



UNIVERSITY OF HAWAII

1968-1969 BULLETIN
General Information and Catalog

Hawn.
+LG961
H4A13
closed shelves
V47, no. 3

UNIVERSITY OF HAWAII



1968-1969 BULLETIN
General Information and Catalog

PRICE 50 CENTS

1968

S M T W T F S

September

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

October

		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

November

				1	2	
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

December

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

1969

S M T W T F S

January

			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

February

						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	

March

						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

April

			1	2	3	4	5
6	7	8	9	10	11	12	
13	14	15	16	17	18	19	
20	21	22	23	24	25	26	
27	28	29	30				

1969

S M T W T F S

May

						1	2	3
4	5	6	7	8	9	10		
11	12	13	14	15	16	17		
18	19	20	21	22	23	24		
25	26	27	28	29	30	31		

June

	1	2	3	4	5	6	7
8	9	10	11	12	13	14	
15	16	17	18	19	20	21	
22	23	24	25	26	27	28	
29	30						

July

			1	2	3	4	5
6	7	8	9	10	11	12	
13	14	15	16	17	18	19	
20	21	22	23	24	25	26	
27	28	29	30	31			

August

							1	2
3	4	5	6	7	8	9		
10	11	12	13	14	15	16		
17	18	19	20	21	22	23		
24	25	26	27	28	29	30		
31								

- Academic dates of significance.
- Holidays and Recesses.

Tapa design on cover from the Honolulu Academy of Arts collection.

UNIVERSITY OF HAWAII BULLETIN

VOLUME XLVII

May 1968

Number 3

The University of Hawaii Bulletin is published in December, March, May, and June at the University of Hawaii, Honolulu, Hawaii, U.S.A. Entered as second-class matter at the Post Office at Honolulu, Hawaii, November 14, 1921, under Act of Congress of August 24, 1912.

1968-69 UNIVERSITY CALENDAR

First Semester

September 3-14, Tuesday through Saturday.....	Academic advising, registration, orientation
September 16, Monday.....	Instruction begins
September 24, Tuesday.....	Last day for registration for credit
October 4, Friday.....	Last day for withdrawal from courses without grade penalty
November 1.....	Deadline for foreign undergraduate applications for 2nd semester
November 5, Tuesday.....	General Election Day (holiday)
November 8, Friday.....	Deficiency reports due
November 11, Monday.....	Veterans' Day (holiday)
November 27, Wednesday.....	Last day for removal of "Incompletes"
November 28-30, Thursday through Saturday.....	Thanksgiving recess
December 1.....	Deadline for U.S. undergraduate applications for 2nd semester
December 6, Friday.....	Last day for withdrawal from courses
December 9-20, Monday through Friday.....	Early registration for second semester
December 21, Saturday.....	Last day before Christmas recess
January 6, Monday.....	Instruction resumes
January 11, Saturday.....	Last day of instruction, first semester
January 13, Monday.....	Final examinations begin
January 18, Saturday.....	First semester ends

Second Semester

January 30-February 1, Thursday through Saturday.....	Academic advising, registration
February 3, Monday.....	Instruction begins
February 11, Tuesday.....	Last day for registration for credit
February 20, Thursday.....	Last day for withdrawal from courses without grade penalty
February 21, Friday.....	Holiday (Friday before a holiday falling on Saturday)
February 22, Saturday.....	Presidents' Day (holiday)
March 26, Wednesday.....	Prince Kuhio Day (holiday)
March 28, Friday.....	Deficiency reports due
April 1.....	Deadline for foreign undergraduate applications for summer session
April 3, Thursday.....	Last day for removal of "Incompletes"
April 4, Friday.....	Good Friday (holiday)
April 5-12, Saturday through Saturday.....	Easter recess
April 25, Friday.....	Last day for withdrawal from courses
May 22, Thursday.....	Last day of instruction
May 23, Friday.....	Final examinations begin
May 29, Thursday.....	Second semester ends
June 1.....	Deadline for foreign undergraduate applications for 1st semester 1969
June 8, Sunday.....	Commencement
July 1.....	Deadline for U.S. undergraduate applications for 1st semester 1969

Summer Session

June 16, Monday.....	Registration for 1st term
July 25, Friday.....	1st term ends
July 28, Monday.....	Registration for 2nd term
August 29, Friday.....	2nd term ends

Course Numbers and Descriptions; Abbreviations Used

Effective with this catalog, the University of Hawaii has revamped its course numbering system. The system is applicable to all campuses of the University, including its community colleges.

1. UNDERGRADUATE COURSES 1 through 499
 - A. Courses not applicable towards a bachelor's degree .. 1- 99
 - Offered by community colleges 1- 59
 - Offered by Manoa or Hilo campuses 60- 89
 - Offered by educational television..... 90- 99
 - B. Courses applicable towards a bachelor's degree 100-499
 - Initial or introductory courses; normally open to freshmen 100-199
 - Second-year courses in a sequence or development within a field of study 200-299
 - Third-year courses in sequence, or first courses in professional curricula normally taken by juniors 300-399
 - Most advanced undergraduate courses 400-499

2. POST-BACCALAUREATE COURSES 500 through 800
 - A. Courses in continuing education *not* generally applicable toward degrees 500-599
 - B. Courses applicable toward advanced degrees..... 600-800
 - Courses typically taken in first year of graduate study, or first in sequence 600-699
 - More advanced graduate courses 700-799
 - Thesis research 800

A large proportion of the courses listed in this catalog are re-numbered, and many are substantially revised. *The old numbers are shown in parentheses following the new numbers.*

Courses are listed by college and department, arranged alphabetically, except for interdisciplinary courses, which are listed with the Selected Studies and Honors Program. Use the Table of Contents or Index to locate a given department or curriculum.

After each department and major division is its abbreviated IBM code (e.g., Anth for Anthropology). This code is also used in the *course schedules* issued prior to each semester and the summer session, showing the time and place of each class meeting.

Heading each course description are the number and title of the course, the number of credits, and the semester given. Thus (3) I signifies a 3-credit course offered the first semester; (4) II, a course carrying 4 credits offered the second semester; (3) I, II, a 3-credit course repeated in the second semester; (5-5) Yr., a year's sequence carrying 5 credits each semester; while (arr.) shows that the number of credits may vary, being arranged by the instructor in each instance.

Other abbreviations used in course descriptions are: Hr, hour; L, lecture(s); Lb, laboratory; L-Lb, combined lecture and laboratory; Alt. yrs., alternate years; Pre, prerequisite.

Alongside the title of each course is printed the name of the faculty member giving it, as best ascertained at the time this catalog was prepared in early spring of 1968. Rank, title and academic degrees of all faculty are given at the end of the catalog.



Contents

	PAGE
GENERAL INFORMATION	9
STUDENT AFFAIRS	19
Student Activities	19
Student Services	20
Student Regulations	23
Living Accommodations	24
Financial Aids	25
Prizes and Awards.....	29
TUITION AND FEES	32
ACADEMIC REGULATIONS	35
Student Classification	35
Admission Information	36
Registration for Courses, Withdrawals and Other Changes	41
Credits, Grades and Examinations	43
Requirements for Continuation at the University	46
DEGREE PROGRAMS	48
Requirements for Bachelor's Degrees	49
SPECIAL INSTRUCTIONAL PROGRAMS	52
Honors Programs	52
English Language Institute	54
Interdisciplinary Studies	55
ROTC	56
Residential Learning Project	58
Russian Area Studies	58
Tutoring	58
Services to Handicapped	58
COLLEGE OF ARTS AND SCIENCES	61
Aerospace Studies	72
American Studies	72
Anthropology	74
Art and Architecture	76
Asian and Pacific Languages	82
Asian Studies	91
Biology	92
Botany	92
Chemistry	95
Drama and Theatre	97
Economics	99
English	104
English as a Second Language	108
European Languages	110
General Science	118
Geography	118
Geosciences	122
History	127
Linguistics	132
Mathematics	133
Microbiology	135
Military Science	137
Music	137
Oceanography	143
Overseas Career Program	145
Philosophy	145
Physics and Astronomy	148
Political Science	152
Psychology	154
Religion	158
Social Sciences	159
Sociology	160
Speech-Communication	163
Zoology	165
COLLEGE OF BUSINESS ADMINISTRATION	169
Accounting and Finance	173
Business Economics and Statistics	175
Management, Marketing, and Industrial Relations	177
School of Travel Industry Management	179
Graduate Courses and Business Administration	180

	PAGE
COLLEGE OF EDUCATION	183
Curriculum and Instruction	190
Industrial Education	194
Educational Administration	195
Educational Communications	196
Educational Foundations	197
Educational Psychology	199
Health and Physical Education	202
COLLEGE OF ENGINEERING	207
Civil	214
Electrical	218
General	223
Mechanical	223
Ocean	227
COLLEGE OF GENERAL STUDIES	229
COLLEGE OF HEALTH SCIENCES AND SOCIAL WELFARE	233
School of Medicine	233
Allied Medical Sciences	235
Anatomy	237
Biochemistry and Biophysics	238
Genetics	240
Medicine	241
Microbiology	242
Obstetrics and Gynecology	243
Pathology	243
Medical Technology	244
Pediatrics	247
Pharmacology	248
Physiology	249
Psychiatry	249
Public Health	250
Surgery	250
Tropical Medicine	250
School of Nursing	251
Dental Hygiene	255
Nursing	256
Medical Science	258
Technical Nursing	259
School of Public Health	260
School of Social Work	266
COLLEGE OF TROPICAL AGRICULTURE	269
Agriculture	271
Agricultural Biochemistry	271
Agricultural Economics	271
Agricultural Engineering	274
Agronomy and Soil Science	274
Animal Sciences	276
Entomology	278
Food Science and Technology	279
Horticulture	280
Plant Pathology	281
Plant Physiology	282
Home Economics	283
Home Economics Courses	291
GRADUATE DIVISION	299
SCHOOL OF LIBRARY STUDIES	301
HILO CAMPUS	305
COMMUNITY COLLEGE SYSTEM	319
EAST-WEST CENTER	321
FACULTY AND STAFF	327
SUMMARY OF ENROLLMENT FOR 1967-68	392
INDEX	394
CAMPUS MAP	400

General Information

THE UNIVERSITY OF HAWAII, the state-supported system of public higher education in Hawaii, conducts diverse programs in education, research and service for the state, the nation and the world community. It operates teaching and research facilities at more than 50 locations throughout the Hawaiian Islands and participates in international service and research activities in the Pacific Basin and Asian countries.

Throughout its history, a distinctive geographical and cultural setting has helped the University achieve competence in certain areas of study. Geographical location has led to concentration in oceanography, marine biology and interdisciplinary studies of tropical environments, problems and resources. The physical characteristics of Hawaii have focused interest on natural phenomena in geophysics such as tsunami research, volcanology, astronomy and astrophysics. Hawaii's multi-racial culture and its ties with Asia have created a favorable environment for the study of various aspects of diverse cultural systems, including such subjects as linguistics, genetics, philosophy and inter-race relations.

The University offers course work leading to the bachelor's degree in 64 fields. The Graduate Division offers work leading toward the master's degree in 67 fields and the doctorate in 27.

In addition to its instructional program, the University conducts organized research in several fields. Special units initiate and conduct research in economics, education, biomedicine, Pacific and Asian linguistics, social sciences, water resources, marine biology, geosciences, astronomy, genetics and agriculture.

The main campus is located in the Manoa Valley section of Honolulu, the capital of the state. The University maintains a second campus at Hilo and there are three community college campuses on Oahu, one on Maui, and another on Kauai.

Space observatories and associated research facilities of the University are located on the islands of Maui and Hawaii. The Hawaii Institute of Marine Biology, operated by the University, is located on Coconut Island in Windward Oahu. The University conducts the largest Peace Corps training program in the nation and its facilities are located on the islands of Hawaii and Molokai. Branches of the Hawaii Agricultural Experiment Station are located on five of the major islands of the state.

History. The University of Hawaii was founded in 1907 as a federal land-grant institution specializing in agriculture and the mechanic arts. Referred to as the College of Hawaii, it was launched with five regular students and 12 faculty members on a temporary campus in downtown Honolulu. In 1912 the

campus was moved to its present location in Manoa where an initial ninety acres were set aside for buildings. With the addition of a College of Arts and Sciences in 1920, the institution became the University of Hawaii.

In the following two decades, the University began to develop a special interest in bridging the East and West. A period of physical and academic expansion followed World War II, and new responsibilities and opportunities for growth were presented to the University when Hawaii became a state in 1959.

In 1960 the federal government created the East-West Center on the Manoa campus. Officially called the Center for Cultural and Technical Interchange between East and West, it aims to promote mutual understanding among the nations of the world through its exchange and service programs.

The University accepted a new task in 1964 when the state legislature authorized it to operate a state-wide community college system. With four state-owned technical schools for a base, the system's fifth campus in Leeward Oahu will open in September, 1968. A college transfer program was initiated at the Maui campus in 1967. The community colleges ultimately will offer a variety of college transfer and general education curricula on all campuses.

Colleges and Schools. The academic work of the University is administered by seven colleges: Arts and Sciences, Business Administration, Education, Engineering, General Studies, Health Sciences and Social Welfare, and Tropical Agriculture. Included in the College of Tropical Agriculture are the Cooperative Extension Service and the Hawaii Agricultural Experiment Station. The School of Tourist Industry Management is part of the College of Business Administration. Four professional schools are included in the College of Health Sciences and Social Welfare: School of Medicine, School of Nursing, School of Public Health and School of Social Work. The School of Library Studies is an additional professional school.

An Honors Program embraces all colleges. The Graduate Division assumes the major role in the organization and development of graduate programs.

Accreditation. The University is accredited by the Western Association of Schools and Colleges. Professional programs in the curriculum are individually accredited by appropriate agencies. Students may transfer credits to other American or foreign universities on the same basis as course credits are transferred by other accredited American universities.

Academic Year. The academic year is divided into two 18-week semesters and a 12-week summer session which offers two 6-week terms (*see* "University Calendar").

Administrative Organization. Governance of the University of Hawaii is vested in a board of regents appointed by the governor of the state.

The president of the University serves as executive officer of the board of regents and as such is responsible for educational leadership and is the administrative head of the University. He is assisted by five vice-presidents in the areas of academic affairs, business affairs, community colleges, continuing education

and community service, and student affairs. The president's staff also includes the secretary of the University, two assistants to the president, and the director of University relations and development.

The council of deans advises the vice-president for academic affairs on matters of academic policy. The faculty senate is similarly advisory to the president and the board of regents.

Colors, Seal and Motto. The University of Hawaii colors are green and white. The rainbow, a frequent sight in Manoa Valley, is the popular campus symbol, and the University teams traditionally are nicknamed "The Rainbows." The University seal contains a torch and book titled *Malamalama* (The Light of Knowledge) in the center of a circular map of the Pacific, surrounded by the state motto, *Ua Mau Ke Ea o Ka Aina i Ka Pono* (The Life of the Land Is Preserved in Righteousness). The University motto, inscribed in both the Hawaiian and English languages on Founders' Gate at the entrance to the Manoa campus on University Avenue, is "Above all nations is humanity."

Inquiries. Prospective students should address inquiries to the following offices. *Undergraduates:* Office of Admissions and Records, Bachman Hall 125, 2444 Dole Street, Honolulu, Hawaii 96822. *Graduate students:* Graduate Division Office, 2540 Maile Way, Honolulu, Hawaii 96822. *General Studies:* College of General Studies, 2500 Campus Road, Honolulu, Hawaii 96822. *Summer session:* Dean of Summer Session, Crawford Hall 208, 2550 Campus Road, Honolulu, Hawaii 96822. *Hilo Campus:* Provost, Hilo Campus, University of Hawaii, Hilo, Hawaii 96720.

Research and Service Operations

In addition to the instructional program, the University conducts organized research in several fields and offers other forms of public service. The most important of these operations are described below. The Cooperative Extension Service and the Hawaii Agricultural Experiment Station are discussed under the College of Tropical Agriculture. The Center for Engineering Research is discussed under the College of Engineering.

The primary function of the **Economic Research Center** is to promote an understanding of the economy of the state of Hawaii. The center evaluates economic effects of legislation and performs basic and applied economic research relating to Hawaii. In cooperation with the resident academic departments of the University, the center offers research training to advanced students.

The **Education Research and Development Center** adopts an interdisciplinary approach to the conduct of basic and applied research, evaluation and development concerned with instructional and administrative problems. Activities are directed at obtaining factual evidence that may assist educators in

reaching decisions about educational practices. Major programs focus upon understanding of achievement motivation, of conditions influencing educational attainment of different ethnic and socio-economic groups, and of means of optimizing the cognitive learning of school children. Research and development to facilitate educational planning and practice in Hawaii and the Pacific Basin is a primary concern.

The division of **Educational Television Broadcasting Service** serves as the production and transmission agency for the Hawaii Educational Television Network, a cooperative service of the University and the State Department of Education. The ETV studios located on campus also serve as laboratories for students enrolled in speech and education communications courses and as a production center for closed-circuit television courses within the University.

The **Graduate Research Library**, located on the Mall, houses the main book and periodical collections of the University of Hawaii Library. Completed in mid-1968, its four stories provide space for approximately 800,000 volumes and 1,050 readers in a total floor space of 106,848 square feet. It houses all research collections except the Government Documents Collection and the Hawaiian and Pacific Collection, which will remain in Sinclair Library until phase II of the graduate research library is completed. Collections are arranged in open-stack fashion for maximum ease of access.

Gregg M. Sinclair Library, located at University Avenue and Campus Road, houses the Undergraduate Collection (50,000 volumes) in addition to its two research collections noted above and the East-West Center library's Oriental Collection. Sinclair Library is in process of being converted to an undergraduate library. This includes expansion of the seating capacity, development of book collections geared to the undergraduate curriculum, and creation of browsing and listening areas.

The **Communications Service Center**, a division of library activities, provides audio-visual aids for classroom instruction and research projects. Consultation services include selecting, locating and producing graphic and audio-visual materials designed to meet specific needs. *Audio-Visual Services* lends AV equipment, films and does tape duplication. *Graphic Services* provides drafting, illustrating, design, layout, lettering, photography and projectual production. *Instructional Systems* operates a closed-circuit television system, a large multi-media auditorium in Kuykendall Hall and media instruction laboratory.

The **Harold L. Lyon Arboretum** occupies 123 acres in upper Manoa Valley, about 4 miles from the Manoa campus. It was developed by the Hawaiian Sugar Planters' Association and presented to the University in 1957. Several hundred species of exotic trees and shrubs are established, inventoried and well maintained, providing the University and the scientific community with an unrivaled facility for research on living tropical and subtropical woody plants.

The **Hawaii Cooperative Fishery Unit** promotes graduate training and research in fishery biology by providing students with support, counseling and facilities. The unit is headquartered in Edmondson Hall and functions academically as part of the department of zoology. Research program centers on the fishery biology and ecology of inshore marine and inland waters. The unit operates under joint sponsorship of the University, the Hawaii Department of Land and Natural Resources—Division of Fish and Game, and the U.S. Bureau of Sport Fisheries and Wildlife—Division of Fishery Services.

The **Hawaii Institute of Geophysics** was organized to take advantage of the unique position of Hawaii as a national laboratory for conducting geophysical research in the broad field of the earth sciences. In cooperation with academic departments devoted to the physical sciences, the institute conducts research programs and provides advanced training in geodesy, aeronomy, meteorology, oceanography, solid earth geophysics, geology, soils and geochemistry. The main laboratory of the institute is located at 2525 Correa Road on the campus. The institute also maintains a cloud physics observatory at Hilo, Hawaii, a ship operations facility at Pier 18, Honolulu, and a seismographic observatory in upper Manoa Valley.

The **Hawaii Institute of Marine Biology**, established in 1950, is located on Coconut Island in Kaneohe Bay. It encourages research in the marine biological sciences, including fisheries, by providing facilities and services for faculty members, graduate students and visiting scientists. Its research programs include studies in the ecology, physiology, behavior and systematics of marine animals and plants, pollution studies, biology, chemistry and pharmacology of toxic marine organisms, fundamental research in the interrelationship of organisms and their environment, and a summer graduate research program in marine biology initiated in 1967.

The **Industrial Relations Center** promotes understanding of personnel and industrial relations. Its library contains information on the basic services in the field, as well as current publications. The center provides reference service, and assists in conducting conferences, lectures and group discussions, and in training of advanced students. The center publishes research studies in basic industrial relations problems, as well as a monthly *Newsletter*, a bimonthly *Selected Acquisitions List*, reprints, reading materials and bibliographies.

