.
Tong, Ruddy F. (Civil Eng.), 2060 Vancouver Highway; Hilo, Hawaii.
Tsuji, Keizo (General Science), 1921 Kalia Road.
Waters, Theodore R. (Sugar Tech., Chem.), 118 Kealohilani Ave.
Wicke Henry A. (Civil Eng.), 1232 Young St.
Wong, Bung Fong (General Science), 260 No. Kukui St.
Students

Wongwal, Tin Luke (General Science), 1202 A Morris Lane.
Yamamoto, James K. (Agriculture), 1943 Fort Street.
Yamanaka, Toshio (Civil Eng.), 1141 Maunakea St.; Wahiawa, Oahu.
Yamane, Eiji (General Science), care J. L. Hopwood, 2410 Kaala Ave.; Waiamea, Kauai.
Yamase, Masaji (Pre-Med.), 2963 Kalakaua Ave.; Waiamea, Kauai.
Yoshida, Yoshiwo (Civil Eng.), Moiliili; Hilo, Hawaii.
Young, Jun Lum (General Science), Liliha and Kuakini Sts.
Young, Peter Lup (Sugar Tech. Chem.), 929 No. King St.

SPECIAL STUDENTS

Barrere, Rosalind W., 2231 Hyde St.
Bush, G. Fred., Jr., 1655 Kewalo St.
Chock, Quan Chew, 586 Beretania St.
Choi, Dongho (Civil Engineering), 1214 Alani St.
Clark, Mrs. Ralph E., 2316 Oahu Ave.
Clarke, Mrs. Adna G., Kamehameha Schools.
Clarke, Adna Girard, Jr., Kamehameha Schools.
Cooper, Reginald C., 815 Young St.
Countermine, Margaret M., 2689 Oahu Ave.
Dean, Leora P., 2225 Hyde St.
Denison, Hazel M., 1502 Wilder Ave.
Dillingham, Martha E., 2562 Jones St.
Donaghho, Lila V., Alewa Heights.
Drew, Blanche, 2386 Oahu Ave.
Easton, George E., 257 Saratoga Rd.; Salem, Oregon.
Faulkner, Robert M., Y.M.C.A
Gibson, Helene, 1250 Center St
Guard, Juliette M., 2426 Armstrong St.
Harbaugh, Alice E., 2486 Lower Manoa Rd.
Head, Roy S., Aiea, Oahu.
Hopwood, Mabel B., 2410 Kaala Ave.
Johnson, Jean L., 2115 Kamehameha Ave.
Judd, Martha C., 2162 Atherton Rd.
Keenan, Bertine, 232 Ohua Rd.
Keller, Lora T., 2456 Oahu Ave.
Kelly, Clare M., 915 Piikoi St.
Kennedy, Douglas L., Kamehameha Schools.
Kinney, Howard K., 1337 Fort St.
Lane, Lucille A., 2410 Kalakaua Ave.
Larrabee, Louise M., 423 Wyllie St.
Lee, Peter, 1179 Garden Lane.
Lee, Reuben K. F. 1107 Punahou St.; Waiahole, Oahu.
Students

Lewis, Margaret, 3565 Pahoa Ave.
McDuffie, Kathleen A., 1004 11th Ave.
Midkiff, Ruth R., 2207 Oahu Ave.
Nimitz, Mrs. Chester W., 2015 Lanihuli Drive.
Oliviera, Bennet C., Jr., Univ. of Hawaii Dormitory; Kahuku, Oahu.
Ostergaard, James M., 2189 Kalia Road.
Perko, John, Helen's Court.
Reed, George D.
Rice, William H., Univ. of Hawaii Dormitory; Lihue, Kauai.
Ridder, Mrs. Harold F., 2347 No. King St.
Samson, Walter H., 600 Wyllie St.
Smith, Clara D., 2341 No. King St.
Stroup, Thomas Lei, 1318 Center St.
Swezey, Mary H., 925 12th Ave.
Vestil, Florentino, Hawaiian Board, Filipino Center.
Warren, Sara E., 2544 Lower Manoa Rd.
Webster, Marion M., Kamehameha Schools.
Weinrich, Ada W., Pearl City, Oahu.
Woodley, Julia M., 2162 Atherton Road; Denver, Col.