The **Labor-Management Education Program**, instituted in 1965, is under the general supervision of the Industrial Relations Center in cooperation with the College of General Studies. Its objectives are to provide basic leadership training for those associated with management and labor, to promote (1) understanding by both groups of the fundamental problems of mutual interest with which they deal; (2) knowledge of the factors which are essential to productive relations between them; and (3) appreciation of the public's interest in the satisfactory solution of their common problems. In addition to its schedule

of general courses, the program conducts special courses, one-day and week-end institutes, conferences and staff training programs.

The **Institute for Astronomy** was founded on July 1, 1967, to assume responsibility for the development of the University's research programs in astronomy. In cooperation with the department of physics and astronomy, with whom certain of its staff share appointments, the institute provides graduate training on the Manoa campus and at its observing facilities. The institute maintains observatories on Mount Haleakala, Maui, for studies of the sun (especially the corona), the zodiacal light and the airglow. On Mauna Kea, Hawaii, it has under construction an 88-inch reflecting telescope and a coudé spectrograph. This telescope is to be used for planetary and stellar studies. In its Manoa campus headquarters the institute has extensive facilities for data reduction and analysis and for instrument development.

The **Institutional Research Office** is responsible for conducting and coordinating research relating to the University of Hawaii. An advisory committee aids in selecting institutional studies which are necessary for the University to function effectively and to plan realistically for the future. The office also develops and analyzes data on students, faculty and academic programs.

The **Laboratory of Sensory Sciences** performs basic research on all the sensory capabilities of man and other animals. Vision, hearing, taste, smell and the senses of the body are studied as well as their associated nerve reactions. In the laboratory are included the scientists, students and equipment in the disciplines of biophysics, psychophysics, electrophysiology, neurology and behavior, all investigating in common, but from different viewpoints, the basic question of the nature of sensation. This interdisciplinary approach, plus the year-round availability of marine animals for study in Hawaii, makes the laboratory unique in the study of the sensory processes.

The **Land Study Bureau** is the center of land research both at the University and for the state of Hawaii. Through its interdisciplinary research program, the bureau assembles, coordinates and interprets data on the characteristics and utilization of land and develops additional information as needed to integrate economic and physical data to achieve the highest and best use of the lands of Hawaii. The bureau provides the governor, the legislature, state departments and other public agencies, and private organizations and individuals with data and impartial advice on land use. Recently, the bureau has taken on the new role of advising and participating in the technological and economic development of other areas throughout the Pacific.

The **Legislative Reference Bureau**, created by the legislature in 1943 to aid in legislative and governmental problems, is situated on the campus, where it maintains a reference library. It provides the legislature, governor, departments, institutions and agencies of the state with bill-drafting services, information and reports. During sessions of the legislature the bureau maintains an office on grounds adjacent to Iolani Palace.

The **Office of University Relations and Development** is responsible for the production of all official University publications, for publicity and public relations activities, and for the coordination of efforts to raise funds for the University from private sources.

The **Pacific Biomedical Research Center** encourages investigations in the areas of subcellular biology, microbiology, cell structure and function, regulatory biology, genetics, behavioral sciences, epidemiology and other areas of medical research. Its building provides space; research equipment, such as electron microscopes; and research facilities, such as an animal colony, to faculty members, graduate students and visiting scientists. The center contains research laboratories for human genetics, microbiology, physiology, biochemistry, biophysics, pharmacology and psychology, in which it fosters and facilitates research projects of biomedical interest.

The **Pacific and Asian Linguistics Institute** plans and conducts research in general linguistic theory and specific problems of lexicology, structural semantics and grammatical description. Through its **Pacific Lexicography Center**, the research institute collects and stores data on the languages of the Pacific and adjacent areas, developing and utilizing computer techniques for storage and retrieval.

The **Planning and Public Policy Institute**, established in 1967, is a multidisciplinary endeavor concerned with planning processes and policy issues, particularly at the urban and regional levels. Its programs are designed to assist students, practitioners and researchers to participate more effectively in the areas where planning and public administration converge and overlap. The institute works in close conjunction with the relevant academic departments and professional schools and with public and voluntary agencies in providing and facilitating academic instruction, continuing education and research, focusing on the systematic formulation and evaluation of public policies in specific problem areas.

The **Social Science Research Institute** facilitates the initiation of faculty research and develops and conducts programs primarily of an interdisciplinary nature in the social sciences and related fields. Particular emphasis is given to the study of modernization, socio-economic development and cultural change. The institute is developing new programs in survey research, contemporary Korea, and Hawaii's people. A long-term study of culture and mental health in Asia and the Pacific will provide an opportunity for Asian and American scholars to participate in cooperative research.

The **Social Welfare Development and Research Center** (formerly the Youth Development Center), operated by the School of Social Work, is involved in social welfare planning efforts, particularly in the fields of juvenile delinquency and youth development. It offers consultation and training to agency and interagency programs through workshops, seminars, special University courses and other projects. The center operates **Hawaii Upward Bound**, a

program sponsored by the Office of Economic Opportunity designed to aid underachieving high school students preparing for college.

The **Speech and Hearing Clinic** is operated by the division of speech pathology and audiology in the School of Medicine. Diagnostic and therapeutic services in speech and hearing are provided for children, University students, and other adults by staff members and supervised student clinicians. A fee of \$5.00 per semester or part thereof is charged for non-University registrants.

The **Speech Communication Center** provides instruction for those students who are discovered at entrance to need special attention to intelligibility and acceptability of utterance. Students appearing to need special instruction may also be referred by their instructors at any time. Within the space available, the center accepts (on a fee basis) persons not enrolled in the University. The center also engages in basic and applied research and training of researchers in speech communication.

The **Statistical and Computing Center** operates an IBM 7040-1401 system and an IBM 360 50 system, along with a supporting line of peripheral punched card equipment. It provides services with respect to statistical consultation, system design, data processing, computing, and educational and reference advice to all the divisions and departments of the University.

The **University of Hawaii Press** publishes scholarly books and monographs, particularly those dealing with Hawaii, the Pacific and the Orient; regional books; and three scholarly journals, *Pacific Science*, *Philosophy East and West* and *Oceanic Linguistics*.

The Press is a member of the Association of American University Presses and the American Book Publishers Council. It was established in 1947 as a division of the University operating with the guidance of an advisory committee of seven faculty members appointed by the President. Book manuscripts should be sent to the director, journal papers to the respective editors-in-chief.

The **Waikiki Aquarium** is a state-owned museum specializing in Hawaiian aquatic exhibits. It is located in Waikiki and is operated by the University of Hawaii's Division of Continuing Education and Community Service as a place of education, recreation and inspiration for Hawaii's residents and tourists.

The **Water Resources Research Center**, established in 1964, plans and conducts research of both basic and practical nature related to Hawaii's water resources, and provides for the training of engineers and scientists through such research. Research is interdisciplinary with a broad base of physical sciences, technology and social sciences. It involves hydrology and hydraulic engineering, geology, geophysics and geochemistry, sanitary engineering and public health, climatology and soil physics, agricultural engineering and forestry, and socio-economic and legal aspects. The center promotes interdisciplinary programs in water resources research among various units of the University.



The University conducts a Peace Corps training program, including this rural village area at Waipio Valley, Hawaii. Volunteers are trained for assignments in Asia and the Pacific.

International Training

The **Office of International Programs** provides general administrative and program direction and guidance to the University's training centers; coordinates all business, administrative and training aspects of the University's contracts with the Peace Corps and the Agency for International Development; assists in devising and developing plans for new training programs; promotes and encourages the most effective use of the University's resources on international activities; provides on-campus assistance to foreign visitors as needed, particularly those engaged in related international programs.

The training centers of the University of Hawaii include two Peace Corps training centers, one located on the island of Hawaii and the other on the island of Molokai. The Asia Training Center, located on the island of Oahu, trains A.I.D. personnel for assignments in Vietnam, Laos and other countries of Southeast Asia.

Late in 1967 the Tropical Rice Production Center on the island of Kauai was established. This center is administered jointly by the College of Tropical Agriculture and the Office of International Programs and is used to train both Americans and Asians in the latest methods of rice production.

Cooperating Institutions

Through cooperative agreements with institutions listed below, the University has increased its research facilities and expanded its services to the state. The Bishop Museum, the Pacific and Asian Affairs Council, and the Academy of Arts offer student membership rates.

The **Bernice P. Bishop Museum**, a world-famous storehouse of information, contains an outstanding reference library as well as important biological and anthropological collections relating to Hawaii and other Pacific islands. In addition, this institution holds the combined herbaria of the University and the museum, the most complete collection of Hawaiian plants in existence. The museum's research facilities are available to University students on a reciprocal basis.

The **Fruit Fly Laboratory** is maintained on the campus by the U. S. Department of Agriculture, Entomology Research Division, for the study of fruit fly pests. This division also cooperates with the University in the use of a multi-purpose radiation facility, installed on campus in 1965 to study the disinfestation of agricultural produce.

The **Hawaiian Sugar Planters' Association** provided the funds for a building on the campus to house the Agricultural Engineering Institute, with shop facilities for instruction and research.

The **Honolulu Academy of Arts**, built and endowed by Mrs. Charles M. Cooke, contains valuable collections of both Eastern and Western art. These are available for use by students and instructors.

The **Pacific and Asian Affairs Council** sponsors lectures, seminars and meetings on international affairs, particularly on Asia and the Pacific. Its library offers research materials on world affairs.

The **Pineapple Research Institute of Hawaii**, supported by the pineapple industry, is affiliated with the University. Some offices and laboratories are in institute buildings in the campus area. Field studies are carried on at a 150-acre experimental farm in Wahiawa, Oahu.

The **Biological Laboratory, Honolulu**, of the **U.S. Bureau of Commercial Fisheries** is located adjacent to the campus. Several of its senior staff members hold appointments on the Affiliate Graduate Faculty. The laboratory's mission is to conduct research on the oceanography and the fishery resources of the central Pacific Ocean. Its library, a comprehensive collection of works in the marine sciences, is available for use by students and faculty of the University. Requests for information should be addressed to the Director, Bureau of Commercial Fisheries, P. O. Box 3830, Honolulu, Hawaii 96812.

The universities of Michigan and Hawaii jointly use astronomical observatory facilities on the summit of Haleakala, island of Maui.

The **U.S. Geological Survey Volcano Observatory**, located at Kilauea Crater on the island of Hawaii, conducts research relating to the Hawaiian volcanoes. Research facilities are made available on occasion to faculty and students of the University.

Student Affairs

Student Activities

Student activities are recognized as an important part of a university education. The Bureau of Student Activities is responsible for developing and maintaining a well-balanced program in which student participation and leadership are encouraged.

Students registered for 12 or more credits are eligible to participate and hold positions in the approximately 90 student scholastic, honorary, professional, religious, social, departmental, special interest and residence organizations, and in all student government and college union activities.

The two major organizations, of which every student who pays a student activities fee is automatically a member, are the Associated Students of the University of Hawaii (ASUH) and the Hemenway Union Board (HUB).

The ASUH through its elected senate serves as the administrative and legislative body of the students and works with the University administration in matters affecting the general welfare of undergraduate students. The ASUH also supports and provides funds for student publications—*Ka Leo o Hawaii* (campus newspaper), *Ka Palapala* (student annual) and *Kapa* (literary magazine); drama and theatre; and the University band and chorus. Other activities include a symposium program on national issues, homecoming, Model United Nations and Model United States Senate.

Tickets to major productions of the University Theatre are free to ASUH members and East-West Center grantees. All students of the University and the Center may participate in dramatic and musical productions. Productions are presented in Kennedy Theatre.

Hemenway Hall is the center of campus activities and serves many campus organizations through its facilities and services. The Hemenway Union Board, composed of students, faculty and alumni, promotes and sponsors a broad program of social, cultural and recreational activities and administers the building through the establishment of policies for use of Hemenway facilities. Hemenway Union is affiliated with the National Association of College Unions International.

Besides ASUH and HUB activities, several departments conduct activities related to their educational programs. The music department sponsors concerts and recitals in Mae Zenke Orvis Auditorium, a hall of unique acoustical design. The speech department sponsors a series of reading hours throughout the academic year. Lectures, panels, broadcasts and films are sponsored by departments and campus clubs.

ORIENTATION FOR FRESHMEN AND NEW STUDENTS

Entering freshmen and transfer students are expected to be on the campus for the orientation program, the dates of which are stated in the University calendar (p. 3). This program is conducted by the Bureau of Student Activities and sponsored by the Associated Students of the University of Hawaii. It tries to reach as many new students as possible to help them get acquainted with the University.

INTRAMURAL ATHLETICS AND SPORTS

ASUH members are admitted free to varsity athletic events and are encouraged to participate in intramural sports. Athletic facilities, situated in the lower part of the campus, make possible a wide variety of indoor and outdoor sports.

The University offers instruction in health and physical education and conducts a program of recreation and sports. Individual colleges within the University require specified courses in the field, as stated in succeeding portions of this catalog.

Intramurals supplement regular physical education courses, and students are encouraged to participate in these sports.

University teams compete in the following varsity sports: baseball, basketball, football, golf, swimming, tennis, track, volleyball and wrestling.

Although the University takes reasonable precautions, it assumes no responsibility for injuries students receive in sports or games. All students participating in varsity sports are insured against accidents.

Student Services

STUDENT HEALTH SERVICE

The Student Health Service is set up to assist all students in maintaining their health while attending the University of Hawaii. Every daytime registered student requires a medical examination performed by his personal physician and the results of this examination must be entered on a special health form provided by the University. Payment for this medical examination is the personal responsibility of the student.

Health services will be denied to any student not providing this completed health form. In addition, students should be forewarned that medical clearances permitting them to enroll in physical education courses, intramural sports programs, etc., will be denied students not meeting this medical requirement.

The service offers a medical care program similar to that of the general office practice of medicine. A dispensary provides out-patient physician and nursing care 8:00 a.m. to 4:30 p.m. Monday through Friday and from 9 a.m. to

11 a.m. on Saturdays. The infirmary can provide beds for medical care for minor illnesses and injury on a 24-hour basis seven days a week during regular sessions of the University. A nurse is on continuous duty for the dispensary and infirmary services, and a physician is there at regular hours and on call during evenings. A student may be referred to a private physician for medical problems beyond the scope of the Student Health Service, for which he must bear the financial responsibility. Each student is advised to join a medical insurance program to gain supplemental medical and hospital care. The medical insurance plan sponsored by the ASUH is tailored to students' special needs and is specifically recommended.

Once enrolled, an annual tuberculin test or chest X-ray examination is required of each student. In view of the much higher incidence of tuberculosis in foreign students, semi-annual chest X-ray examinations are required of them. Failure to comply with these requirements may preclude registration for the following semester.

COUNSELING AND TESTING CENTER

The Counseling and Testing Center's staff consists of professionally trained psychologists, psychiatrists, counseling psychiatric social workers, psychometrists and interns, who, as a team, function on the campus in the areas of student service, graduate training and academic research. Educational, vocational and personal counseling is available to students. Various aptitude, interest and other psychological tests are often used as aids in the counseling process. The Center also maintains an educational and vocational library and administers a reading improvement program.

UNIVERSITY PLACEMENT AND CAREER PLANNING

The Office of University Placement and Career Planning assists students and alumni in the selection and pursuit of an optimum career. Services are provided in areas of self-analysis, vocational information, specific job opportunities, job campaigns, evaluation of offers, and graduate studies. The office cultivates the interest of prospective island, mainland and overseas employers and provides them with facilities to contact students and former students available for employment. Recruiting literature, annual statements, graduate and professional school bulletins, copies of the College Placement Annual and other career references are provided. Credential files are established for students interested in an academic career.

Campus interviews are scheduled with recruiting representatives of mainland and Hawaii organizations that offer career opportunities in business and industry, education and government. A number of recruiting firms are interested in hiring foreign students for employment in their home countries. In addition several hundred employment opportunities are listed with the office by employers who find it impractical to make campus visits.

Early registration with the office is encouraged during the final year of study.

INTERNATIONAL STUDENT OFFICE

The International Student Office serves both foreign and American students. It helps those from other countries with immigration requirements, financial problems, living arrangements and other University and community matters. Special orientation programs are held at the beginning of each semester; foreign students admitted to the University are notified in advance and urged to arrive in time to attend them.

The office, located in Webster Hall 101, advises American students who seek opportunities for overseas study, service and travel, and who wish to engage in international student activities while at the University of Hawaii.

Non-U.S. students who are graduates of a university and are applying for admission to the University of Hawaii should write to: Foreign Student Adviser, International Student Office, 2528 The Mall, University of Hawaii, Honolulu, Hawaii 96822.

LOCKERS

Steel book lockers for students are available in Wist Hall. Use of a locker for the first and second semesters may be obtained by calling campus local 8961 with the number of the locker desired. The Facilities Management office will advise the student about pickup of the key and payment of charges. All keys must be returned before Commencement.



The campus draws together students from over 60 countries, including every continent, but particularly from Asia and the Pacific.



Studio work is a major part of the art curriculum.

Student Regulations

STUDENT CONDUCT

Students are expected to observe accepted University and community standards of conduct. Disciplinary authority is exercised by the Committee on Student Conduct, composed of the deans of several colleges, faculty members and students appointed by the president of the University, and the vice-president for student affairs.

Financial Obligations to the University. Students who have not adjusted their financial obligations (traffic violations, library fines, locker fees, laboratory breakage charges, transcript fees, loans past due, etc.) to the satisfaction of the business office may be denied graduation and further registration.

Intoxicating Beverages. Intoxicating beverages are prohibited on the campus and in affiliated buildings, including dormitories and facilities for all fraternities, sororities and other organizations.

Lethal Weapons. Firearms and spear guns are prohibited in dormitories and environs.

PARKING AND TRAFFIC

Students are expected to familiarize themselves with the University's parking and traffic rules and regulations established by the board of regents. These regulations and special instructions may be obtained at several locations on campus including the student mail room, the business office in Bachman Hall and the traffic desk in the Auxiliary Services building. Ignorance of these rules and regulations will not excuse a student from the payment of fines for violations.

Parking permits are sold in a designated place near the swimming pool during registration periods, and at the traffic desk in the Auxiliary Services building throughout the year.

Living Accommodations

CAMPUS HOUSING

Acceptance to the University of Hawaii does *not* assure one of housing, and in all probability a student will have a difficult time searching out and arranging for housing. The University has only a limited number of campus dormitory spaces for which priority of assignment is given to Hawaii students. By policy of the board of regents, priority is given to freshmen who come from rural Oahu or the neighbor islands. Requests for residence hall accommodations on campus should be made directly with the Student Housing Office.

The contract is for the entire academic year or remainder thereof and is for room and board (10 meals per week—breakfast and dinner, Monday through Friday). Dining facilities for all residence hall students except Hale Kahawai and Hale Laulima are located in Gateway House. Dining facilities for Hale Kahawai and Hale Laulima are located in Jefferson Hall.

Residents must obtain medical clearance from the Student Health Service prior to occupancy. Each resident accepts responsibility for the regulations outlined in the student housing brochure.

There are no facilities on campus for temporary housing or for married students. There is no place on campus to which luggage or mail may be forwarded ahead of a student's arrival.

Undergraduate Women

Mary Dillingham Frear Hall has double accommodations for 144 students. Room and board fee is \$365 per semester.

Hale Kahawai has double accommodations for 140 students. Room and board fee is \$365 per semester.

Hale Laulima has double accommodations for 140 students with room and board fee at \$365 per semester. Also, there are 14 single accommodations with room and board fee at \$415 per semester.

Undergraduate Men

John A. Johnson Hall has double accommodations for 192 men. Room and board fee is \$365 per semester.

Graduate Students

Gateway House has double-room accommodations for 104 women and 104 men in two separate towers. Both men and women students share common lounge, dining and recreational facilities on the first floor. If space permits, selected upper-division undergraduate students will be accepted. Room and board fee is \$390 per semester.

Application-contracts must be accompanied by a \$25 deposit before consideration for space reservation can be made. Contract periods do not include official vacation periods during the academic year. Room costs for these periods are approximately \$85 plus meal expense.

OFF-CAMPUS HOUSING

The Student Housing Office offers a free central listing service and maintains listings of rooms in private homes, a few apartments, and room and board jobs. These listings are not inspected or approved by the University. Negotiations with off-campus landlords must be handled directly by the student. Because of the rapid turnover the names of landlords cannot be sent through the mail. Names of students as possible roommates are not available although available space shared with other students can be listed. The rush for housing usually starts about three weeks prior to beginning of classes. Students arriving in Honolulu are encouraged to arrange for temporary lodging and are invited to come to the housing office for general information on current listings of available accommodations (Monday-Friday, 7:45-11:45 a.m. and 12:30-4:30 p.m.). The general housing picture is one of extreme shortage and this means expense and difficulty in the location of suitable housing.