COLLEGE OF ARTS AND SCIENCES

REGULAR STUDENTS.

SENIORS.

Akana, Walter Ing (Medicine), Cornell Medical School; Ithaca, N.Y.
Cartmll, Eva M. (Education), Courtland Hotel.
Lum, Dip (Group 1), 546 Puhale and Kahanu Sts.
Moo, Jen Fui (Group I.), 10th Ave., Palolo Valley.
Yap, Charles T. T. (Group I.), 3465 Waialae Road.

JUNIORS.

Banks, Reba E. (Group III), 255 Saratoga Road; Kirbyville, Texas.
Bindt, Henry M. (Group I.), 3258 Monsarrat Ave.
Broadbent, Dora M. (Group II.), 2048 Nuuanu Ave.; Lihue, Kauai.
Chong, Beatrice S. Y. (Group II), 715 Waikamilo St
Chun, Ah Chow (Commerce), 1441 Lilaha St.
Cullen, Herbert F. (Group I.), Univ. of Hawaii Dormitory; Paauilo, Hawaii.
Davey, Clarence O. (Group III.), 1041 Alakea St.
Students

Fukushima, Kiyoshi (Commerce), Monsarrat Ave.; Makaweli, Kaual.
Gay, May K. (Group I.), 1811 Keaumoku St.; Lanai.
Ing, Hen Kong (Group I.), 1882 Luso St.
Johnson, Frederick (Group II.), care American Express Co.; Boston, Mass.;
Matsumura, John Y. (Group II.), 21 School St.; Paauilo, Hawaii.
Nishimoto, Shizuto (Commerce), 1117 Division Lane.
Post, Dorothy Ann (Group I.), 2235 Kalia St.; Berkeley Cal.
Putnam, Mrs. Rena M. (Group II.), 1114 Lunalilo St.
Spencer, Robert (Education), 2520 Oahu Ave.

SOPHOMORES.

Alau, Chadwick K. (Pre-Medical), 2546 Kaneloa Road; Hilo, Hawaii.
Allen, Gwenfred E. (Group II.), 1430 Makiki St.
Au, William Y. T. (Commerce), 340 Beretania St.
Bierbach, Gretchen H. (Group II.), 2346 Oahu Ave.
Brown, Cynthia M. (Education), Ocean View, Kaimuki.
Cho, Jay Uhn (Commerce), 1306 Miller St.
Chun, James Joy H. (Education), 82 No. Beretania St.
Clarke, Benita (Group II.), Cottage "F," Kamehameha Ave.
Durfee, Leonor N. (Group II.), 315 Saratoga Road.
Goo, Paul K. C. (Group III.), 82 No. Beretania St.
Goto, Yasuo (Pre-Medical), 2125 Beretania St.; Puako, Hawaii.
Hirano, Kazuichi (Group I.), 1239 King St.; Wahiawa, Kauai.
Hoermann, Marla (Group II.), 1036 Green St.
Krause, Dorothy H. (Group II.), 2557 Parker St.
Kuniklyo, Tovoru (Commerce), 1111 Fort St.
Lam, Charles K. Y. (Commerce), care St. Peter's Rectory.
Lau, Lawrence B. L. (Group II.), 1340 Beretania St.
Liu, Ken Kiu (Commerce), 2206 South King St.
Luke, Jannie K. J. (Education), 1308 Date St.
Mashimo, Ruth S. (Group II.), 1252 Young St.
McVeagh, Rebecca C. (Education), 3079 Diamond Head Road.
Moo, Jen Fong (Pre-Medical), 10th Ave., Palolo Valley.
Mossman, Doris K. (Education), 1319 Emma St.
Nichols, Martha A. (Group III.), 930 Ocean View Drive.
Oshimo, Kakuichi (Group I.), 610 So. King St.; Kapaa, Kohala, Hawaii.
Searle, Lucy (Education), 3456 Waialae Rd.; Lahaina, Maui.
Spencer, Edith B. (Education), 2146 Oahu Ave.
Sur, Kee Moon (Commerce), 3220 Waialae Road.
Ting, Joseph G. (Group I.), 938 Dowsett Lane.
Yamamoto, Takeo (Commerce), 1444 Nuuanu St.
Students

Yamashiro, Masami (Commerce), 206 No. Beretania St.
Yanigihara, Masaichi (Commerce), 1467 So. King St.
Yap, Ruth L. T. (Group II.), 3465 Waialae Road.
Yee, Ah Kin (Commerce), 860 Queen St.