For information on campus or off-campus housing write to: Student Housing Office, Johnson Hall A, University of Hawaii, 2555 Dole Street, Honolulu, Hawaii 96822.

FOOD SERVICES

In addition to the Gateway House cafeteria, dining facilities on campus include:

Hemenway Hall Cafeteria. Meals a la carte are served.

East-West Center Cafeteria. A complete food service in Jefferson Hall, including a cafeteria, a snack bar and private dining rooms.

A *snack bar* in the northeast section of the campus.

EXPENSES

Minimum expenses are estimated at approximately \$2,100 per year for board, room, tuition, registration, course fees, class and student body fees, and books. Off-campus housing may be higher. These estimates do not include the cost of medical or dental expenses, additional dependents or transportation. Students from outside the state should add the cost of transportation to and from Hawaii and additional items for adjustment in a new community.

Financial Aids

The Office of Financial Aids is concerned primarily with assisting students who have financial need to continue or complete their education at the University of Hawaii. This assistance may be in the form of scholarships, grants, loans and/or student employment. Correspondence should be addressed to: Director, Office of Financial Aids, Bachman Hall 124, University of Hawaii, 2444 Dole Street, Honolulu, Hawaii 96822. Prospective graduate students who need finan-

cial assistance should write to: Dean of the Graduate Division, 2540 Maile Way, Honolulu, Hawaii 96822.

SCHOLARSHIPS AND GRANTS

Privately Endowed—Grants and Other Aids

The General Motors Corporation provides a grant for an entering freshman good for four years if a satisfactory record is maintained.

The United Air Lines—W. A. Patterson scholarships to freshmen from the state of Hawaii.

The Sears Roebuck Foundation grants ten \$250 scholarships in general agriculture and two \$300 scholarships in home economics.

The Charles R. Hemenway Scholarship Trust offers scholarships to undergraduate students.

The Link Foundation provides summer session scholarships of \$300 for secondary school science teachers studying oceanography.

The Matson Navigation Company offers four \$500 scholarships each year to juniors and seniors in the College of Business Administration.

The Ruby Ethel Kono Scholarship is awarded to a woman student majoring in Far Eastern art and culture or in voice.

Government Employees Mutual offers four \$500 scholarships for entering freshmen.

Hawaii Veterans Memorial Fund provides scholarships for undergraduate students.

The Kekaha Sugar Company offers a four-year scholarship of \$250 a year to a young man whose family is connected with the company. Information may be obtained from the company.

The Edward K. S. Park Memorial Scholarship to an undergraduate civil engineering student.

The Kenny Gruenhagen Foundation Scholarships for a senior student in art and a senior student in architecture.

Information on the above grants, except Kekaha Sugar Co. scholarship, may be obtained from the Scholarship Committee.

Government Scholarships

State Scholarships. Sixty-four scholarships, 54 divided among senatorial districts and 10 held at large, are awarded annually to freshmen, for four years, provided the beneficiary maintains a satisfactory record.

Board of Regents Scholarships. Ninety tuition scholarships awarded each year; ten reserved for foreign students.

Other Scholarships

Other Scholarships Administered by the Scholarship Committee. Alonzo Gartley (in agriculture); ASUH Scholarship-Leadership grants; Charles W. Atkinson Real Estate; Chi Epsilon (Civil Engineering); Chinese Community; Emma K. Mossman; Fushiminomiya Memorial Scholarship Endowment Fund; Harry H. Collins; Hawaiian Airlines; Hawaiian Telephone; Honolulu Civic Club; ILWU (Social Work); Iota Alpha Fraternity; John Fee Embree; Kazuo and Akiyo Totoki; Kenji Yamaguma Memorial; Korean Foundation; Korean University

Club; Leora Parmlee Dean (sponsored by the Women's Campus Club); Music Department; Riley H. Allen Memorial Fund; Ruth C. Scudder Memorial (sponsored by the Women's League of Central Union Church); Joseph F. Smith Memorial; Stephen Spaulding; Theodore R. Rhea Hawaii Cancer Society Memorial; Honolulu Kumamoto Kenjin Kai (Japanese Language); Honolulu Police Relief Association; Robinson A. McWayne Memorial Scholarship.

Scholarships Administered by Individuals and Private Organizations, with Assistance from the University Scholarship Committee. Alfred Apaka Memorial; Antone Vidinha, Jr., Fund; Associated Chinese University Women; Chinese Women's Club; Dole Corporation; Francis H. Kanahale Memorial; Fred Dailey Waikikian; Hale Nani Hospital; Hawaii Hotel Association; HGEA, University Chapter; Honolulu Japanese Junior Chamber of Commerce (Nurses); Joseph F. Smith Memorial; Keane Art; Ke Anuenue Alumni Sorority; Leilehua Parent Teachers Association; Liberty Bank of Honolulu; Miles E. Cary Memorial; Pacific Concrete and Rock Co.; Palolo Lions Club; Ralston Purina; Society of American Military Engineers; Soroptimist Club; Standard Oil Company FFA; Theodore Char, CPA Accounting; Wahiawa Lions Club; Wahiawa-Waiialua Rotary Club; West Honolulu Rotary; Women's Auxiliary of the Home Builders Association of Hawaii.

Scholarships Administered Entirely by Private Organizations. The Scholarship Committee has no direct information about the independent awards listed below: Aiea High School PTA; Aiea Lions Club; Ala Moana Lions Club; Beta Sigma Phi Sorority; Betty Crocker; Brother David Paaluh; Central Maui Hawaiian Civic Club; Chinese University Club; "Chu" Baldwin Kahanamoku Foundation; Ewa Beach Lions; Filipino Scholarship Foundation; First Trust Company of Hilo; Fort Shafter NCO Wives Club; General Henry Arnold Education Fund, U. S. Air Force Aid Society; Harold B. Turney-Dorothy K. Gillett Music Fund; Hawaii Veterans Memorial Fund; Hawaiian Civic Club; Honolulu Community Chest; Hui O'Wahine, Fort Shafter Women's Club; Hui Pookela Honorary; IBEW, Unit I, Local Union 1186; ILWU, Naalehu Unit, Local 42; Independent Telephone Pioneer Association; Kailua Hawaiian Civic Club; Kailua High School; Kalia Lions Club; Kamehameha School; Koko Head Lions Club; Lahainaluna P.T.A.; Leeward Oahu Junior Chamber of Commerce; Leeward Oahu Lions Club; Leilehua P.T.A.; Leilehua F.T.A.; Leonard's Bakery; March of Dimes Health Careers; McKinley High School; National Honor Society; Pacific Fellowship (sponsored by the American Association of University Women); Pali Lions; Peter H. Fukunaga Foundation; Rama Watumull Fund; Star Markets, Ltd.; United Okinawan Association of Hawaii; Wahiawa Filipino Community Association; Wahiawa Hawaiian Civic Club; Waiialua Agricultural Co.; Waiialua Hawaiian Civic Club; Waiialua High School P.T.A.; Waiialua Lions Club; Wallace Rider Farrington (for graduates of Farrington High School sponsored by the Honolulu Star-Bulletin); Wong Kong Har Tong Society; Yang Chung Hui Sorority.

Federal Grant Program. The University of Hawaii participates in the Federal Educational Opportunity Grant Program which provides assistance to undergraduate students with exceptional financial need. Grants range from \$200 to \$800 a year and can be no more than one-half of the total assistance given to the student.

LOANS

Through the generosity of various organizations and individuals, certain funds have been provided from which students may borrow—either in small amounts to meet emergencies or in larger sums to defer part of tuition costs. These loans are to be paid before the end of the semester or summer session during which they were borrowed. First year students (freshmen and transfers) are not eligible for these loans if their permanent residence is other than Hawaii. A student wishing to make use of these funds should consult one of the financial aid counselors. Loan funds include the following:

Alumni Fund—Molokai Chapter; Andrew J. Salz Fund; Carey D. Miller Fund; Chinese Students' Alliance Fund; Commerce Club Fund; Edgar Wood Memorial Fund; Future Farmers of America, Uniwai Chapter Fund; George H. Lamy Fund; Gruscidada Fund; Hawaiian University Association Fund; Helen Strong Carter Dental Fund; Honolulu Civic Association Fund; Inez Wheeler Westgate Fund; Japanese Students' Alliance Fund; Louise S. Jessen Memorial Fund; Mary L. Kelsey Fund; Minnesota Club Fund; Moir-Ross Health Fund; N.G.B. Fund; Ruth Alexander, M.D., Student Fund; Representatives Club Fund; Ruth Bentler Fund; Senior Class Fund; Student Fund of the College of Education; Theodore T. Kawahara Memorial Fund; Wahiawa-Waiialua Rotary Fund.

Federal Loan Programs. The National Defense Student Loan, Nursing Student Loan, and Medical Student Loan Programs are available to qualified students attending the University of Hawaii. Students are not required to repay any of the principal or interest until nine months after leaving their studies. For the borrowers who enter the teaching or nursing professions, it is possible for them to cancel part or, in the case of some teachers, all of their loans if certain conditions are met. Applications for these loans are available in the Office of Financial Aids.

Students wanting to borrow through the Federal Guaranteed Loan Program must process their applications through the agency designated in the state where they maintain permanent residence. Hawaiian students are required to go through the State Department of Budget and Finance. (In Hawaii this is the same as the United Student Aid Fund Loan. Application forms are available from the Department of Budget and Finance, commercial lending institutions, or Financial Aids Office, University of Hawaii.)

STUDENT EMPLOYMENT

The University of Hawaii participates in the Federal College Work-Study Program and also employs students to work part-time in offices, laboratories, libraries, in maintenance work and other jobs on campus.

Students who plan to work their way through college are advised to have funds for all major expenses (tuition, books, room, board, clothing and travel) for the first year. Keen competition for jobs as well as the problems of adjusting to university life make it difficult for first year students to earn more than limited spending money.

Applications for student employment are obtained from the Financial Aids Office. Preference is given to students with greatest need for financial assistance in order to continue their education.

Prizes and Awards

General Honors

Deans' List. Shortly after the close of each semester the *Deans' List* gives the names of all full-time undergraduate students who achieved a grade-point average of 3.5 or above for the preceding semester.

Honorary Societies. Chapters of national honorary societies at the University include Phi Beta Kappa Alpha chapter (liberal arts and sciences); Phi Kappa Phi Hawaii chapter (general scholarship); Sigma Xi (sciences); Pi Gamma Mu (social sciences); Phi Delta Kappa (education); Sigma Pi Sigma (physics); Delta Sigma Rho (forensics); Chi Epsilon (civil engineering); Eta Kappa Nu Association (electrical engineering); Omicron Delta Kappa (scholarship and leadership); Phi Eta Sigma (freshman men); Mortar Board Hui Pookela chapter (senior women); Alpha Lambda Delta (freshman women); Pi Lambda Theta Beta Zeta chapter (women in education); Delta Phi Alpha (German); Pi Delta Phi (French); Beta Phi Mu (library studies).

General Awards

American Institute of Chemists' Award for outstanding achievement in chemistry.

Arthur Lyman Dean Prize for Undergraduate Research—any senior may compete for this prize by presenting a thesis reporting fully his research in any field of intellectual endeavor. The winning paper is placed in the Hawaiian and Pacific Collection of Sinclair Library.

Bernadine Siu Yin Ho Memorial Speech Award, a cash prize for excellence, dedication and service to the University's forensics program. The winner's name is engraved on a perpetual trophy.

Carl F. Knobloch Prize in Government, cash prize to the outstanding student in the field of political science.

Charles Eugene Banks Memorial Prize, cash prize awarded each year to the student whose manuscript is judged the best in a creative writing contest. This manuscript is placed in the Hawaiian and Pacific Collection of Sinclair Library.

Charles F. Loomis Prize, cash award to an undergraduate for outstanding contribution to understanding of people and events in Asia or the Pacific Basin. Entries in the competition may be research or interpretive papers.

Departmental Awards, ASUH Certificates, to students who performed outstanding services for their departments while maintaining excellent scholastic records. Departments include art, drama, elementary education, history, home economics, industrial arts, nursing, political science, psychology, speech, zoology.

Ernest Hemingway Memorial Award, annual cash award to junior student, resident of this state, for creative and original writing ability.

Faculty Club Prize, cash award to the senior who graduates with the second highest scholastic record in the class.

Hawaiian Botanical Society Award, annual cash award and perpetual plaque in the department of botany, honoring a senior for outstanding academic record in the plant sciences.

Health Award Scholarship in medicine, for outstanding academic record and achievement in the pre-medical program.

Joseph Fielding Smith Memorial Award, annual cash award to an outstanding student in speech.

Library Prize for Pacific Research, two cash awards (graduate and undergraduate) for the best papers based upon research in the Pacific area. The prize-winning papers are placed in the Hawaiian and Pacific Collection of Sinclair Library.

Merck Drug Company Award, for outstanding achievement in chemistry.

O. C. Magistad Award of the Hawaiian Section of the American Chemical Society. A one-year membership and subscriptions to several journals to the outstanding senior in chemistry. The winner's name is engraved on a bronze plaque.

Phi Beta Kappa Recognition Award, made in recognition of high scholastic standing among sophomores in arts and sciences.

Phi Kappa Phi Prize, cash prize awarded by the Hawaii Chapter to the senior who graduates with the highest scholastic record in the class.

Ralph S. Kuykendall Prize in History, granted to the outstanding history major in the graduating class.

Real Dean Award of Honor, medal award in recognition of four years of outstanding service in student activities.

Sigma Pi Sigma Scholarship Award, presented annually to outstanding student in physics.

Taraknath Das Prize in Asian History and Politics, an annual cash prize, offered by the Taraknath Das Foundation, to a senior submitting the best essay on a selected topic in the field.

Theatre Group Annual Award, medal awarded to an undergraduate for outstanding contribution to the University Theatre.

Theatre Group Playwriting Prizes, cash prizes awarded annually for the three best original short plays written by Hawaii residents.

Business Administration

Business Education Award of Merit for outstanding achievement in the field.

Dean Wermel Memorial Plaque, a perpetual plaque honoring the outstanding senior in business administration each year.

Outstanding Junior in Business Administration, a plaque awarded to the outstanding junior in the field.

Outstanding Seniors in Accounting, cash awards made annually to three outstanding seniors in the field.

Outstanding Senior in Business Economics and Statistics, a perpetual plaque honoring the outstanding senior in the field.

Outstanding Senior in Finance, Insurance, Law, and Real Estate, a perpetual plaque honoring the outstanding senior in the department.

Outstanding Senior in Management, a perpetual plaque honoring the outstanding senior in the field.

Outstanding Senior in Marketing, a perpetual plaque honoring the outstanding senior in the field.

Outstanding Senior in Personnel and Industrial Relations, a perpetual plaque honoring the outstanding senior in the field.

Outstanding Senior in Travel Industry Management, a perpetual plaque honoring the outstanding senior in the field.

Outstanding Sophomore in Business Administration, a plaque awarded to the outstanding sophomore in the field.

Engineering

American Society of Civil Engineers Award, Hawaii Section, a cash prize and a year's membership in the Society to an outstanding senior in civil engineering.

American Society of Civil Engineers Wives' Auxiliary Award, to five outstanding graduates in civil engineering.

American Society of Mechanical Engineers Wives' Auxiliary Award, to three outstanding seniors in mechanical engineering.

Chi Epsilon Freshman Award, to an outstanding engineering freshman.

Eta Kappa Nu Sophomore Award, to the engineering sophomore making the highest grade-point ratio.

Robert Edwin Hughes Award in Engineering, for outstanding engineering report-design, accomplishment or achievement by an undergraduate in the field.

Home Economics and Agriculture

Carey D. Miller Award in Home Economics, cash award to an outstanding senior for scholastic and leadership abilities in the field.

Danforth Summer Fellowship Awards, given by the Danforth Foundation and Ralston Purina Co. of St. Louis, to an outstanding junior in home economics. Recipients spend two weeks in classes at the Ralston plant and two weeks in a leadership training course at the American Youth Foundation, Shelby, Michigan.

Hawaii Dietetics Association Award, annual cash award, to an outstanding senior graduating in dietetics and institutional management.

Home Economics Staff Award, to a freshman and a senior with highest grade-point averages, in recognition of outstanding scholarship and leadership ability.

University of Hawaii Chapter of American Home Economics Association Award, to the outstanding member of the chapter.

Zera C. Foster Memorial Award, to the outstanding graduate in agriculture.

Military Science and Aerospace Studies

Best Soldier Award, to the sophomore Army ROTC cadet who attained highest ROTC grades for the academic year.

Best Soldier Award, medal presented by the Honolulu Star-Bulletin to the freshman cadet who attained the highest grades in ROTC for the academic year.

Captain H. Gaylord Dillingham Memorial Award, to the Air Force ROTC cadet having the highest scholastic record at the end of the sophomore year and who is approved for advanced training.

Major John A. Johnson Memorial Award, cash award, presented to the Army ROTC cadet with the best scholastic record at the end of the sophomore year and who is approved for advanced training.

Warrior of the Pacific Trophy. The Department of the Army supervises an annual rifle marksmanship competition among ROTC infantry units in universities for possession of a bronze statuette of a native Hawaiian soldier. Residents of Hawaii offer the trophy.

Nursing

Hui Kahu Ma'i Award for Leadership, in nursing.

Hui Kahu Ma'i Professional Nurse Award.

Hui Kahu Ma'i Scholarship Award, in nursing.

Hui Kahu Ma'i Service Award, in nursing.

Tuition and Fees*

Regular Session Fees

Fees are charged according to the number of semester hours carried by the student; auditors (those enrolled in a course for no credit) pay the same fees as students enrolled for credit. Out-of-state students pay the same fees as resident students.

Full-time students (12 or more credit hours) per semester:

Tuition	\$85.00
General Fee	18.00
Course fees for applied music and institutes (see listings under appropriate colleges)	
Associated Students Activities Fees† (for all undergraduate students).....	13.25

Part-time students (less than 12 credit hours)

Tuition (maximum of \$85.00)—(per credit hour).....	9.00
No General Fee	
No Associated Students Activities Fees	
Students registered in the College of General Studies pay fees as indicated in the bulletins of that college.	

*The tuition and fee schedule set forth here may be changed during 1968-69.

† At the request of the Associated Students of the University of Hawaii (ASUH) and the governors of the Hemenway Activities Council (HAC), and the department of athletics as authorized by the regents, the treasury office collects certain student activity and athletics fees at registration time. These fees total \$13.25 each semester, of which approximately \$8.25 is used to cover membership in the ASUH and HAC for undergraduates taking 12 or more credit hours (if more than 6 are in the regular day program), class dues, the use of services and facilities in Hemenway Hall, and participation in the social, cultural and recreational programs provided. The remaining \$5.00 is used by the department of athletics for the promotion and support of varsity athletics.

For students taking fewer than 12 credit hours, the fees are optional and the benefits limited. These fees are not collected for the summer session. Complete details are available at the Bureau of Student Activities.

Summer Session Fees

Tuition (courses audited or taken for credit) (per credit hour)	\$16.00
Student Activity Fee (applies to 1st term)	2.50
Course fees for applied music, institutes, and other special programs as noted in <i>Summer Session Bulletin</i> .	

Late Registration Fee

A fee of \$5.00 is added to the student fees when a student registers or pays the fees after the announced days of registration.

Miscellaneous Fees

Change of program after the initial registration (does not apply to complete withdrawals from the University)	\$ 2.00
Credential Evaluation Fee (all out-of-state applicants) *	10.00
Graduation Fee: Bachelor's degree (each)	5.00
Advanced degree	5.00
Five-Year certificate	2.50
Thesis Binding, 2 copies	4.00
Rental of Cap and Gown	4.00
Rental of Master's Hood	4.50
Rental of Doctoral Hood	5.00
Transcript of Record (no charge for first copy) †	1.00
Replacement of laboratory equipment (items broken or lost)	Cost of Item
Check returned for any cause: Regular Session	5.00
Summer Session	10.00
Credit by Examination (per credit hour) (payable at time of application)	9.00
Special Examination (in regularly constituted courses at other than the specified times, except for make-up examinations)	10.00

Payments

For registration to be official all fees must be paid within 24 hours after the close of the final day of regular registration. Exceptions may be made by the treasury office only upon written permission by the dean of student personnel.

*Applications from outside Hawaii must be accompanied by a \$10.00 application fee (money order or certified check). This fee is non-refundable, but, if the applicant is accepted, will be credited toward tuition for the semester for which he has applied.

†A student who requests the admissions and records office to send a transcript of his work to another institution is not required to pay for the first copy but is charged \$1.00 for each subsequent copy.

Refunds

Tuition and special course fees for the academic year may be refunded to students who withdraw from courses, the percentage refunded to be in accordance with the following schedule:

Withdrawal during

- first two weeks of instruction, 80%
- third and fourth weeks of instruction, 40%
- remainder of semester, 0%

For summer session refund schedule see *Summer Session Bulletin*.