FRESHMEN.

Abe, Mitsuko (Education), care Mrs. C. E. Burgher, Fort De Russy; Kurtistown, Hawaii.
Andrews, Lorrin, Jr. (Commerce), The Pleasanton.
Beardmore, Dorothy M. L. (Group II.), 2391 Beckwith St.
Chang, Peter (Group I.), 911 Queen St.
Ching, Sin Choy (Pre-Medical), 1675 Kamamalu Ave.
Choy, Soonie P. (Education), 1157 Union St.; Hanapepe, Kauai.
Chung, Clara Wal-Ung (Education), 1028 Beretania St.
Chung, Walter M. S. (Pre-Medical), 1432 Fort St.
Cook, Edgar K. (Pre-Medical), 3415 Palolo Ave.; Hilo, Hawaii.
Craig, John K. (Group I.), 2628 E. Manoa Rd.; Columbia, Mo.
Dobson, George L. (Pre-Medical), 1481 Punchbowl St.
Ezera, Ruth (Commerce), 3239 Monsaratt Ave.
Endo, Makoto (Pre-Medical), 2125 Beretania St.; Pauwela, Maui.
Fry, Marguerite I. (Group II.), 1515 Liholiho St.
Gitt, Harry G. (Pre-Legal), 1327 Piikoi St.
Harada, Shizuo (Commerce), 1233 Elm St.
Hayashi, Chisato (Pre-Medical), 1239 King St.; Holualoa, Hawaii.
Hess, Juanita (Group II.), 21 Dewey Court
Hirai, Takanaga (Commerce), 53 Chaplain Lane.
Hirano, Umeyo (Group II.), 1013 Peterson Lane.
Hope, Robert B. (Pre-Medical), 3115 Waialae Road.
Isaacs, William K. (Pre-Legal), 2015 Henry St.
Itsuro, Murakawa (Commerce), 1444 Nuuanu St.
Kaneda, Kazuo (Commerce), 973 Dowsett Lane.
Katsuki Ichio (Pre-Medical), 1515 Nuuanu Ave.
Kawachi, Kensuke (Group I.), Hawaiian Board; Kealakekua, Hawaii.
Kawasaki, Yoshikazu (Pre-Medical), 289 Kukui St.
Kinnard, Cynthia A. (Group II.), 2665 Lanihuli Drive; Schofield Barracks, Oahu.
Kluegel, Pauline (Group III.), 12 Halelena Park.
Knight, Katherine L. (Group I.), 610 So. King St.
Kono, Ayako (Education), Imamura Home, 1429 Fort St.; Hilo, Hawaii.
Kuninoba, Toshiyuki (Pre-Medical), 1423 So. King St.
Kuribayashi, Seichi (Commerce), 53 Chaplain Lane; Walluku, Maui.
Lee, Kan Yau (Commerce), Kamanuawai Lane.
Leong, Yau Sing (Commerce), 1633 Nuuanu Ave.
Li, Benjamin Luko (Pre-Medical), 52 So. Kukui St.
Low, Henry C. (Pre-Legal), 1799 Kalakaua Ave.
Lum, Martin N. (Pre-Medical), 1456 Kauluwela Lane.
Mark, Yin Fo (Pre-Medical), 1417 Beretania St.
Matsuguma, Shigi (Commerce), 1311 Auld Lane.
Matsuno, Toichi (Pre-Theological), Quinn Lane, Kakaako.
Matsuyoshi, Mutsuji (Pre-Medical), P.O. Box 1170.
Mau, Yo Ken (Group I.), 2937 Kalakaua Ave.
McGrew, Clifford D. (Pre-Legal), Univ. of Hawaii Dormitory.
McLane, Anna K. (Group II.), 2039 Nuuanu Ave.
Meyer, Charles E. (Commerce), 1817 Anapuni St.
Mooney, Alberta C. (Group I.), 2389 Beckwith St.
Morelock, Geraldine T. (Group II.), 2116 Lanikuhui Drive.
Okabe, Juichi (Pre-Medical), 25 Haleleina Park; Eleele, Kauai.
Pratt, Laura M. (Group I.), 2048 Nuuanu Ave.
Quinn, Vesta (Group I.), 2171 Atherton Road.
Ross, Janet Morrison (Education), 1448 B Melrose Lane.
Saiki, Kazu (Pre-Medical), Banyan St.; Kapaa, Kauai.
Singlehurst, Jack N. (Commerce), 55 Bates St.
Tokioka, Masayuki (Group I.), 2478 Kealohilani and Kuhio Ave.
Tsark, Eleanor Kiu Len (Education), 1499 Kauluwela Lane.
Tse, Wing Yan (Pre-Medical), 82 Beretania St.
Tsuboi, Sakae (Commerce), 1444 Nuuanu St.
Uyeno, Hatsuichi (Pre-Medical), 1111 Fort St.
Yamaguchi, Shichiro (Commerce), 2347 So. Beretania St.
Yanagi, Ume Ellen (Education), 1710 Young St.; Walluku, Maui.
Yap, David (Pre-Medical), 3465 Waialae Road.
Yasui, Minen (Commerce), P.O. Box 830.
Yee, Peter Sin T. (Pre-Medical), 1850 Fort St.
Young, Ah Hee (Education), 2183 Atherton Rd.; Walluku, Maui.
Young, Donald H. (Commerce), 2668 Oahu Ave.