Applications for refunds must be made at the business office, and approved by the dean concerned.

In no case is refund made for any part of the general fee, late registration fee, or fee for returned check.

Veterans

Veterans, or orphans of veterans, registering for the first time under any of the various federal veterans' bills, should present a proper Certificate for Education and Training or Certificate of Eligibility and Entitlement.

Academic Regulations

Student Classification

Persons attending classes at the University of Hawaii enroll as students or auditors. Undergraduate and graduate students enroll for credit. Auditors are permitted to attend classes but receive no credit for the course. Students may be designated as *classified* or *unclassified*, *full-time* or *part-time*.

Classified Students

Undergraduates are designated *classified* or *unclassified* students. *Classified* students follow prescribed programs of study leading to the bachelor's degree. Undergraduates are divided as follows: freshmen, 1-24 credit hours completed; sophomores, 25-54; juniors, 55-88; seniors, 89 or more. Freshmen and sophomores are lower-division students; juniors and seniors are upper-division students.

Graduate students (graduates of this University or other institutions of approved standing) are designated *classified*, *five-year diploma candidates* or *unclassified*.

Those admitted to the University's Graduate Division are termed *classified* students, in one of three categories: regular, probational and special. These students work toward advanced degrees or in special non-degree training or certificate programs.

Five-year diploma candidates are graduate students in the College of Education following a curriculum leading to that diploma.

Unclassified Students

Undergraduate and graduate students who are not candidates for a degree are termed *unclassified* students in their respective divisions. Both enroll in the College of General Studies. Some unclassified graduate students work toward the professional certificate of the State Department of Education, and others later seek admission to the Graduate Division. The unclassified status may not be used to evade technical or scholastic requirements of the college, school or Graduate Division.

Full-time and Part-time Students

Undergraduates, graduates and unclassified students may be either part-time or full-time students. Such terms are for registration purposes only and

have no further significance. Ordinarily a full-time student carries a minimum of 12 credits. Graduate students are considered full-time or part-time according to Graduate Division regulations.

Auditors

Auditors are those students who are permitted to attend certain classes with the consent of the instructor. No credit is given for a course which is audited. In general, auditors are not allowed in laboratory science, mathematics, elementary and intermediate modern languages, English composition, speech or studio art courses, or in classes limited in size where credit students might thereby be excluded. Auditors do not take course examinations. The extent of their classroom participation is at the option of the instructor.

Admission Information for Entering Students

ADMISSION OF UNDERGRADUATES

Candidates for undergraduate admission to the University of Hawaii must present satisfactory evidence of ability to do university work. Usually this is done in terms of previous academic records, scores on the Scholastic Aptitude Test and recommendations.

Applications and correspondence should be directed to:

Director, Office of Admissions and Records
Bachman Hall 125
University of Hawaii
2444 Dole Street
Honolulu, Hawaii 96822

Applications must be received by July 1 for admission in the fall semester and by December 1 for the spring semester.

The University of Hawaii uses social security numbers as student numbers. Students are required to give their social security number on their application forms. Students should also acquaint themselves with zip codes of their permanent and local addresses for correspondence purposes.

Admission of Residents as Freshmen

Residents of the state of Hawaii applying for admission as freshmen must submit scores on the Scholastic Aptitude Test of the College Entrance Examination Board, high school transcripts and recommendations from qualified persons. A high rating in one factor will not insure admission, nor will poor performance in another area exclude an applicant if other evidence indicates that he might be successful in university work. Ordinarily a student should achieve a *B* or better average in high school. The quality of work done during the last two years in secondary school receives special consideration.

Candidates for fall admission should take the Scholastic Aptitude Test before or during December of the senior year in high school. Candidates for spring admission should plan to take the test before or during July. For information on the SAT test, consult a high school counselor or write to the nearest CEEB center:

College Entrance Examination Board
 c/o Educational Testing Service
 Box 1025
 Berkeley, California 94701

or Box 592

Princeton, New Jersey 08540

Every applicant must take the SAT and submit evidence that he has satisfactorily completed at least 15 units of work in a four-year high school or at least 12 units of work in a three-year high school.

Minimum Unit Requirements for Admission

From a 4-Year High School	Subject	From a 3-Year High School
3	ENGLISH	3
1	ALGEBRA	1 (Not required if the student has had elem. algebra in the ninth grade.)
6	ENGLISH—In addition to the 3-unit minimum requirement in English.	4 (If applicant offers elementary algebra this requirement is 5 units.)
	SCIENCES—Physical, biological, and social.	
	MATHEMATICS—In addition to the 1-unit minimum requirement in mathematics.	
5	FOREIGN LANGUAGES—Entrance credit in foreign language is not granted unless the total number of foreign language units offered includes at least 2 units in some one language.	4
	Any other subjects (except physical education and ROTC) credited by the high school toward its diploma (no less than ½ nor more than 2 units in any one subject) provided that these subjects have been pursued in accordance with regular classroom procedure involving a reasonable amount of preparation in addition to the time spent in class.	
15	. . . . . TOTAL	12

The word *unit* as employed here signifies the satisfactory completion of a full school year's course of study, which includes five class sessions a week of not less than 45 minutes each, or the equivalent for laboratory and shop exercises. For an acceptable distribution of units required of entering students, see the accompanying table.

Admission of Out-of-State Students as Freshmen

Candidates applying for admission as freshmen to the University of Hawaii from outside the state should meet all the requirements noted for Hawaii applicants (see above). *Out-of-state candidates should await notice of acceptance before coming to Hawaii. No special consideration can be given to students who arrive at the last minute and whose credentials are not in order.*

Admissions decisions are made without regard to the availability of housing. It is the student's responsibility to arrange for housing.

Admission of Transfer Students

Candidates for admission currently enrolled in other universities, colleges or institutions of higher learning must file their applications and credentials with the office of admissions and records by July 1 for admission in the fall semester and by December 1 for admission in the spring semester.

Students who transfer from other accredited universities and colleges may be granted advanced standing. Official transcripts from all institutions attended must be sent to the director of admissions and records. Each transcript must include a listing of courses taken, the grade received in each and a note of honorable discharge from the institution. These transcripts become a permanent part of University files. A supplementary transcript of courses in progress must also be sent to the admissions and records office at the end of the semester. If a supplementary transcript is not submitted, it will be assumed that the student has decided not to enter the University. Candidates who have not completed 24 acceptable academic credits must also submit high school transcripts and scores on the Scholastic Aptitude Test of the College Entrance Examination Board.

Credit accepted toward graduation is given only in subjects substantially equivalent to University of Hawaii offerings, and grades earned in these courses must be C or better to be recorded. No more than 60 semester hours are accepted in transfer from a junior college.

Students transferring from unaccredited institutions must meet University of Hawaii standards of admission. Upon the completion of a minimum of 30 semester hours with an average of C or better, credit may be given for courses at the previous institution. Such credit, however, will not exceed 60 semester hours, and will be granted only for courses usually considered lower division and substantially equivalent to University offerings.

Admission of Mature Persons

Mature persons may register as special students when their backgrounds qualify them for credit work. Such students, however, will not be admitted to

a degree-granting college or allowed to become a degree candidate unless all admission requirements have been satisfied.

Admission as a special student in no case serves as a means of avoiding compliance with requirements laid down for regular students.

Admission of Veterans and Other Individuals

Veterans and other individuals may take examinations covering preparatory school subjects as a means of fulfilling unit requirements. Successful performance on these and the Scholastic Aptitude Test will admit these candidates to the University. Such individuals, however, must meet all special requirements for admission to such curricula as engineering, agriculture and nursing. It is understood that persons in this category will become degree candidates.

ADMISSION TO CERTAIN UNDERGRADUATE PROGRAMS

Candidates for admission to certain programs must meet special requirements. Each applicant should study the conditions set by the college he intends to enter and for the program he intends to pursue in that college. Special attention is directed to the following requirements.

Arts & Sciences

All prospective students of the College of Arts and Sciences are strongly advised to offer at least two years of college preparatory mathematics and three years of a foreign language.

Students who expect to select as their major areas of study mathematics, the natural, biological or physical sciences, and most social sciences, must have had plane geometry, two years of algebra, and trigonometry, or their equivalents. Solid geometry is also strongly recommended.

Engineering

Prospective engineering students must have had plane geometry, two years of algebra, and plane trigonometry. It is strongly recommended that they also have mechanical drawing, physics and solid geometry. Engineering students who have not completed trigonometry or mechanical drawing in high school should arrange to take these subjects during the summer session preceding their freshman year.

Medical Arts

Applicants for admission to the dental hygiene program are required to take the American Dental Hygienists' Association Aptitude Test. Information about the test and the application may be obtained from the department of dental hygiene or the American Dental Hygienists' Association, 304 East 45th Street, New York, New York 10017.

Prospective students of medical technology should have completed at least two years of algebra, a unit of plane geometry and one of trigonometry. A course in pre-calculus is recommended. A year of chemistry and a year of physics are strongly advised.

Business Administration

Prospective students of the College of Business Administration should have completed two years of algebra and plane geometry or their equivalent. Trigonometry is strongly recommended.

Early Admission

Qualified high school juniors and seniors may enroll in University courses. Juniors may be admitted to the summer session before their senior year, and seniors may carry one or two University courses during their last year of high school. Students desiring to take advantage of this program should ask their high schools to recommend them, arrange to have high school transcripts sent to the office of admissions and records, and take the Scholastic Aptitude Test of the College Entrance Examination Board. The continuance of these students in the early admission program is reviewable at the end of each term.

Selected Studies and Honors Program

Admission to the Selected Studies Program is by invitation to freshmen and sophomores whose high school records and aptitude test scores, or whose recommendations from the University faculty, indicate that they have the qualities needed to profit from the opportunity.

Juniors and seniors who wish to graduate with honors degrees may join the Honors Program. Application for admission to the program may be made by any regularly registered undergraduate at the end of his sophomore year or during his junior year.

ADMISSION OF GRADUATE STUDENTS

Graduates of accredited colleges and universities who wish to undertake graduate study in the University of Hawaii Graduate Division should apply to:

Dean, Graduate Division
c/o Student Services
Spalding Hall 354
2540 Maile Way
University of Hawaii
Honolulu, Hawaii 96822

Each application should be accompanied by two official transcripts of work completed at all institutions of higher learning including the University of Hawaii. Admission to graduate study is provisional until such records are on file. These transcripts become a permanent part of University files.

Applications must be received by April 30 for the fall semester, October 30 for the spring semester, and March 30 for the summer session.

Consult the *Graduate Bulletin* for advanced degree programs and requirements. The bulletin may be obtained by writing to: University Bookstore, 1760 Donaghho Road, University of Hawaii, Honolulu, Hawaii 96822. The price is 25 cents.

Registration for Courses; Withdrawals and Other Changes

REGULAR REGISTRATION

Registration for courses is usually held one week prior to the opening of the semester. Early registration is usually held a month earlier than this for regularly enrolled students on campus. The dates for registration are given in the University Calendar (p. 3). Entering students receive circulars with instructions for registering. Courses are described in this catalog under the various college sections. A schedule stating the time and place of meetings for each course is issued by the records and admissions office prior to registration.

Regular attendance at class and laboratory sessions is expected for all courses in which a student enrolls. Unavoidable absence should be explained to the instructor concerned.

Undergraduates. Each undergraduate is assisted by a faculty adviser assigned by his college to help him prepare an academic program which meets the goals he sets for himself. Tuition and fees are payable at the time of registration. A student is not officially registered until he has paid his tuition and fees.

Graduates. Graduates follow the same procedure in registration as do undergraduates. Consult the Graduate Division for special instructions.

Auditors and Unclassified Students. Auditors and unclassified students register after the period assigned for the registration of classified undergraduate and graduate students. Instructions for auditors and unclassified students are issued at the beginning of each semester.

LATE REGISTRATION

Registration for credit (initial or as a result of program changes) after the announced registration days is permitted only in exceptional cases and for valid reasons. The following rules govern such late registration: (1) during the first eight days following the last official day of registration, written approval must be secured from the dean concerned; (2) subsequent to the eighth day, students may register only as auditors and must have the written approval of the dean and the instructor concerned. Corresponding restrictions apply to summer session registration and are stated in the *Summer Session Bulletin*.

Auditors need not comply with these regulations, except that they cannot change to credit status after the above late registration periods.

OTHER PROVISIONS

Maximum Registration. Students may not register for courses in the College of General Studies, for credit or audit, in excess of the maximum registra-

tion allowed by the college in which they are enrolled. Students must carry a minimum of 12 credits to be considered full-time. Graduate students should consult the *Graduate Bulletin*.

Variable Credit Courses. The number of credits obtainable in most courses is stated in this catalog and in the schedule of courses available shortly before registration. However, certain courses, designated by "hours arranged," offer variable credit. Students in these courses usually carry on individual work. The number of credits for which a student enrolls and will earn in such a course must be approved by the instructor at the time of registration. Students register for a definite number of credits and may earn no more or less than the stated number without the college dean's approval.

Course Changes. Students wishing to change a course or courses must follow the procedures given for withdrawing from a course (see below) and for late registration (see above). Forms are available at the college dean's office.

WITHDRAWAL FROM COURSES OR FROM THE UNIVERSITY

To withdraw from a course, a student must have the written consent of the dean of his college on a form available at the dean's office. Complete withdrawal from the University must be applied for on a form available only at the admissions and records office. Signatures as indicated on the forms must be obtained, and the completed forms turned in to the business office.

During the first three weeks of a semester, formal withdrawal from courses is not indicated on a student's record. After the first three weeks a formal withdrawal is marked *W-F* if the work was failing; otherwise, it is marked simply *W* (not failing). Withdrawals are normally not permitted during the last four weeks of instruction in a semester. A dean may approve a withdrawal for legitimate reasons. A student who ceases to attend a course without complying with the official procedure for withdrawal receives an *F* for the course. The effective date of withdrawal is the date recorded by the business office.

Refunds for withdrawals from courses and from the University are noted under "Tuition and Fees—Refunds."

TRANSFERS WITHIN THE UNIVERSITY

A student may apply for transfer from one college to another during either semester. Application for transfer must be made on a form supplied by one of the deans concerned. The application must be approved by the deans of the two colleges and returned to the admissions and records office as soon as possible. Changes of college, curriculum or major are not permitted during registration periods.

Credits, Grades and Examinations

Work accomplished by students is usually recognized in terms of *credits*, *grades*, *grade points* and *grade-point ratios*. Grade reports are given out at the end of each term.

Credits. A *credit* (also called a *semester hour* or a *credit hour*) is given to a student for work satisfactorily accomplished during three hours a week spent in the preparation and recitation of assignments in a course, or in the field or laboratory. The normal division of time in non-laboratory courses is one hour in the classroom and two hours in preparatory work. Thus, a three-credit course signifies that the class usually meets three hours a week and that the student is expected to spend six hours in preparation of assignments.

Grades. *Grades* given in all courses are *A*, *B*, *C*, *D*, *F* and *I*, except for 800 (thesis research) in which the grade of *S* (satisfactory) is given upon acceptance of the thesis. The lowest passing grade is *D*.

An *I* is given to a student who has failed to complete a small but important part of a semester's work before the semester grades are determined, if the instructor believes that failure was caused by conditions beyond the student's control and not by carelessness or procrastination. Instructors will send a report of "Incomplete" to each student receiving an *I*, indicating the steps to be taken to receive a passing grade. To receive credit for a course in which an *I* has been reported, the student must make up the incomplete work before the Thanksgiving or Easter recess of the next semester. If the work is not thus completed, the *I* will be changed to *F*. If the work is completed, the instructor will report a semester grade, taking the completed work into consideration.

When a student fails to appear for a final examination, the procedure is different. In this case, the instructor computes the course grade using *F* for the final examination. If, within one week after the final examination, the student obtains a note from his dean certifying that the absence was caused by valid circumstances (normally only medical ones), the instructor will enter a change of grade to an *I*.

For undergraduate students, credit in a course for which an *F* is given may be obtained only by passing the course, or its equivalent, either at the University of Hawaii or at some other accredited institution of higher learning.

Grade points are given for all courses in which grades are reported. They are computed as follows: for each credit received in a course, 4 grade points are granted if the grade is *A*, 3 if *B*, 2 if *C*, 1 if *D*, 0 if *F*.

Students entering as undergraduates with advanced standing are not given grade points for work done elsewhere. But on work done at the University of Hawaii, such students must gain grade points in the same proportion to credit hours required for graduation as that demanded of other students.

Grade-point ratios are determined by dividing the total number of grade points by the total number of credits for which a student has been registered. Courses for which grades of *W* or *I* have been recorded are not included in the computation of ratios. For undergraduate students, grades of *F* or *W-F* are included until credit is subsequently obtained in the course in which failures have been reported.

Grade Reports. Grade reports are sent to students through campus mail at the end of each semester and summer session. Those desiring the report forwarded should leave a stamped self-addressed envelope at the campus mail office. Students in evening classes should leave stamped self-addressed envelopes at the office of the dean of the College of General Studies.

Copies of the grade reports of all classified undergraduate students are sent to parents or guardians at the end of each semester. In addition, copies of mid-semester deficiency notices are sent to the parents or guardians of freshmen and sophomores.

Pass-Fail. Undergraduate students may, with approval of their adviser, choose to take up to two courses a semester on a "pass" or "fail" basis, provided they are not on academic probation and that the course is not required by the college in the student's "major requirement." To qualify for a pass grade, the work of the student must be at least at the *C-* level. Departments may, at their option and upon the approval of the appropriate curriculum committee of the college, designate certain lower division introductory courses in the 100-199 series on a compulsory pass-fail basis, but these courses are exempt from the two pass-fail course maximum the student is permitted to take in any one semester. No more than forty (40) credit hours taken on a pass-fail basis may be counted toward the degree. A grade of "P" (pass) is not computed in the grade-point average; however, a grade of "F" (fail) is.

EXAMINATIONS

Course Examinations. Final examinations are required in all undergraduate courses except directed reading, research and seminar courses. No examinations (other than short quizzes) are allowed during the two weeks prior to the final examination period. The schedule of final examinations is issued by the office of admissions and records prior to the testing period.

Foreign Language Placement Examinations. All students who have had previous study of foreign language courses and intend to continue their study of that language at the University of Hawaii must, prior to enrollment in a course, take a placement test which will assist in determining in which course they should enroll. Registration for foreign language courses will not be permitted until proper placement has been determined. For further information, contact the offices of the European languages department (Webster 301) or the Asian and Pacific languages department (Webster 311).

Credit for Previous Foreign Language Study. Credit towards graduation for learning of foreign languages which has been accomplished outside the University of Hawaii may be granted in one of five ways: by transfer from another institution, by placement, by regular credit by examination, by special credit by examination, or through the Advanced Placement Program.

For students who have taken the placement test (see above), completion with a grade not lower than *C* or its equivalent, of the course in which a student has been placed, will result in his automatically receiving credit not only for the course he has passed but also for all lower division courses which are prerequisite to that course, up to a maximum of 14 credits.

Students who do not wish to enroll in a foreign language course (e.g., because they have completed their requirement or because they are enrolled in a college which has no such requirement) may receive credit for lower-division foreign language study completed outside the University of Hawaii (up to a maximum of 14 hours) by passing a special credit examination administered by the appropriate foreign language department. Apply to department offices for further details. Credit for other language work may be achieved by the regular credit by examination procedure (see below).

Credit towards graduation may also be obtained by means of attaining a score of 3 or better on the Advanced Placement Examination (available in French, German, Latin and Spanish). The Advanced Placement Examinations are administered in high schools by the Educational Testing Service for the College Entrance Examination Board on a nationwide basis for students who have completed specific college level course in high school. Further information may be obtained in most high schools, or directly from the Educational Testing Service, Princeton, New Jersey.

Credit by Examination. Any student who feels that he already possesses sufficient knowledge in one of the areas of the general education core (see below) to fulfill part of his degree requirements may apply to the Counseling and Testing Center to take a standard examination in any of the following fields: English composition, mathematics, humanities, natural sciences and social sciences—history. The student pays the fee charged by the College Entrance Examination Board, currently \$5.00. Students scoring at high levels will be given credit which will count toward graduation and toward fulfilling of the appropriate portion of the general education degree requirements; those making unsatisfactory scores benefit only from the experience. Norms for granting of credit in this manner are set by the College of Arts and Sciences.

Students who can show reasonable cause to believe that they have mastered the basic courses in economics, calculus, general chemistry or sociology and who wish to get credit by examination for any of these subjects, should state their case to the department chairman. If he is convinced, he will so inform the Counseling and Testing Center. The student applies to the center, pays the fee and takes the examination. A satisfactory score on these subject examinations, as determined by the appropriate department, yields course credit.

For other courses the examinations have to be specially prepared by University faculty members, and so the requirements are more stringent. An enrolled student who has been in attendance for the semester with a grade-point average of 2.4 or better and presents evidence to his college dean that he has had the equivalent of a course through experience or training but has not received college credit for the course, may apply for credit by examination. (See preceding section for foreign languages.) Application must be made within the first six-week period of a semester. Graduate students may also obtain credit in this manner for certain undergraduate courses. A fee is charged for each examination.

In each case the examination must be prepared or approved by the course instructor, must be more comprehensive than the usual "final examination" and must be designed to serve as the scholastic equivalent of the course. Courses passed by examination do not carry grade points.

Requirements for Continuation at the University by Undergraduates

Scholastic accomplishment is determined by the grade-point ratio (see above). If students fail to meet the minimum scholastic requirements of the University, they are put on probation, suspended or dismissed.

Undergraduates denied further registration include:

1. Those who, after taking 24 credits, have failed to achieve a cumulative grade-point average of at least 1.7.
2. Those on academic probation either by reason of work at this University or at another institution of higher learning, who have not established nor maintained a grade-point ratio of 2.0 in the work of the semester.

Probation. A student may be placed on academic probation at the end of any semester if he fails to maintain a 2.0 grade-point ratio on a cumulative basis. He may continue work at the University, but must achieve a grade point of at least 2.0 in order to continue beyond that semester.

Suspension and Dismissal. A student who has been denied further registration for the first time is placed on academic suspension. After one semester, a student on academic suspension may be readmitted to the University. However, he is then placed on probation and must achieve at least a 2.0 grade-point ratio to continue.

Rules Governing Probation, Suspension and Dismissal

1. Regulations governing academic probation may be applied at the end of any semester. Regulations governing academic suspension or dismissal are applied at the end of the spring semester, on the basis of both semesters' work.

2. Students who fail to meet the established grade-point ratio the first time are academically suspended and are eligible to return to the University not earlier than the succeeding spring semester. Such students, however, may attend the summer session immediately following their suspension. If they bring their cumulative grade-point average up to 2.0 or better, the Committee on Admissions and Academic Standing may set aside the suspension period and permit them to attend the fall semester.

3. Students who have been previously suspended, or students admitted on scholastic probation who fail to meet scholastic requirements are academically dismissed. Such students will be readmitted only in unusual circumstances.

4. Application for return from dismissal should be filed by July 1 for the fall semester, by December 1 for the spring semester and by May 1 for the summer session. The same deadlines apply for filing notification of returning after suspension.

Other Provisions. Warnings of low scholarship are given by instructors and deans usually at mid-semester, but the student should not assume that his work is of passing grade merely because he has not been warned. The University is not responsible if a warning mailed to a student fails to reach him.

Ordinarily failure in the first semester of a year course bars a student from registering for the second semester of that course.

Upon finding that a student is suffering from a physical or mental condition detrimental to the best interest of the student or the University, the vice-president for student affairs will, on medical advice, recommend proper action to the appropriate college dean. The dean may then require that the student be officially withdrawn, without academic penalty. Readmission will be contingent on review and recommendation by the college dean and the vice-president.

Degree Programs

Programs Leading to Advanced Degrees

At the graduate level, the University currently offers curricula leading to the Master's degree in 67 areas (including Arts, Science, Fine Arts, Business Administration, Education, Public Health, Library Studies and Social Work). Doctoral programs leading to the Ph.D. are presented in 27 fields. Post-graduate studies have been established in some of the sciences and medical arts. For information on these programs, and the five-year diploma curriculum in education, see "College of Education," and the annual *Bulletin* of the Graduate Division.

Programs Leading to the Bachelor's Degree

PURPOSES OF UNDERGRADUATE INSTRUCTION

Students come to American universities with many interests and motivations, both cultural and vocational. The University of Hawaii attempts to respond to as many of these interests as seem appropriate to an institution of higher education. Thus, it currently provides six different undergraduate degrees (bachelors of Arts, Fine Arts, Science, Business Administration, Education, Music) in a total of 64 academic fields.

The primary purpose of each undergraduate curriculum is intellectual—to educate students to think for themselves: to analyze, to apply appropriate standards, to arrive at their own judgments. In the process, students should gain knowledge and sharpen their ability to communicate, both in standard prose and in the symbolism of mathematics, logic and the arts.

Generations of students have discovered, though sometimes only after graduation, that there is no real conflict between the goals of liberal or general education set forth by a university and their individual career goals. There is no surer preparation for professional life than an education which enhances the ability of the individual to keep learning all his life and to communicate effectively with his fellow men, and such are the overall purposes of general education at the University of Hawaii.

Secondly, each undergraduate curriculum tries to lead the student to sufficient depth in a field of learning so that he can understand its central concepts, some of its methodology in examining problems, the standards of truth, value and relevance which it employs. Seldom in the contemporary world does the

bachelor's degree signify that the student is ready to practice the art or science which he has been studying (there are a few exceptions, such as nursing). Usually the baccalaureate shows that the student is ready for specialized training in a field, either by graduate study or by work on the job, and that he has attained a general education illuminated by some beginning work in a particular field.

Undergraduate degrees awarded:

1. By the College of Arts and Sciences: bachelor of arts (B.A.), of fine arts (B.F.A.), of music (B.Mus.), and bachelor of science (B.S.).
2. By the colleges of Tropical Agriculture, Engineering, or Health Sciences: bachelor of science (B.S.); the diploma designates the particular program of study completed.
3. By the College of Education: bachelor of education (B.Ed.), except in the recreation leadership program, where a bachelor of science (B.S.) is granted. Holders of bachelor's degrees who complete the five-year program in education receive a diploma certifying that.
4. By the College of Business Administration: bachelor of business administration (B.B.A.).
5. By the School of Nursing (in addition to baccalaureate program): Associate of Science (A.S.) for completion of two-year program in practical nursing.

UNIVERSITY REQUIREMENTS FOR BACHELOR'S DEGREES

The liberal education objectives of undergraduate learning include an understanding of the fundamentals of major fields of knowledge which should be the common possession of educated men and women, whatever their specialized interest. This objective is not likely to be attained from a random arrangement of courses. Consequently, a program of liberal or general education is required of all students seeking a baccalaureate from the University. The general education "core," as it is frequently called, amounts to about a third of a four-year curriculum. It tries to assure for each student reasonable competence in organizing his thoughts in written and spoken English—and in understanding the expressions of others—in mathematics, in the humanities, natural sciences and social sciences.

The "core" need not be completed during the first two years, though general education courses are frequently concentrated in the freshman and sophomore terms. General education requirements can be met either by completing appropriate courses—listed below—or by passing comprehensive examinations. (See "Credit by Examination.")

To qualify for any baccalaureate degree from the University of Hawaii a student must satisfactorily complete: (1) the general education requirements of the University outlined immediately below; (2) at least 60 additional credit hours of non-introductory courses (i.e., those numbered 200 and above); and (3) the requirements of his college (which may overlap these University requirements).

Curricular Requirements. A program of study to accomplish the purposes of undergraduate instruction is worked out with each student within the college in which he registers. Curriculum requirements vary considerably from college to college. However, all students intending to receive a baccalaureate from the University are required to take courses, or by examination demonstrate their competence, in the following fields. (The courses indicated are intended to provide liberal education, rather than specialized training; the number of courses from which a choice is made by the students to satisfy core requirements is increased from year to year.)

Communications: Each student must have competence in expository writing and oral communication appropriate for study at an institution of higher learning. The usual means of fulfilling this requirement is to pass English 101-102 (or 105, an accelerated course) and Speech 145. Students who have this competence when entering the University may demonstrate it—and receive credit for the equivalent courses—by passing an examination.

Quantitative Reasoning: Ability to apply, understand or appreciate the uses of mathematics, or its philosophical base, is demonstrated by passing any mathematics course at the university level or Philosophy 200, symbolic logic.

World Civilizations: Adequate comprehension of the broad sweep of cultural development is usually demonstrated by passing History 151-152 World Civilization (or its counterpart in the Honors Program, 161-162, or its upper-division equivalent, 251-252). However, with the concurrence of their academic advisers, students with an adequate understanding of Western civilizations may complete the requirement by passing courses in the history of Asia, such as History 341-342, or in Asian Studies, such as 301-302. Conversely, students with a satisfactory comprehension of Eastern civilizations may fulfill the requirement by taking one or more courses in European or American history, such as 181-182, 401-402, 405-406, or American Studies 485-486.

Humanities: The educational objective sought here is to develop standards of value and beauty, to sharpen critical judgment by the study of literature and the other creative arts, of philosophy and religion. To fulfill this requirement, students must pass at least 3 semester courses, distributed among 2 or more of the following 3 groups:

I: English 251-252, 253-254, 255-256; Drama 160.

II: Philosophy 100, 200; Religion 150, 151.

III: Art 101; Interdisciplinary Studies 131, 132; Music 160, 170, 265-266.

Natural Sciences: Sought here is a critical understanding of natural phenomena and of the methods of science used in their study. The requirement may be fulfilled by passing at least 3 semester courses, chosen from the following, and preferably including both the biological and physical sciences.

Chemistry 113 and 115, 114 and 116, 117 and 118; Geography 101; Geosciences 101-102.

Oceanography 201; Physics 100, 110–111, 160–161, 170, 272, 274.
Botany 101; Genetics 451–452; Microbiology 351; Zoology 101.
General Science 121–122; Biology 220.

Social Sciences: The purposes of this requirement are (1) to seek an understanding of the extent to which scientific method can be used in studying human behavior and institutions and (2) to assist students in assessing their own behavior in society. The requirement may be fulfilled by passing at least 3 semester courses, including at least one semester course from each of the following groups:

I: Anthropology 150, 200; Psychology 100, 110, 111–112, 320, 321, 322;
Sociology 151, 201, 360; Social Sciences 301–302.

II: Economics 120, 150, 151; Geography 102, 151; Political Science 110.

These general education requirements were adopted in 1966 and are required of undergraduate students entering the University, or becoming classified undergraduates, after June 1, 1966. Students who registered as classified undergraduates before that date may elect to complete their baccalaureate programs either under the newer requirements or those in effect before 1966.

Credit and Grade-Point Requirements. Minimum credit requirements for baccalaureate degrees are set by each college offering them. In addition, the student must have earned at least twice as many grade points as his total registered credits, i.e., have a C average.

Residence Requirements. Baccalaureate degrees are granted only those students who earn a minimum of 30 semester hours in residence (that is, in class or laboratory work) at the University of Hawaii.

Degree candidates must be registered and in attendance during the semester or summer session in which the degree is to be granted. A college dean may modify this requirement, in exceptional cases, by granting a leave of absence.

Time Within Which Work Must Be Completed. The normal expectation is that students will complete their academic work in a ten-year period. Credits earned more than ten years before graduation in courses which have materially changed content or standards will be denied.

Special Instructional Programs

Honors Programs

Selected Studies (lower division). The Selected Studies Program provides a group of academically promising freshmen and sophomores with an opportunity to use the University's facilities and resources more fully than usual. Each student has a faculty adviser to assist him to plan his curriculum and within certain limits to tailor it to his special interests and abilities. Special courses are available in history, in the physical and the social sciences, in the humanities, etc.; moreover, there are special sections reserved in basic freshman and sophomore courses in economics, English, languages, mathematics, music, philosophy, political science and many others.

Admission to the program is by invitation to freshmen and sophomores whose high school records and aptitude test scores, or whose recommendations from University faculty, indicate they have the qualities needed to profit from the opportunity.

Honors (upper division). Honors degrees may be granted only to participants in the University Honors Program. Successful completion of a program of honors work in the upperclass years entitles the student to a bachelor's degree with "honors," "high honors" or "highest honors." Application for admission to the program may be made by any regularly registered undergraduate at the end of his sophomore year or during his junior year.

During the junior year the nature of honors work is determined chiefly by the University department or curriculum in which the student is enrolled as a major. In the second half of his junior year and the first half of his senior year he participates in an interdisciplinary colloquium. In his senior year, with the guidance of a specialist in his field, he pursues a program of independent research that culminates in a senior thesis.

Full information about both programs may be obtained from the Coordinator of Undergraduate Honors Programs in Sinclair Library.

Academic Commendation. Seniors who have a grade-point ratio of 3.4 or above but who have not completed the Honors Program will receive their degree "with academic commendation." At least 60 semester hours of this undergraduate work must have been taken at the University of Hawaii within six years prior to graduation.

Honors Courses

See pp. 4-5 for a discussion of course descriptions.

IS 101-102 THE COLLEGE EXPERIENCE SEMINARS (2-2) Yr. Arkoff

Student-led seminars to explore purposes, processes and problems of higher education, and to give students perspective on their own college careers. Student participants enroll in IS 101, student leaders in IS 401.

IS 131 MAN AND THE ARTS (4) I

Introduction to non-verbal arts as they direct and embody man's awareness.

IS 132 MAN AND HIS CITY (4) II

The 20th-century American city as an expression of attitude and value. Examination of Honolulu as example of various theories of function of the city.

IS 151-152 SCIENCE AND IDEAS (4-4) I, II

Key

Man's present understanding of nature and foundations upon which that understanding is based.

IS 171-172 PROBLEMS OF HUMAN SOCIETY (4-4) I, II

Intensive investigation of selected processes and issues of contemporary society through perspectives and resources of the social sciences. Field work, tutorials, group discussion, lectures.

IS 207 SHIFTING SEX-ROLES IN CONTEMPORARY SOCIETY (3) I, II

Iams

Biological and cultural bases of sex-role differentiation; political, economic and professional implications; influence on self-concept. Conducted as colloquium.

IS 221-222 INTERNATIONAL AGRICULTURE (1-1) I, II

S. Goto

Colloquium on role of agriculture in community development, with special emphasis on Pacific and S.E. Asia. May be repeated.

IS 291 COMMUNITY SERVICE PRACTICUM (3) I, II

Supervised field work in selected community agencies; seminar in corresponding social problems. Pre.: consent of instructor after interview.

IS 293 PRACTICUM IN GOVERNMENTAL PROCESSES (3) II

Supervised participation in a selected activity or project within campus or community government; seminar in related problems.

IS 317-318 JUNIOR HONORS SEMINAR (1-1) Yr.

Survey of research areas, specialized reading and preliminary experimentation; definition of a specific research problem. Available only in selected fields.

IS 401 THE COLLEGE EXPERIENCE SEMINARS (2) I, II

Arkoff

Faculty-led seminars for student leaders of IS 101 groups. May be repeated. Pre.: consent of instructor.

[Major Subject] 493-494 (394-395) SENIOR HONORS THESIS (2-2) Yr.

Preparation of research paper under individual faculty supervision. Required for graduation with honors.

IS 497-498 (397-398) HONORS COLLOQUIUM (3-3) Yr.

Seifert

Weekly meetings for discussion of enduring issues and problems which are of interdisciplinary nature. Required of, and limited to, candidates for bachelor's degree with honors.

NOTE: Only Honors Seminar, Thesis and Colloquium are limited to students in Honors Programs. For other courses, interested students should apply to instructor or Honors office.

English Language Institute

For ELI course descriptions see "College of Arts and Sciences."

The University of Hawaii has established the English Language Institute (ELI) as its agency for assuring that the English proficiency of its foreign students is adequate for University coursework. ELI responsibilities include testing and evaluating the English of all new foreign students, and providing suitable instruction for those students whose English fails to meet standards determined by the University to be sufficient for the pursuit of full-time studies.

Testing and Evaluation. Upon arrival at the University, all foreign students are referred to ELI for evaluation of their English proficiency. Registration for University coursework is not permitted until this evaluation has been made.

Exemption from ELI. Following ELI's evaluation of their English proficiency, the following foreign students are exempted from ELI training: (a) those whose native language is English; (b) those who hold a degree from an American college or university; (c) those whose English meets the University's standards for full-time study.

Assignment to ELI Courses. All foreign students not exempted on the basis of their entrance proficiency testing are assigned to an appropriate program of ELI instruction. Because of their special purpose, ELI courses take precedence over all other coursework. They may not be postponed to a subsequent semester, nor may they be dropped or taken with auditor status. Students who fail to comply with ELI assignments may be denied further registration at the University.

Relationship of ELI Assignments to Other Coursework. Students assigned to ELI training take a reduced academic load, in order to devote sufficient attention to gaining satisfactory English competence. Students required to take relatively large amounts of ELI work during their first and second semesters must expect to make proportionately slower progress in their regular University studies. This is an especially important factor in some graduate programs, and should be carefully considered by all foreign students whose time or financial support is limited.

Eligibility for Registration in ELI. Registration for ELI courses is limited to students who have been officially admitted to the University. Students who apply to the University for the sole purpose of entering ELI in order to improve their English will not be accepted.

Interdisciplinary Studies (IS)

In addition to the many interdisciplinary courses listed among the offerings of the departments of the several colleges in the following pages, a few courses do not fit within any department. Among the latter are:

600 THEORY OF ADMINISTRATION (3) I, II

Buchele

This course is offered for students in Business Administration, Political Science, Social Welfare, Educational Administration, Public Health Administration and possibly other programs. Students should consult advisers in their own departments for information on how this course may fit into their curricula. While the course is taught primarily by the professor listed, faculty members from each of these departments participate.

Critical review of key current and classic writings in the theory and practice of administration; development of a comprehensive, integrated understanding of the nature of administration.

300 FIELD STUDY (arr.) I, II

Pre-arranged systematic investigation in the field of selected topics. Primarily for East-West grantees. Pre.: permission of appropriate department chairman and dean.

IS 101-102 THE COLLEGE EXPERIENCE SEMINARS (2-2) Yr.

IS 131 MAN AND THE ARTS (4) I

IS 132 MAN AND HIS CITY (4) II

IS 151-152 SCIENCE AND IDEAS (4-4) I, II

IS 171-172 PROBLEMS OF HUMAN SOCIETY (4-4) I, II

IS 207 SHIFTING SEX-ROLES IN CONTEMPORARY AMERICA (3) I, II

IS 221-222 INTERNATIONAL AGRICULTURE (1-1) I, II

IS 291 COMMUNITY SERVICE PRACTICUM (3) I, II

IS 293 PRACTICUM IN GOVERNMENTAL PROCESSES (3) II

IS 317-318 JUNIOR HONORS SEMINAR (1-1) Yr.

IS 401 THE COLLEGE EXPERIENCE SEMINARS (2) I, II

IS 497-498 HONORS COLLOQUIUM (3-3) Yr.

(For a brief description of the courses listed by title only, see under Honors Program. However, only the Honors Seminar and Colloquium are necessarily limited to students in Honors Programs.)

Reserve Officers Training Corps

For course descriptions see "College of Arts and Sciences" where "Aerospace Studies" and "Military Science" are listed in alphabetical order.

Army and Air Force ROTC units at the University offer programs leading to regular or reserve commissions in the U.S. Army and Air Force upon completion of the baccalaureate degree requirements.

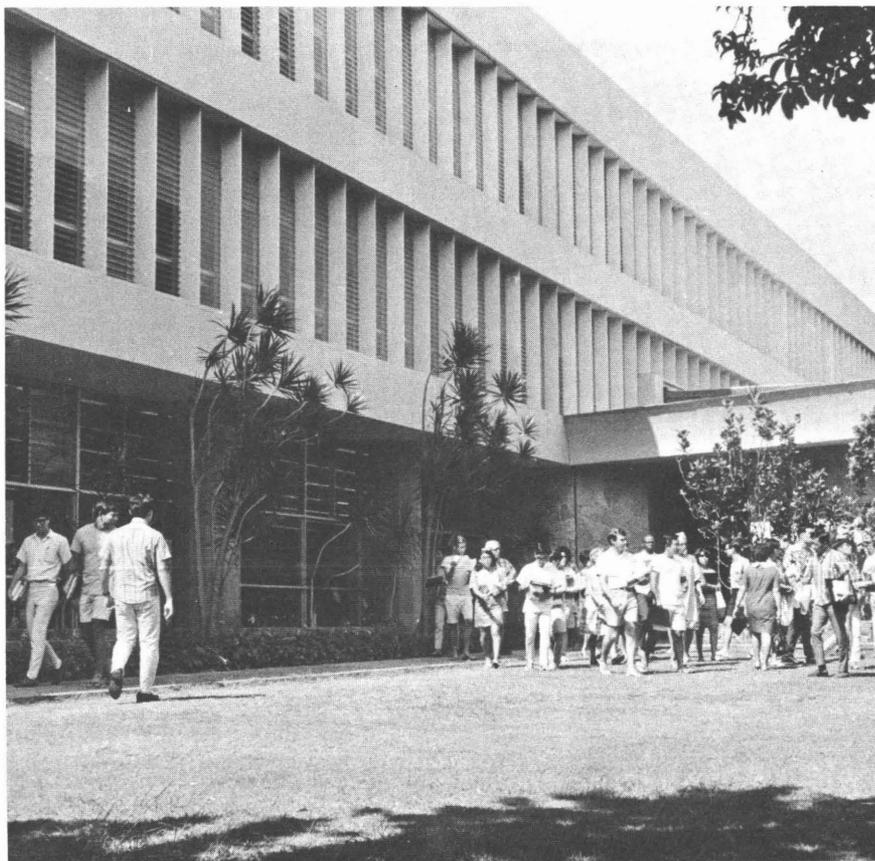
Military Science

The *four-year* Military Science program consists of on-campus training during the four semesters of the freshman (MS I) and the sophomore (MS II) years and is referred to as the basic course. Students who have participated in Junior Division ROTC or who have had active military service of more than four months may be exempt from a portion or all of the basic course. The advanced course consists of on-campus training throughout the junior (MS III) and senior (MS IV) years, plus a six-week summer camp between the junior and senior years at a mainland military installation. Subsistence pay of \$50.00 per month is paid to students in the advanced course during the school year, and pay for the summer camp is at the rate of \$160.50 per month. Training in the advanced course is selective, and successful completion of the training leads to a regular or reserve commission as a second lieutenant in the U.S. Army. To be eligible for the advanced training under the four-year program a student must: (1) Be a citizen of the United States. (2) Be selected for the advanced course under procedures prescribed by the professor of military science. (3) Successfully complete the first two years (basic course) of a Senior Reserve Officers Training Corps course or the equivalent, as explained above.