SPECIAL STUDENTS.

Alexander, William P., 2214 No. King St.
Banning, Marjorie E., Kamehameha Schools.
Benner, Harlan F., 2420 Manoa Road.
Berndt, Lili Pfeil, 3745 Pahoa Ave.
Berry, William H., Fort Kamehameha.
Blau, Alice A., P.O. Box 1142.
Students

Born, Isabel K., 1873 B. Miki Lane, Waikiki.
Brown, Jane L., 1439 Keeaumoku St.
Bryan, Ken C., 1638 Anapuni St.
Bryan, Mary, 1925 H. Kalia Rd.
Burgert, Mabel, 1104 Piikoi St.
Butler, Zita C., 2464 Lower Manoa Rd.
Cannon, Glenn D., Alewa Heights.
Chong, Moi Hee, 1464 D Gaadalu Lane.
Chun, Amy Wong, 556 C. Mission Lane.
Davis, Emma, 28 Tren Town; Johnstown, Pa.
Duvel, Albert W., 2341 No. King St.; Hilo, Hawaii.
Fisher, Lynn A., 805 Kinau St.
Frazier, Charles R., 2655 Manoa Road.
Grainger, Ethel C., 2557 Parker St.
Greenwood, Alice E., 1269 Matlock Ave.
Hartman Martin L., 3337 Mauna Loa Ave.
Hartman, Thelma G., 3337 Mauna Loa Ave.
Ho, Ah Hung, 1685 Luso St.
Hoe, Esther M. J., 3134 Hobron Ave.
Hoe, Paul, 3134 Hobron Ave.
Honan, Mary Susan, 725 Kinau St.
Hornung, Cenie S., 2466 Maul St.
Hoshino, Yeigo, 86 No. King St.
Hill, Edna J., 1726 Anapuni St.
Hugo, Mrs. Grace H., 2220 Metcalf St.
Jarrett, Lorna Hooleia, 2356 Oahu Ave.
Jones, Frances L. R., 1726 Anapuni St.
Kiester, Lucille, Box 672.
Klum, Otto, 2157 Atherton Rd.
Langpaap, Max, 3557 Kaimuki Ave.
Lawrence, Frances, 2867 Upper Manoa Rd.
Leggett, Myrtice G., 1243 Lisbon St.; Oxford, Miss.
Lewis, Emma K., 1772 Luso St.; Hilo, Hawaii.
Loo, Ah Chin, 1065 Beretania St.
Los Banos, Domingo Espinas, care Henry May & Co.
Lung, Thomas S., Broad Lane, P. O., Box 991.
Macfie, Gertie G. T., 1319 Emma St.
Mant, Charles F., 908 Green Street.
Matthewman, Isabel B., 1521 Punahou St.
McCluskey, William 1215 Wilder Ave.
McKenzie, George S., 2240 Vancouver Highway.
Miller, Carleton, Old Naval Station, Honolulu.
Moncrief, Mrs. David M., 730 Kinau St.
Nakamura, Albert S., care Mr. Hirata, Moliiili.
Owens, David R., Jr., 1071A Beretania St.; San Francisco, Cal.
Payne, Marie, 1214 Kapiolani St.
Perry, Dieulinda, 1901 Young St.
Potter, Frederick A., 2727 Kalakaua Ave.
Ritchie, Evelyn, care 44th Infantry, Schofield Barracks.
Robinson, Grace Carr, Punahou Campus.
Sakai, Hannah, Ohai Lane, Pauoa.
Shellhorn, Josephine, Fort Ruger.
Smith, Ethel Louise, Donna Hotel.
Smith, Helen F. 3111 Diamond Head Rd.
Sokabe, Miyuki, Pawa Junction.
Sueoka, George H., Mills School.
Sunn, Samuel Kart, 1031 Kinau St.
Terry, Mrs. M E., Makiki Heights.
Thompson, Alice H., Kamehameha Schools.
Toi, Kenso, 1039 Pua Lane.
Watanabe, Shichiro, Waikiki Japanese School.
Welden, Florence T., 930 Lunalilo St.
### SUMMARY