The *two-year program* is essentially the same as above except that credit for the two-year basic course is gained by attendance and successful completion of a six-week summer camp at a mainland military installation prior to entry into the advanced course. Students interested in this program must have four semesters of college work remaining after completion of the summer camp and must apply for selection early in the spring semester of the year in which they plan to attend the basic summer camp. Pay for the summer camp is at the rate of \$95.70 per month.

The Army Flight Training program is offered to qualified students in their senior year of the ROTC program.

Financial assistance scholarships are available on both a four-year and a two-year basis. The scholarships provide payment for tuition fees, cost of books, laboratory expenses and \$50.00 per month subsistence pay for the period of the scholarship. Applicants for the four-year scholarship normally apply during their senior year in high school. Applicants for the two-year scholarships apply during the second semester of their sophomore year at the University. Completion of the basic course is a prerequisite for the receipt of the two-year scholarship. For further information, inquire at the Department of Military Science.



Aerospace Studies

The Air Force ROTC prepares selected college students for duty as professional Air Force officers. Upon successful completion of the program and receipt of a degree, the student must accept a commission and serve on active duty for at least four years. If he completes pilot or navigator training, he must serve five years.

Under the two-year program the student receives general military training during a six-week course at an Air Force base prior to his junior year. He must apply for this program by January 1 of his sophomore year.

All cadets accepted for the professional officers course receive \$50.00 per month retainer pay. In addition they are paid while attending either the field training course or the summer training unit. A limited number of financial assistance scholarships are available for those in the four-year program, covering tuition, fees, books, plus \$50.00 per month for the full four years. Competitive examinations will be used to select these students.

Residential Learning Project

Freshmen students may apply for participation in a co-educational program of instruction conducted in Johnson Residence Hall. The program includes some of the courses offered in the University's general education core, plus academic advising and co-curricular activities. Approximately 200 students plus six faculty members, who have offices in the project, form the community. Persons interested in learning more about the project should inquire at the College of Arts and Sciences, Office of the Associate Dean for Student Services.

Russian Area Studies Certificate

A certificate in Russian Studies, signifying the completion of certain requirements in addition to a regular major, is offered by the Committee on Russian Studies of the University.

The certificate is awarded upon graduation to a student who completes advanced reading and conversation courses in the Russian language equivalent to at least third-level work and 9 credits of non-introductory course work, exclusive of courses taken as part of the major, chosen from the offerings listed below.

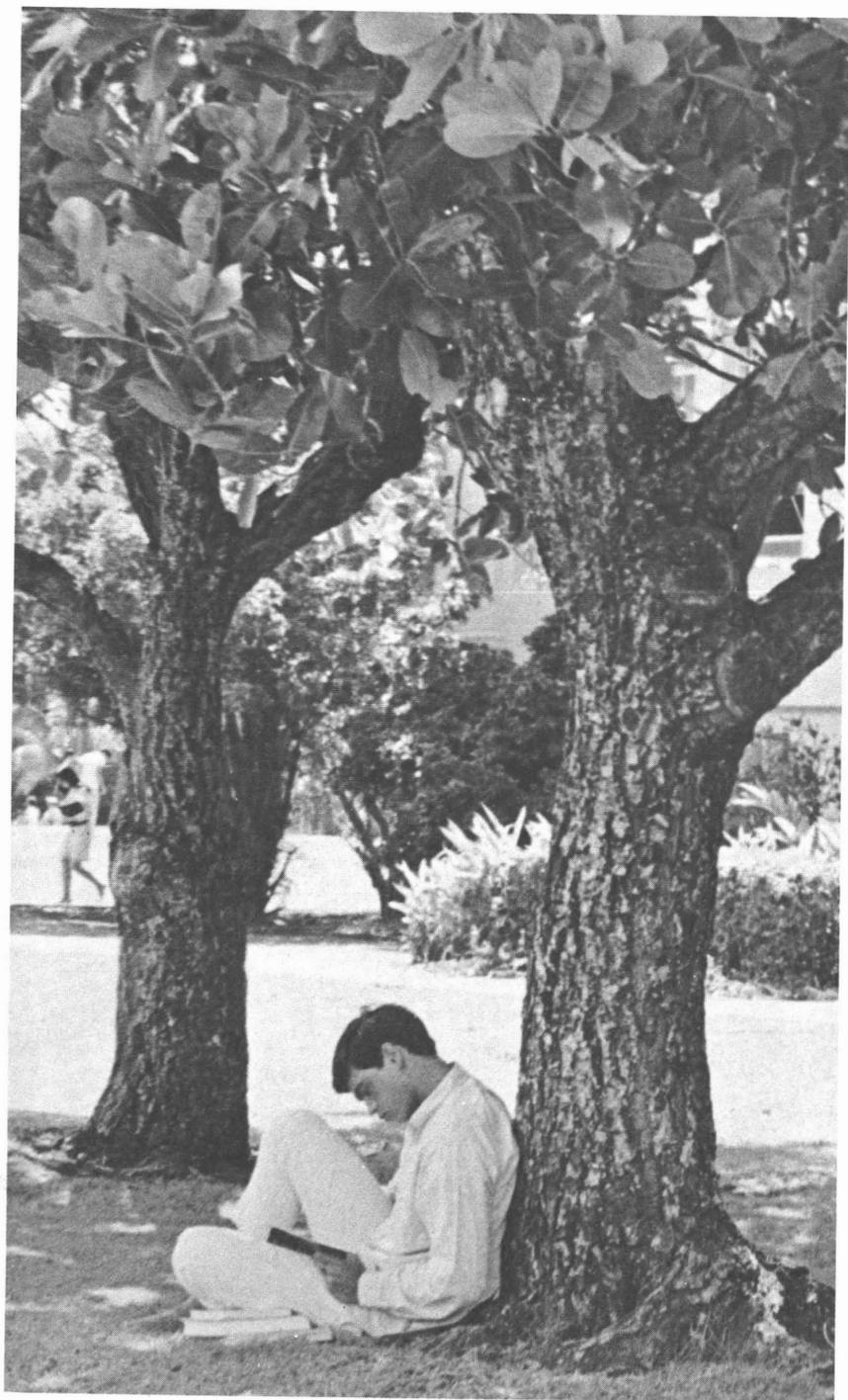
- Geography 345 Geography of the Soviet Union (3) II
 - History 451-452 Modern Russian and Soviet Foreign Policy (3-3) Yr.
 - History 449-450 History of Russia (3-3) Yr.
 - Political Science 345 Topics in Comparative Government and Politics (Government and Politics of the Soviet Union) (3)
 - Philosophy 400 Political Philosophy (3) II
 - Russian Literature 400 Contemporary Literature in Translation (3) II
 - Russian Literature 431-432 Contemporary Soviet Russia Through the Eyes of Soviet Literature (3-3) Yr.
 - Economics 405 Comparative Economic Systems (3) I
- A total of 63 credits: 14 in introductory language, the rest non-introductory.

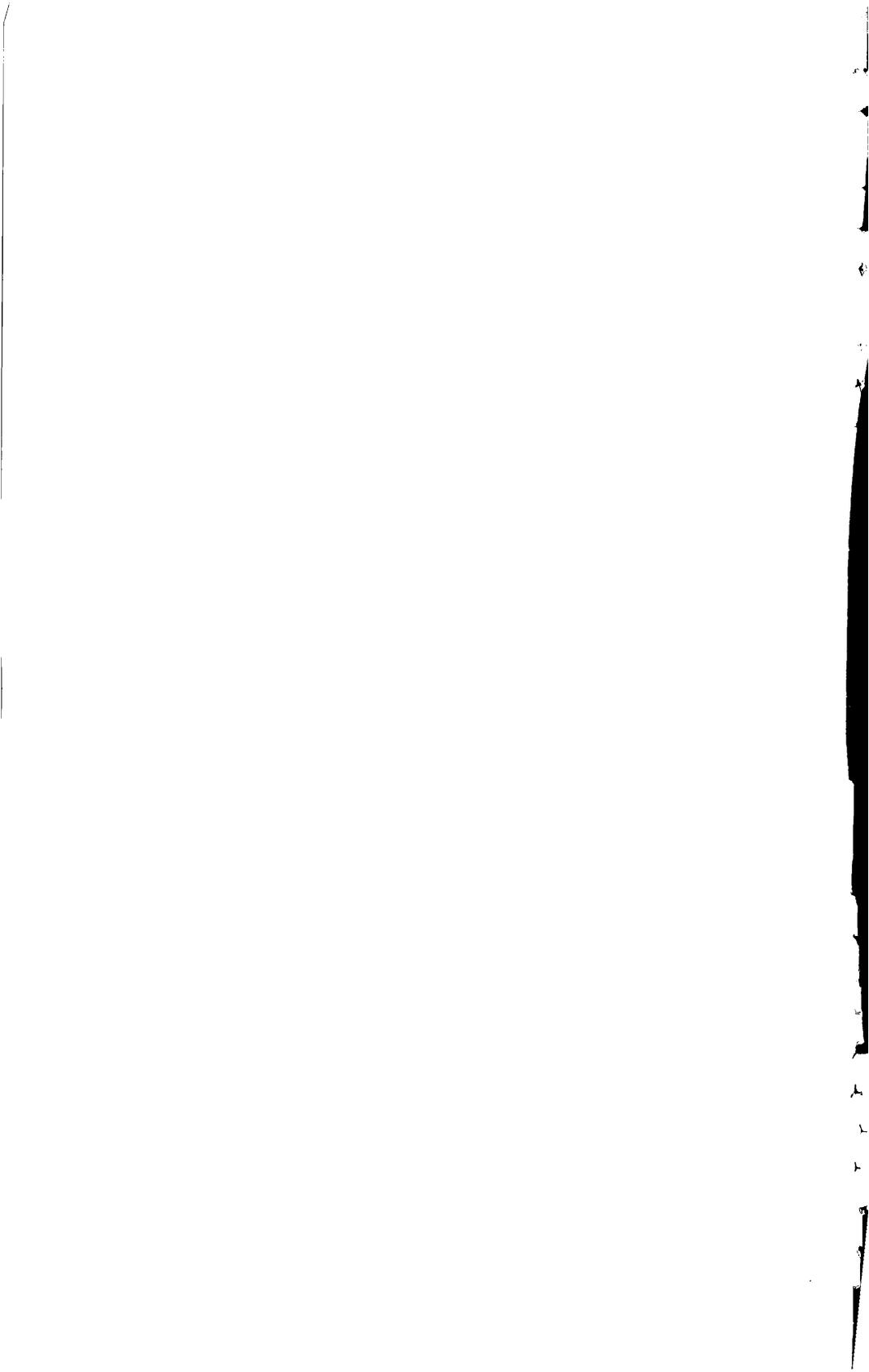
Tutoring

A tutoring service, called KOKUA, is maintained by the University to assist undergraduate students who need special, but temporary, assistance in a particular subject. Normally, students are referred to KOKUA by an academic adviser or by an instructor. Self-referrals are also accepted.

Services to Handicapped Students

Students who will need special assistance because of physical handicaps should apply, as early as possible, to the KOKUA office. KOKUA provides student aides, help with registration, readers for the blind and other help to students who need special assistance in order to attend classes.





College of Arts and Sciences

THE PROGRAMS OF THE COLLEGE OF ARTS AND SCIENCES are designed in the conviction that liberally educated persons must have a comprehensive knowledge of the major fields of learning—a general education—and an intensive knowledge of a particular field of the humanities, the social sciences, or the natural sciences.

In general education the College seeks to develop in students:

- an appreciation of our diverse cultural heritage and its relation to everyday life,
- criteria for the assessment of values in different kinds of society and the world community,
- aesthetic standards and a sense of the self-transcending power of beauty,
- a knowledge of themselves and their environment from a humanistic and scientific point of view,
- the ability to make sound judgments on disputed matters,
- an understanding of the interdependence of general and specialized education,
- a desire for continuing intellectual growth.

After a year or two of general education, a student undertakes a program of study offered by the College in a major field of concentration in the humanities, the social sciences, or the natural sciences; or he transfers to a program of another college of the University—e.g., Health Sciences, Education, or Business.

Because of its geographical position midway between continental America and Asia, the College is unusually conscious of the importance of the Far East; unique opportunities are provided for the study of the history, languages, literature, art, institutions and philosophies of the countries and peoples of this area.

Admission and Degree Requirements

Admission requirements for the College are the same as those for the University (pp. 36–40). However, candidates for admission are strongly advised, although not required, to offer a minimum of two years of college preparatory mathematics and three years of a foreign language.

To be entitled to a bachelor's degree offered by the College, a student must:

1. Complete certain basic subjects specified by his degree program.
2. Fulfill the prescribed requirements of a major field of concentration.
3. Offer at least 60 semester hours of credit in other than introductory courses.
4. Acquire an aggregate of 124 semester hours of credit, of which no more than 20 hours is acceptable in subjects not offered within the College.
5. Earn at least a 2.0 grade-point ratio (*C* average) for all registered credits, and in the major field.
6. Submit an application for graduation to the Office of Admissions and Records during the semester preceding the award of the degree.

No course will satisfy more than one kind of requirement (basic or area).

Exemption by examination is possible in expository writing, speech, and foreign language by applying to the appropriate departments. The speech requirement is waived for students who have a one year course in high school in extemporaneous public speaking or debate with a grade of *B* or better. Credit by examination can be obtained in any course offered in the College which is required in a student's curriculum; it carries a corresponding reduction in the 124 hours required for graduation.

The dean of the College may exercise his discretion in modifying some of these requirements in exceptional cases after consultation with the graduation committee.

Curricula

Each program leading to the bachelor's degree is built around a major field of concentration—the major—which consists of a specific number of credits (not to exceed 40 in any one subject) and required courses in a particular field or discipline, together with related courses (usually upper division) in other subjects which are associated with and contribute to that discipline.

The major must be indicated by the beginning of the third year. For certain preprofessional programs, such as prearchitecture, predentistry, premedicine, and prepharmacy; and for the bachelor of fine arts, bachelor of music, and bachelor of science degree programs, it should be indicated at the beginning of the first year.

Students seeking baccalaureate degrees in medical technology, professional nursing, or education must complete the entrance requirements of the program they wish to enter and transfer, ordinarily as juniors, to the College of Health Sciences and Social Welfare, or the College of Education. To be eligible for admission to any of these programs, a student must have completed a minimum of 60 credit hours of study, including the general education requirements of the University (pp. 49-51) and certain specified courses.

Academic Advising

Assistance in planning academic goals and curricula, and help and advice on a wide range of general or personal problems are available at the Student Services office of the College. Advisers are faculty members specially trained and oriented to assist students in selecting and achieving their academic goals.

The service mentioned above applies to freshmen and sophomores. When the student has completed 55 credits (junior standing), he is required to select a major field, at which time his records are transferred to his major department and he is assigned an adviser from that department's faculty. In addition to their departmental adviser, juniors and seniors may still call on the Student Services office for any special assistance.

Bachelor of Arts Degree Programs

Basic Requirements

English 101-102 or 105; History 151-152 or 251-252; Speech-Communication 145; Health and Physical Education, one activity course; foreign language, intermediate year; Philosophy 210 or Mathematics 100 or higher; any two of the following: English 251, 252, 253, 254, 255, 256.

English 101 and 102, and Speech-Communication 145 are required courses for the freshman year. Except in very unusual circumstances, students are not permitted to drop any of these three courses.

Area Requirements

- I. HUMANITIES: 12 semester hours from the following courses in at least two subjects other than the major, including at least 3 hours from each of the first two sub-groups.
 1. Philosophy 100, 200; Religion 150, 151.
 2. Art 101, 105, 106, 107, and 471; Drama 160, 240, 260; Music 160, 165, 166, 170.
 3. American Studies 485, 486; Asian Studies 301, 302; English courses numbered from 312 to 499 (not including 397-398 and 497-498); courses in foreign languages numbered 300 and above; History 181, 182, 341, 342; IS 131, 132; Journalism 150; Linguistics 102; Speech-Communication 211, 231, 304, 305, 406.
- II. SOCIAL SCIENCES: 12 semester hours, including at least one course from each sub-group, and two subjects other than the major.
 1. Anthropology 150, 200; Psychology 100, 110, 214, 320, 322; Sociology 151 or 201, 360; Social Sciences 300-301.
 2. Economics 120, 150, 151; Geography 102, 151; Political Science 110.

III. NATURAL SCIENCES: 11 semester hours including at least three courses from the first sub-group. Majors in the natural sciences must obtain credit in subjects other than mathematics.

1. Biology 220, Botany 101, Chemistry 113-114 and 115-116; General Science 121-122; Genetics 451; Geography 101; Geosciences 101-102; Microbiology 130; Oceanography 201; Physics 100 (101 may be taken concurrently for one additional credit), 160-161, or 170 through 273; Zoology 101, or 201-202.
2. Botany 105, 201; General Science 430; Geography 300, 310; Geosciences 200; Mathematics 134, 205-206; Physics 100-101, 110-111; Zoology 161-362, inclusive.

Majors (B.A. Degree)

The following list indicates the major fields of concentration available to students and the requirements of each, viz., the number of semester hours and required courses in the subject, as well as required related courses.

ANTHROPOLOGY. *Major requirement:* 21 semester hours. *Required courses:* 150, 200, 210, 220, 230, and any two courses numbered above 230.

ART. *Major requirement:* 39 semester hours. *Required courses:* Art 101, 12 hours of introductory studio, 12 hours of art history, and 12 hours of emphasis in drawing and printmaking, painting, weaving and textiles, ceramics, sculpture, visual design or art history. Approved by College of Education for art education majors.

ASIAN STUDIES. *Major requirement:* 36 semester hours. *Required courses:* 301-302 or equivalent "civilizations" course; 6 hours of a third-year Asian language or equivalent; 15 hours from one of the following fields: anthropology, art, Asian literature, economics, geography, history, philosophy, political science, sociology; 9 hours of Asian courses outside this field of concentration from two or more departments in the humanities or social sciences.

BIOLOGY. *Major requirements:* 30 semester hours including Biol 220 and Biol 250; Genetics 451 or Micro 475; Bot 470 or Zool 345 or Micro 431; Bot 353 or Zool 401 or Bot 454 or Micro 480. Chemistry 243-246; Physics 160-1 or Physics 170-175; and Math 205-206 are also required. Additional non-introductory courses are to be selected from biochemistry, botany, genetics, microbiology or zoology. Students tentatively planning to major in Biology should consult with the Director, Curriculum in Biology, immediately on entering the University of Hawaii.

BOTANY. *Major requirement:* 24 semester hours. *Required courses:* 101, 201; at least 15 semester hours in courses numbered above 300. Credit toward the major will be granted for Genetics 451.

CHEMISTRY. *Major requirement:* 24 semester hours, in addition to 114–116 or 117–118; including 133–134, 243–245, 244–246, 432, 451–452. A reading knowledge of scientific German, French, or Russian is required.

CHINESE. *Major requirement:* 30 semester hours above the intermediate level.

CLASSICS. *Major requirement:* 24 semester hours in upper-division Latin and Greek courses.

DRAMA AND THEATRE. *Major requirement:* 24 semester hours. *Required courses:* 160, 240, 260, and 15 semester hours of approved 300 and 400 courses. *Related courses required:* 6 hours in dramatic literature.

ECONOMICS. *Major requirement:* 24 semester hours of upper division courses. *Required courses:* 121, 150–151, 300, 301, 340.

ENGLISH. *Major requirement:* 27 semester hours of upper division courses. *Required courses:* 9 hours in “periods” of English literature, 6 hours in single authors, 3 hours in American literature, 6 hours in the English language, writing, and criticism, and 3 hours in a genre. The language requirement should be met by an ancient or modern European language.

FRENCH. *Major requirement:* 30 semester hours, exclusive of 101–102, 201–202. 301, 331–332, and 361 prerequisite to courses numbered 400 and above.

GEOGRAPHY. *Major requirement:* 25 semester hours. *Required courses:* 101, 102, 151, 300, 340, 370, 375. *Related courses required:* 9 non-introductory credits in a related field approved by the department. All majors are advised to take a course in statistics (Geography 380, or the equivalent). In choosing courses under the area requirements of the College, students are advised to select Anthropology 151 and Economics 120 under the Social Sciences options, Mathematics 134 or a higher numbered course under the Mathematics options, and basic courses in physics, chemistry, biology or geosciences under the Natural Sciences options.

GEOLOGY. *Major requirement:* Consult geosciences department.

GERMAN. *Major requirement:* 24 semester hours of courses numbered 300 and above. 203 may count toward major.

GREEK. *Major requirement:* 24 semester hours exclusive of 201–202. *Required courses:* Latin 101–102.

HISTORY. *Major requirement:* 28 semester hours of upper-division courses. *Required courses:* 397 and 12 hours from one of the three fields (United States, Pacific and Asia, Europe). Honors program students take 394–395 instead of 397.

JAPANESE. *Major requirement:* 30 semester hours above the intermediate language level.

JOURNALISM. *Major requirement:* 44 semester hours. *Required courses:* 205, 206, 239, 315, 316, 385; in addition to the college area requirements, 6 credit hours in a third humanities department, 6 in a third social science, and 15 credits in a department of choice.

LATIN. *Major requirement:* 24 semester hours exclusive of 201-202. *Required courses:* Greek 101-102; Latin 301-302.

MATHEMATICS. *Major requirement:* 33 semester hours. *Required courses:* 15 semester hours in courses numbered above 300.

MICROBIOLOGY. *Major requirement:* 24 semester hours. *Required courses:* 351 and three of the following: 431, 461, 463, 475, 480, 490. Additional work to consist of an integrated group of courses selected from appropriate offerings in biochemistry, botany, chemistry, genetics, microbiology, and zoology. As related courses, Chemistry 133-4 or 451; Mathematics 206; and Physics 160-161 or 170-173.

MUSIC. *Major requirement:* 38 semester hours. *Required courses:* 265-266, 181-182, 183-184, 281-282, 283-284, and 6 hours in applied music, including 235-236. For emphasis upon theory, 12 hours selected in upper division theory courses, as advised, and 464 or 470. For emphasis upon music literature, 461, 462, 463, 464, 470, 483 or 484 and 481 or 485.

PHILOSOPHY. 21 semester hours in addition to Phil 200, 201, and 210. Of these 21 hours, Phil 315 is mandatory; 3 of the following courses are mandatory: Phil 300, 302, 304, 306, 308, 310; 3 courses above the number 400 are electives. Undergraduates planning work in Asian and Comparative Philosophy should take introductory courses in Indian, Buddhist and Chinese Philosophy.

PHYSICS. *Major requirement:* 32 semester hours including 170-171*, 272-273*, 274-275, 305, 310, 350, 430 or 450, 460, 480-481. These require the following in mathematics: 205-206, 231, 232, 402 or 403. Chemistry 113 through 116 or 117-118 are required.

POLITICAL SCIENCE. *Major requirement:* 27 semester hours. *Required courses:* 110 and 300-301. As part of his major, each student is required to complete introductory one-year core sequences in three subfields, numbered 300 and above, including Political Science 300-301, Political Thought Core. The balance of the political science courses may be taken either within the same subfields or in others. "Topics" courses will be offered only upon demonstration of need. As their contents will vary from year to year, they may be taken more than once for credit.

* May be replaced by Physics 160-161, by recommendation of instructor and with departmental approval, by those students who are transferring to a physics major program.

PSYCHOLOGY. *Major requirements:* 24 semester hours. *Required courses:* 111, 112, 113, and any two of the following three: 214, 215, and 216. The remaining courses must be selected from the 300-level or above.

RELIGION. *Major requirement:* 24 semester hours. *Required courses:* 200, 201, 482-483, 486.

RUSSIAN. *Major requirement:* 24 semester hours exclusive of 101-102, 201-202 and 203-204.

SOCIOLOGY. *Major requirement:* 24 semester hours. *Required courses:* 151 or 201, and one course from each of the following subdivisions: (1) 300-319 or 400-419; (2) 320-339 or 420-439; (3) 340-359 or 440-459; (4) 360-379 or 460-479; (5) 480-499.

SPANISH. *Major requirement:* 30 semester hours above the intermediate language level. *Required courses:* 303-304, 330, 351-352, 365-366, 403, 431. Linguistics 102 is a strongly recommended elective. Majors must also pass the MLA Proficiency Tests for Teachers and Advanced Students (on Listening, Speaking, Reading, Writing) not earlier than the first semester of the senior year.

SPEECH-COMMUNICATION. *Major requirement:* 30 semester hours. *Required courses:* 101, 202, 203, 304, 305, 406; additional requirements: Psychology 322, 430.

ZOOLOGY. *Major requirement:* 24 semester hours. *Required courses:* 202, 490. As related courses, Biology 220; Biology 250 or Zoology 430; Botany 101 or Microbiology 151; Chemistry 113-116 or 117-118, and 243-246; and Mathematics 134 are required. Credit toward the major will be granted for Genetics 451-452 and courses in entomology. Students planning to continue their professional education beyond the B. A. degree should have, in addition, one year of physics and mathematics through calculus.

Bachelor of Fine Arts Degree Program

This program is designed to provide basic preparation in ceramics, drawing, environmental design, painting, printmaking, sculpture, textile, visual design and weaving. Basic and area requirements are those of the bachelor of arts degree programs with the exception that foreign language is not required. Major requirements include 64 credits in the field of art or architecture of which 18 must be in art history. All students entering a B.F.A. program must take the 12 credit hours of introductory studio courses and Art 101 and are strongly advised to register for Art 101 and one of the introductory studio courses in their first semester.

Bachelor of Music Degree Program

Basic Requirements

English 101-102 or 105; Speech-Communication 145; History 151-152, 251-252 or 161-162; Mathematics 100 or Philosophy 210; 2 credits selected from health and physical education activity courses or Drama 381 or 382. Students concentrating in voice must give evidence of having achieved the equivalent of French 102 and German 102.

Distribution Requirements

- A. Three courses, including at least one from group 1 and one from group 2 or 3.
 - 1. English 251-252, 253-254, or 255-256; Drama 160.
 - 2. Philosophy 100 or 150; Religion 150 or 151.
 - 3. Art 101; Music 160, 170, 265-266; IS 131, 132.
- B. Three courses, including at least one from each group.
 - 1. Psychology 100, 110, 214, or 322; Sociology 151, 201, or 324; Anthropology 150 or 200; Social Sciences 300-301.
 - 2. Economics 120, 150 or 151; Political Science 110; Geography 102 or 151.
- C. Three courses, including at least one from each group. General Science 121-122, Introduction to Science, is the equivalent of one course from each of the groups.
 - 1. Chemistry 113-114, 117-118; Geosciences 101-102; Physics 110, 160-161, 170 through 173; Geography 101; Oceanography 201.
 - 2. Botany 101; Genetics 451; Microbiology 130, 140; Zoology 101.

Music Requirements

COURSES	Semester hours				COURSES	Semester hours			
	C*	OBI*	PO*	V*		C*	OBI*	PO*	V*
181-182, 281-282	8	8	8	8	135-136	2	4	4	4
183-184, 283-284	4	4	4	4	235-236	2	4	4	4
481-482	4	2	..	..	335-336	2	6	6	6
483-484	4	..	2	..	435-436	..	6	6	6
485-486	4	4	4	..	115-116, 215-216	4	4	..	4
487-488, 489-490	8	..	..	..	123-124, 131, 231	2	..	2	2
461, 462, 463, 464	4	4	4	4	401, 402, 405, 409	7	10	6	8
265-266	6	6	6	6	325-326	3	3	1	3
481, 483, 484, }	..	..	..	2	459, 469	..	..	4	..
485, 487, 488 }	..	..	..	2	Electives	4	4	4	4
Total					68 69 65 65				

* Possible concentrations: C—composition, OBI—orchestral or band instruments, PO—piano or organ, V—voice.

Non-music electives: For a concentration in composition, 8 semester hours; for a concentration in band or orchestral instruments, 7 semester hours; for a concentration in piano or organ, 11 semester hours; for a concentration in voice, 11 semester hours. If students concentrating in voice must take formal courses to meet the language requirement, these courses must be taken within the 11 elective credits.

Bachelor of Science Degree Programs

Basic Requirements

English 101–102 or 105; Speech-Communication 145; History 151–152 or 251–252; Chemistry 114–116 or 117–118; Mathematics 205–206; Physics 170 through 273, or 160–161.

Distribution Requirements

- A. One course from each of the following groups:
1. English 251–252, 253–254, or 255–256; Drama 160.
 2. Philosophy 100 or 200; Religion 150 or 151.
 3. Art 101 or Music 160 or 170.
- B. Three courses, including at least one from each of the following groups:
1. Psychology 100, 110, 214, 320, 322; Sociology 151, 201 or 360; Anthropology 150 or 200; Social Sciences 301, 302.
 2. Economics 120, 150 or 151; Political Science 110; Geography 102 or 151.

Majors (B.S. Degree)

BIOLOGY. *Major requirement:* 37 semester hours including Biol 220; Biol 250; Genetics 451 or Micro 475; Bot 470 or Zool 345 or Micro 480; Biochem 441–2 or Biochem 561–2 or Ag Biochem 402; Zool 431–2 or Math 201 or Math 231–2. Chemistry 243–246 and Physics 160–1 or Physics 170–275 and Math 205–206 are also required. Additional advanced courses may be selected from biochemistry, botany, genetics, microbiology or zoology. Appropriate additional advanced courses in chemistry, physics or mathematics are recommended. An intermediate year of German, French, Russian or Japanese is also required. Students tentatively planning to major in Biology should consult with the curriculum director, immediately on entering the University of Hawaii.

CHEMISTRY. *Major requirement:* 37 semester hours, in addition to 114–116 or 117–118; including 133–134, 243–245, 244–246, 432, 451–452, 522, 544 and a minimum of 6 semester hours from the following: 394, 395, 399, 445, 524, 621, 631, 641, 642, 651, 652 and Biochemistry 561–562.

As related courses German 212 or Russian 208, Math 231 and Physics 170–171, 272–273 are required.

Recommended electives are Math 232, 311, 402, 431, 432, Physics 174.

GEOSCIENCES. A student must concentrate in one of the following fields: general, geochemistry, geology, geophysics, hydrology, meteorology, or oceanography. The field of concentration should be stipulated at the beginning of the third year and a suitable program of courses selected with department approval.

Major requirement: 38 semester hours, including 101-102 or the equivalent, from among appropriate offerings in geosciences, chemistry, civil engineering, geography, mathematics, oceanography, physics, and soil science. As related courses, Physics 170-171 and 272-275 are required.

PHYSICS. *Major requirement:* 35 semester hours, including 170-171*, 272-273*, 274-275, 305, 310-311, 350, 430 or 450, 460, 480-481. These require the following in mathematics: 205-206, 231, 232, 402 or 403. An intermediate year of one, or an introductory year of two of the following languages are required: French, German, Russian.

Recommended First Year Program For All B.S. Candidates

For entering students who have had high school courses in mathematics through pre-calculus, the following first year course schedule is recommended:

FIRST SEMESTER		SECOND SEMESTER	
	UNITS		UNITS
English 101	3	English 102	3
Mathematics 205	4	Mathematics 206	4
Chemistry 117-118	5	Physics 170-171	5
Speech 145 (or option)	3	Option (or Speech 145)	3

If the student does not have a high school course equivalent to Math 134 (Pre-Calculus), he may take this course at the University during a prior summer session. Otherwise Math 134 must be taken in an alternative first year schedule. He should obtain the recommendations for such a program from the appropriate departmental adviser before registering.

Preprofessional Programs

By careful planning, students in the College can prepare themselves adequately for admission to professional and graduate schools. This is especially true in view of the increasing emphasis placed upon a liberal arts background by most of the professions.

In planning a program, the recommendations of the appropriate national professional organizations should be followed. In addition, when the student

* May be replaced by Physics 160-161, by recommendation of instructor and with departmental approval, by those students who are transferring to a physics major program.

has selected the professional school he desires to enter, he should elect courses to fulfill the specific requirements of that school.

The College maintains a Pre-Medical Sciences Committee prepared to give specific aid to students preparing for schools of dentistry, medicine, veterinary medicine, pharmacy, or public health.

Information regarding the scholastic requirements of the other professions, such as law, is available at the office of the dean of the College and at the Counseling and Testing Center.

Premedical Curriculum

The following is based upon the general admission requirements of medical schools. The majority of schools, however, require the entering student to have a bachelor's degree, as well.

Biology: Biology 220, Zoology 202 (general), 320 (vertebrate), and 420 (embryology).

Chemistry: Chemistry 113, 115, 114, 116 (general), 243, 245, 244, and 246 (organic), 133 and 134 (quantitative).

Physics: Physics 160 and 161 (general).

Mathematics: Mathematics 205 and 206 (calculus).

Desirable electives: Physical chemistry, statistics and genetics.

It is recommended that premedical students obtain the book entitled *Admission Requirements of American Medical Colleges* (\$4.00; address: AAMC, Dept. 3B, 2530 Ridge Ave., Evanston, Illinois 60201) for detailed information on individual medical schools and their admission policies.

Requirements of dental schools are similar to those of medical schools, with the exception that more do not require a bachelor's degree. For details see *Admissions Requirements of American Dental Schools* (\$2.00; address: AADS, 211 East Chicago Avenue, Chicago, Illinois 60611).

Schools of pharmacy usually require for admission one year of college study. This must include courses in English, chemistry, zoology, botany, trigonometry, and algebra.

Catalogues of individual schools of medicine, dentistry, veterinary medicine, and pharmacy with more specific admission requirements and information may be found in Sinclair Library. Interviews with the premedical adviser throughout the program are recommended.

ARTS AND SCIENCES COURSES

See pp. 4-5 for a discussion of course descriptions.

Aerospace Studies (AS)

Professor HARTEL; Assistant Professors VEYLUPEK, KOZUMA;
Instructors BELANGIA, KIVETT

Leadership Laboratory required 1 hour per week for each course listed.

- 100 FIELD TRAINING UNIT, SUMMER, TWO-YEAR PROGRAM (2) I** Staff
Intensive 6-week military training course at an Air Force base. Includes classroom work covering material presented in basic Aerospace Studies courses.
- 230 FIELD TRAINING UNIT, SUMMER, FOUR-YEAR PROGRAM (2) I** Staff
Intensive 4-week course at an Air Force base. Applications of academic work. Air operations problems; military aircraft and equipment. Physical training. Pre: 301 or 302.
- 301, 302 (201-202) THIRD-YEAR AEROSPACE STUDIES (3, 3) I, II** Kozuma
Survey course about development of U.S. airpower and its concepts, doctrine, employment; and about astronautics and space operations and future development of aerospace power.
- 451, 452 (251-252) FOURTH-YEAR AEROSPACE STUDIES (3, 3) I, II** Hartel, Veylupek
Study of professionalism, leadership, management. Includes leadership theory, functions and practices as they apply to Air Force.

American Studies (Am St)

Professors BROWN, DENNEY, LUTZKY; Associate Professors KINLOCH, MATSON,
MCCUTCHEON; Assistant Professors GURIAN, NEIL

- 475 AMERICAN TASTE (3)** Neil
Study of popular attitudes towards the arts, travel, fashions, craft and industrial productions, and recreation. Past will be used to explain present.
- 485-486 CONTEMPORARY AMERICAN CIVILIZATION (3-3) Yr.** Gurian
1st sem: Development of modern dissent and its uses in American religious, political, social movements. *2nd sem:* Race in contemporary America: traditions, attitudes, issue and programs concerning the Negro, the Amerind, and the white.
- 615 (490) LEADERS AND MOVEMENTS IN AMERICAN THOUGHT (3) I, II** Brown, Neil
Examination in depth of two or three significant personalities in American history and literature and the movements which originated from their ideas. Different personalities considered each semester. May be repeated for credit.
- 631 (630) CRITICISM IN THE MASS MEDIA (3) I** Matson
Problems in criticism, philosophy of art and aesthetics as generated by modern mass communications techniques. Limited to 20 students. Qualified seniors admitted. Pre: consent of instructor.
- 635 PERSPECTIVES IN COMPARATIVE LITERATURE (3) II** Denney
To explore, in Asian and Western literary works, literary questions that are cross-cultural and comparative.

- 641 (640) ASIAN INFLUENCES IN AMERICAN CIVILIZATION (3) I, II** **McCutcheon**
To examine the influence of Asia in American history, literature, politics, thought, architecture, and fine arts.
- 650 AMERICAN CIVILIZATION AND THE OVERSEAS AMERICAN (3) II** **Brown**
Examination of American civilization with special reference to those issues, principles, and problems most significant to Americans preparing for work and study in other areas of the world.
- 665 (660) SEMINAR: PRESIDENTIAL LEADERSHIP & AMERICAN CIVILIZATION (3) I, II** **Brown**
Interdisciplinary studies of the impact of various presidencies on social, political, economic, and cultural life of U.S. and the response of presidents to popular currents of thought. Different presidents examined each semester. May be repeated for credit.
- 670 SEMINAR: SOCIABILITY IN THE UNITED STATES (3) II** **Denney**
Applications of concepts, definitions, classifications, and discriminations developed in the social sciences to materials dealing with institutions of sociability and hospitality in U.S.
- 685-686 SEMINAR: NATURE OF AMERICAN SOCIETY (3-3) Yr.** **McCutcheon**
Examination and interpretation of American people and society for foreign students. Pre: consent of instructor.
- 690 INTRODUCTION TO CONTEMPORARY AMERICA (3) I, II** **Lutzky**
Survey of people, society, arts and sciences, business and government for students preparing to teach English as a second language. Pre: consent of instructor.
- 701 (700) METHODS IN AMERICAN STUDIES (3) I** **Neil**
Consideration of alternative conceptual frameworks, with corresponding research methods, appropriate to American Studies.
- 702 (699) PROSEMINAR (3) II** **Neil**
Discussion of standard works in the field. Pre: consent of instructor.
- 750 SEMINAR IN THE INTERACTION OF ASIA AND AMERICA (3) II** **Kinloch**
Effect of inter-cultural exchange of ideas, values, and techniques between peoples of Asia and U.S. Pre: consent of instructor.
- 799 DIRECTED RESEARCH (arr.) I, II**
Pre: graduate standing; consent of instructor.
- 800 THESIS RESEARCH** **Staff**

ASIA-AMERICA SEMINARS

(These courses are offered specifically for East-West Center grantees.)

- 501 SEMINAR: ASIA-AMERICA 1 (2) I** **Lutzky**
Comparative study of basic Asian and American institutions and peoples with special reference to problems of youth in a changing contemporary society.
- 502 SEMINAR: ASIA-AMERICA 2 (0) II** **Lutzky**
Broad view of mainland America, primarily for Asian students, enabling grantees to understand geography, ways of life, educational system, and other aspects of the U.S. that will be encountered while engaged in Field Study Program.
- 503 SEMINAR: ASIA-AMERICA 3 (0) II** **Lutzky**
Evaluation by Asian students of their American experiences and by American students of their Asian experiences. This seminar offers a forum for free exchange of ideas and impressions gained in Field Study Program.

Anthropology (Anth)

Professors **LEBRA, LUOMALA, MARETZKI, MASON, SOLHEIM**; Associate Professors **BOGGS, DEWEY**; Assistant Professors **EYDE, HARRISON, LESSIN, LEWIS, PEARSON, QUINN**

150 INTRODUCTION TO ANTHROPOLOGY (3) I, II

Human evolution; prehistoric development of culture; recent and contemporary man, common features and principal variations in cultural behavior.

200 CULTURAL ANTHROPOLOGY (3) I, II

Nature of culture; basic concepts for analyzing cultural behavior; patterning, integration, and dynamics of culture; culture and the individual.