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<td><strong>Total Candidates for Degrees</strong></td>
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**Not Candidates for Degrees**

| Graduates in Undergraduate Courses | 34 |
| Specials, College of Applied Science | 52 |
| Specials, College of Arts and Sciences | 69 |
| **Total Candidates for Degrees** | 249 |
| **Total Not Studying for Degrees** | 155 |
| **Total Registration** | 404 |
GEOGRAPHICAL DISTRIBUTION OF STUDENTS

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<td><strong>Total</strong></td>
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In 1921 the University of Hawaii commenced the publication of the "Quarterly Bulletin," to be issued four times a year in October, January, April and August. This catalog is the third number of Vol. I. The preceding numbers were:

Vol. I., No. 1—Register of Officers and Students and Abridged Announcement of Courses, October, 1921.

UNIVERSITY RECORDS

No. 1. Report of the Board of Regents to the Legislature of 1921. February, 1921; pp. 44.

As "College Records" there have been published previous to July, 1920, some twenty catalogues and reports to the Territorial Legislature. Very few research bulletins have been published by the institution, there being no financial provision for such publications. Six bulletins have, however, appeared with titles as follows:

BULLETINS

No. 4. Rock, Joseph F. Palmyra Island, with a Description of Its Flora. April 19, 1916, pp. 53.

Any of the publications listed above will be sent free upon request.
ARTICLES PUBLISHED BY MEMBERS OF THE UNIVERSITY
FACULTY IN 1921-22

ANDREWS, CARL B.:
2. "Riego y transporte de cana en Hawai" Ingenieria Internacional, Vol. 6, No. 6, December, 1921. 5 pp., illustrated.

BERGMAN, HERBERT F.:

EDMONDSON, C. H.:

LEE BRICK, KARL C.:

PORTEUS, S. D. (1919 and 1920 publications are included):
SPECIAL ANNOUNCEMENTS

Just as the Catalogue is going to press, President Arthur L. Dean announces three new appointments to the University Faculty, as follows:

HOUSEHOLD SCIENCE

Miss Carey D. Miller, graduate of the University of California, 1917, and now studying for an advanced degree at Columbia University, will be Assistant Professor of Household Science next semester at the University of Hawaii.

BUSINESS ADMINISTRATION

Mr. Edward H. van Winkle (A.B., Harvard) will be a member of the University of Hawaii Faculty as Instructor in Business Administration in the Department of Commerce. He will give a course in Accounting and one in Business Administration.

ENGLISH

Mr. Thomas Morrissey (B.L., University of California, 1903) will be an Instructor in the English Department under Dr. A. L. Andrews, giving a course in Argumentation (English 6) and one in Business English (Eng. 2) and a course in Drama.
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