210 ARCHEOLOGY (3) II

Introduction to prehistoric archeology; methods and techniques of excavation and laboratory analysis; brief survey of man's cultural growth in prehistoric times. Pre: 150 or 200 or written consent of instructor.

220 ETHNOGRAPHY (3) I

Comparative study of selected folk, peasant, urban societies of the world. Pre: 150 or 200 or written consent of instructor.

230 SOCIAL ANTHROPOLOGY (3) II

Systematic study of human social institutions; general principles of social interaction formulated from ethnographic data. Pre: 150 or 200 or written consent of instructor.

250 OCEANIA (3) I

Introduction to native cultures of Polynesia, Micronesia, Melanesia, Australia. Pre: 150 or 200 or written consent of instructor.

399 DIRECTED READING OR RESEARCH (arr.) I, II

Limited to majors with 2.7 grade-point ratio, or 3.0 grade-point ratio in anthropology.

All courses in the 400 series may be taken for graduate credit.

400 (500) ANTHROPOLOGICAL STATISTICS (3) II

Introduction to statistical methods and their use in analysis of anthropological data. Pre: 200 or written consent of instructor.

410 (510) FOUNDATIONS OF ANTHROPOLOGICAL METHOD (3) I

Empirical and logical bases of the social sciences applicable in anthropological inquiry. Pre: 200 or written consent of instructor.

420-421 (520-521) ARCHEOLOGICAL TECHNIQUES (3-3) I, II

Archeological survey and excavation; week-end field trips, mapping, photography, recording. Laboratory analysis and evaluation of field data; preservation and restoration of artifacts. Preparation of materials for publication. Pre: 210 or equivalent and course in statistics, or written consent of instructor.

440 REGIONAL CULTURES OF ASIA (3) I, II

Historical problems and regional developments in ecology, social structure, world view, and other aspects of selected indigenous cultures. Selected cultures to be covered in a region will be named in the semester course schedule. (1) Continental East Asia, (2) Continental Southeast Asia, (3) Insular Southeast Asia, (4) South Asia. Pre: 200, or written consent of instructor. May be repeated.

450 REGIONAL CULTURES OF OCEANIA (3) I, II

Historical problems and regional developments in ecology, social structure, world view, and other aspects of indigenous cultures. (1) Hawaii, (2) Micronesia, (3) Polynesia, (4) Melanesia. Pre: 250, or written consent of instructor.

460 REGIONAL ARCHEOLOGY (3) I, II

Regional surveys of prehistoric cultures, based on archeological research. (1) Asia and Pacific, (2) Europe, Africa, and Near East, (3) North and South America. Pre: 210, or written consent of instructor. May be repeated.

470 ARTS IN CULTURAL PERSPECTIVE: FOLKLORE (3) I

Art as aspect of culture; technique, form, style, and meaning, viewed cross-culturally. Complements Music 471 and Art 472 in which credit towards major will be granted. Pre: 150 or 200 or written consent of instructor.

480 (550) ANTHROPOLOGICAL APPLICATIONS (3) I, II

Anthropological theory, method, data applied to problems in specialized fields. Oriented to needs of students in professional fields who lack anthropological background. (1) Development, (2) health, (3) education (same as Ed EF 480). Pre: written consent of instructor.

491 SENIOR HONORS SEMINAR I (3) I

Integration of concepts, approaches to knowledge, historical development of theory, major findings in physical anthropology and prehistory. Open to anthropology majors in honors program and other qualified honors students. Pre: consent of coordinator of undergraduate honors studies and instructor.

492 SENIOR HONORS SEMINAR II (3) II

Integration of concepts, approaches to knowledge, historical development of theory, major findings in cultural anthropology and linguistics. In linguistics, emphasis on such topics as language and culture, and significance of linguistic theory and methodology for research in anthropology. Open to anthropology majors in honors program and other qualified honors students. Pre: consent of coordinator of undergraduate honors studies and instructor.

650-651 PROSEMINAR: GENERAL ANTHROPOLOGY (6-6) I, II

Major issues and problems in principal fields of anthropology: biological, archeological, social, psychological. Pre: classified graduate standing in anthropology, or written consent of instructor for other classified graduate students.

660 SOCIAL ORGANIZATION (3) I

Analytical study of organized group activity in societies of varied complexity. Theories of kinship and social structure. Pre: classified graduate standing and 6 credits of social/cultural anthropology, or written consent of instructor.

665 PSYCHOLOGICAL ANTHROPOLOGY (3) II

Study of personality in relation to sociocultural systems. Theories and techniques for analysis. Pre: classified graduate standing and 6 credits of social/cultural anthropology, or written consent of instructor.

670 ARCHEOLOGY (3) I

Intensive review of origin and development of cultures in Old and New Worlds as revealed by archeology. Pre: 650 or equivalent, or written consent of instructor.

675 COMPARATIVE RELIGION (3) II

Origins and development of magic and religion, primarily among tribal and folk societies. Ritual and symbolism as aids to social and cultural integration. Pre: classified graduate standing and 6 credits of social/cultural anthropology, or written consent of instructor.

690 ECOLOGICAL ANTHROPOLOGY (3) II

Study of relationship of man with his natural environment, particularly emphasizing role of culture as dynamic component in ecological systems. Patterns of production, exchange, property, consumption. Pre: classified graduate standing and 6 credits of social/cultural anthropology, or written consent of instructor.

699 DIRECTED READING OR RESEARCH (arr.) I, II

Pre: classified graduate standing, or written consent of instructor.

700 HISTORY OF ANTHROPOLOGY (3) I

Historical development of anthropology, emphasizing unity of diverse fields which constitute study of man. Pre: classified graduate standing and 6 credits of social/cultural anthropology, or written consent of instructor.

710 ANTHROPOLOGICAL TECHNIQUES (3) II

Theory construction and research design; collection of data (objective, subjective, projective techniques); processing and evaluation of data. Pre: 410, 650-651 or equivalent, and a course in statistics.

750 RESEARCH SEMINAR (3) I, II

Reporting and discussion of selected problems in current research. (1) Archeology, (2) linguistics, (3) ethnography, (4) social anthropology, (5) applied anthropology, (6) psychological anthropology, (7) biological anthropology. Pre: classified graduate standing and written consent of instructor. May be repeated.

800 THESIS RESEARCH (arr.) I, II

Art (Art) and Architecture (Arch)

Professors ANDERSON, COX, ETHERINGTON, HORAN, KINGREY, NEOGY, NORRIS, ROBINSON, TERAZAKI, TURNBULL; Associate Professor KIMURA; Assistant Professors BURGESS, BUSHNELL, HAVAAS, MAHONEY, MCVAY, PREBLE, ROSEN, STASACK; Instructors LINTAULT, NEWMAN, SATO, WISNOSKY; Acting Assistant Professors BONARIO, CASWELL, GILL, MOES

Except as noted, completion of introductory studio courses Art 113, 114, 115, 116, and Art 101 or IS 131 is the prerequisite to all studio courses numbered 200 and above. Art 101 is the prerequisite to all art history courses but other appropriate preparation may be substituted with the consent of the instructor.

The department may retain any student work for departmental use.

ARCHITECTURE (Arch)

133-134 ARCHITECTURAL DESIGN (3-3) I, II**Boone**

Basic architectural design problems. *1st Sem:* graphic presentation techniques, perspective, descriptive geometry, shades and shadows. *2nd Sem:* basic architectural structural concepts and development of architectural form, space, light, scale and proportion. Pre: Art 101, 113, 114.

195 INTRODUCTION TO LANDSCAPE ARCHITECTURE (3) I

Survey of principles and theory of landscape architecture. (Alt. yrs., not offered 1968-69.)

205-206 ARCHITECTURAL ENGINEERING

Same as CE 205-206; see "College of Engineering."

233-234 ARCHITECTURAL DESIGN (3-3) Yr.

Design of simple buildings and their interrelationships with site and surrounding environment. Emphasis on study of human needs, activity systems, space analysis, orientation, climate and structural systems. Pre: 134.

271-272 HISTORY OF ARCHITECTURE (3-3) Yr.**Creighton**

Survey of all periods, including appropriate architectural theory; reference reading, illustrated lectures.

313-314 PROFESSIONAL PRACTICE (3-3) Yr.

Properties of materials, working drawing, surveying and contemporary drafting room practice. Pre: 206, 234.

333-334 ARCHITECTURAL DESIGN (3-3) Yr.

Projects include site planning, design of complex building or group of buildings, urban design. Emphasis on design modifying factors such as time, distance and motion; integration of mechanical, structural and architectural systems with current building codes and specific climatic environmental conditions. Pre: 234.

394-395 SENIOR HONORS THESIS (3-3) Yr.**Staff**

Preparation of architectural design under individual faculty supervision. Required for graduation with honors. Pre: consent of instructor.

399 DIRECTED WORK (arr.) I, II

Pre: consent of instructor and chairman.

405-406 ADVANCED PHYSICAL SYSTEMS (4-4) Yr.**Terazaki**

Applied problems of physical systems of architecture in wood, steel, concrete. Pre: 206 and concurrent registration in 433-434.

413-414 PROFESSIONAL PRACTICE (3-3) Yr.**Fairweather**

Visual and descriptive analysis of fabrication principles. Pre: 314 and concurrent registration in 433-434.

423-424 ENVIRONMENTAL CONTROLS (3-3) Yr.**Terazaki**

Utilization of micro-climatology, insulation, artificial and natural light, temperature and humidity regulation devices, applied acoustic design, health and sanitation in relation to buildings. Pre: Phys 160 and concurrent registration in 433-434.

433-434 ARCHITECTURAL DESIGN (6-6) Yr.**Staff**

Design of architectural project with emphasis on integration of design, functional, structural, and mechanical processes. Pre: 334.

495 ELEMENTS OF URBAN DESIGN (3) I**Grant**

Elements of urban design with emphasis on tropical problems. Pre: consent of instructor.

616 PROFESSIONAL PRACTICE (3) I**Staff**

Advanced ethical and economic problems of professional practice. Pre: 414.

640 ARCHITECTURE AND PLANNING IN TROPIC AREAS (4) II**Mahoney**

Elements of planning for tropical communities. Pre: 434 or consent of instructor.

690 SEMINAR ON TROPICAL ARCHITECTURE (2) II**Mahoney**

Problems, philosophies and systems of tropical architecture from various areas of tropics and sub-tropics. Pre: 434 or consent of instructor.

699 DIRECTED WORK (3) I

Pre: consent of instructor and chairman.

ART (Art)**101 INTRODUCTION TO THE VISUAL ARTS (3) I, II****Preble**

Nature of visual art and its expressions in various forms. Lectures, demonstrations.

105 ELEMENTARY STUDIO—CERAMICS (3) I, II**Staff**

Studio experience mainly for non-majors. Lectures and projects. Credit cannot count towards major requirements in Art. Pre: 101.

106 ELEMENTARY STUDIO—SCULPTURE (3) I, II**Staff**

Studio experience mainly for non-majors. Lectures and projects. Credit cannot count towards major requirements in Art. Pre: 101.

107 ELEMENTARY STUDIO—PHOTOGRAPHY (3) I, II**Staff**

Studio experience mainly for non-majors. Lectures and projects. Credit cannot count towards major requirements in Art. Pre: 101.

113 INTRODUCTORY STUDIO "A" (3) I, II**Staff**

Emphasis on perception: visual responses to nature; materials, techniques, modes of

representation. Problems in two and three dimensions involving photography, drawing, painting, sculpture and construction. Pre: 101 or IS 131 (may be taken concurrently).

114 INTRODUCTORY STUDIO "B" (3) I, II **Staff**
 Emphasis on light: environmental; general intensity; value range; sources; chiaroscuro; pattern; principles of color. Problems in two and three dimensions involving drawing, painting, sculpture, design. Pre: 101 or IS 131 (may be taken concurrently).

115 INTRODUCTORY STUDIO "C" (3) I, II **Staff**
 Emphasis on space: environmental; actual and illusionary; changing spatial systems and space modifiers. Problems in two and three dimensions involving drawing, painting, sculpture, design. Pre: 101 or IS 131 (may be taken concurrently).

116 INTRODUCTORY STUDIO "D" (3) I, II **Staff**
 Emphasis on time, motion, systems: visual kinetics sequence, rhythm, order and systems. Problems in two and three dimensions involving drawing, painting, sculpture, design. Pre: 101 or IS 131 (may be taken concurrently).

131 MAN AND THE ARTS
 Same as IS 131; see "Interdisciplinary Studies."

132 MAN AND HIS CITY
 Same as IS 132; see "Interdisciplinary Studies."

394-395 SENIOR HONORS THESES (3-3) Yr. **Staff**
 Projects under individual faculty supervision. Required for graduation with honors. Pre: junior standing.

399 DIRECTED WORK (arr.) I, II
 Pre: consent of instructor and chairman.

699 DIRECTED WORK (arr.) I, II
 Pre: consent of instructor and chairman.

800 THESIS RESEARCH (arr.) I, II

ART HISTORY (Art)

270 ASPECTS OF EUROPEAN AND AMERICAN ART (3) I, II **Bonario**
 Major developments in arts of Europe and America.

280 ASPECTS OF ASIAN ART (3) I, II **Staff**
 Major developments in arts of Asia.

370 ANCIENT ART (3) I **Bonario**
 Arts of Mediterranean Basin from pre-historic times to Christian era. Pre: 270.

371 MEDIEVAL ART (3) II **Bonario**
 Arts of Europe from early Christian era to Renaissance. Pre: 270.

376 MODERN ART (3) II **Bonario**
 Sculpture and painting of Europe and America in 19th and 20th centuries. Pre: 270.

384 ART OF JAPAN AND KOREA (3) I **Moss**
 Major developments in arts of Japan and Korea. Pre: 280.

385 ART OF CHINA (3) I **Caswell**
 Major developments in arts of China. Pre: 280.

391 ART OF SOUTH ASIA (3) I **Neegy**
 Major developments in arts of South Asia, West Asian context and growth of South-east Asian art. Pre: 280.

470 RENAISSANCE THROUGH ROCOCO (3) I **Bonario**
 Arts of Europe during Renaissance, Mannerist, Baroque and Rococo periods. Pre: 270.

- 471 ART AND ARCHITECTURAL FIELD STUDIES (arr.)** **Etherington**
Study tours to various countries to examine historical and contemporary art and architecture with lectures at various sites. Pre: consent of instructor. May be repeated.
- 472 PRIMITIVE ART (3) I** **Gill**
Survey of styles and esthetic characteristics of arts of pre-literate cultures.
- 475 ARTS OF THE PACIFIC (3) II** **Staff**
Stylistic and esthetic characteristics of indigenous arts of Oceania, including Australia, Indonesia, Micronesia, Melanesia, Polynesia. Pre: 270.
- 483 MODERN ART OF JAPAN (3) II** **Moes**
Arts of Edo Period, woodblock prints, folk arts, Nationalist revival and modern movement of 19th and 20th centuries. Pre: 280.
- 485 APPLIED ARTS OF CHINA (3) II** **Caswell**
Architecture, furniture, landscaping, ceramics, metal work, lacquer, textiles: Pre: 280.
- 491 ART OF ISLAM (3) II** **Neogy**
Major developments in arts and architecture of Islam. Pre: 280.
- 675 ARTS OF HAWAII (3) I** **Cox**
Stylistic and esthetic characteristics of arts of Western Oceanic cultures. Pre: consent of chairman and instructor.
- 676 ARTS OF INDONESIA AND MELANESIA (3) II** **Gill**
Stylistic and esthetic characteristics of arts of southwest Pacific cultures. Pre: consent of chairman and instructor.
- 680 EARLY CHINESE PAINTING (3) I** **Caswell**
From earliest times through Sung dynasty. Pre: consent of chairman and instructor.
- 686 LATER CHINESE PAINTING (3) II** **Caswell**
From end of Sung dynasty to present. Pre: consent of chairman and instructor.
- 691 ART OF CENTRAL ASIA (3) I** **Neogy**
Hellenistic and Roman influences in south and central Asia. Origins of Buddha image. Pre: consent of chairman and instructor.
- 780 EARLY ARTS OF JAPAN (3) I** **Moes**
From pre-historic times to preponderance of Buddhist imagery. Pre: consent of chairman and instructor.
- 781 LATER ARTS OF JAPAN (3) II** **Moes**
Rise of Yamato School. Influences of Zen and tea taste. Pre: consent of chairman and instructor.
- 791 BUDDHIST AND HINDU ART (3) II** **Neogy**
Development of Buddhist and Hindu art in South and Southeast Asia. Pre: consent of chairman and instructor.

CERAMICS (Art)

- 243 CERAMICS A (3) I, II** **Staff**
Introduction to ceramic forms using hand building and wheel throwing techniques. Introduction to glazing techniques and surface treatment. Seminars.
- 244 CERAMICS B (3) I, II** **Staff**
Intermediate wheel throwing and hand building. Operation and care of kilns. Seminars. Pre: 243.
- 341 ADVANCED CERAMICS (3) I, II** **Staff**
Wheel throwing or hand building. Individual development. Seminars. Pre: 244. May be repeated.

- 342 GLAZE CALCULATIONS (3) I, II** **Staff**
Molecular formulae of glazes; temperature effects. Analysis of quality of glazes clay bodies. Seminars. Pre: 244. May be repeated.
- 646 CERAMICS (3) I** **Staff**
Individual problems in advanced ceramics using hand building techniques. Seminars. Pre: consent of chairman and instructor. May be repeated.
- 647 CERAMICS (var.) II** **Staff**
Individual problems in advanced ceramics using potter's wheel. Seminars. Pre: consent of chairman and instructor. May be repeated.
- 648 CERAMIC GLAZES AND CLAY BODIES (3) I**
Individual problems in glazes and firing techniques. Seminars. Pre: consent of chairman. May be repeated.
- 649 CERAMICS (3) II**
Individual problems in clay bodies and firing techniques. Seminars. Pre: consent of chairman and instructor. May be repeated.

DRAWING (Art)

- 213 FIGURE DRAWING (3) I, II** **Staff**
Intensive drawing from human figure. May be repeated.
- 214 ANATOMY FOR ARTISTS (3) II** **Staff**
Introduction to anatomy and articulation.
- 313 ADVANCED DRAWING STUDIO (3) I, II** **Staff**
Creative projects in drawing, graphic techniques. Models provided. Pre: 213 and 214. May be repeated.
- 314 ILLUSTRATION (3) I** **Kimura**
Advanced projects based primarily on human figure. Treatment of costume, portrait, characterization. Reproduction techniques. Seminars. Pre: 213 and 214. May be repeated.

PAINTING (Art)

- 220 MATERIALS AND TECHNIQUES (3) I** **Staff**
Painting studio with emphasis on materials and techniques.
- 223 PAINTING "A" (3) I, II** **Staff**
Painting from studio and outdoor subject matter. Elements of pictorial style.
- 224 PAINTING "B" (3) I, II** **Staff**
Painting from identifiable sources; emphasis on expression and structure. Oil and related media. Pre: 223.
- 225 PAINTING "C" (3) II** **Staff**
Emphasis on water-soluble media, including contemporary developments. Pre: 220.
- 323 ADVANCED PAINTING (3) I, II** **Staff**
Development of independent expression with considerable freedom of choice. Seminars. Pre: 224 or 225. May be repeated.
- 624 PAINTING (3) I, II** **Staff**
Individual problems in advanced painting. Seminars. Pre: consent of chairman and instructor. May be repeated.

PHOTOGRAPHY (Art)

- 207 PHOTOGRAPHY A (3) I, II** **Staff**
Camera as tool of expression and photography as basic art form. Student required to have own camera.

- 208 PHOTOGRAPHY B (3) I, II** **Staff**
Development of form in photography. Pre: 207.
- 209 BASIC CINEMATOGRAPHY (3) II** **Staff**
Introduction to 8 and 16 mm film production. Pre: basic still-photography experience. Students supply their own cameras.
- 407 ADVANCED PHOTOGRAPHY (3) I, II** **Staff**
Individual problems in advanced photography. Seminars. Pre: 208. May be repeated.

PRINTMAKING (Art)

- 217 PRINTMAKING (3) I, II** **Staff**
Technical controls; development of concepts appropriate to printmaking. May be repeated.
- 317 ADVANCED PRINTMAKING (3-3) I, II** **Staff**
Independent projects; advanced studio practice. Seminars. Pre: two semesters of 217. May be repeated.
- 617 PRINTMAKING (3-3) I, II** **Staff**
Individual problems in intaglio, relief and planographic processes. Seminars. Pre: consent of chairman and instructor. May be repeated.

SCULPTURE (Art)

- 253 SCULPTURE (3) I, II** **Staff**
Study of form and structure, using variety of materials and techniques. Seminars.
- 254 INTERMEDIATE SCULPTURE (3) I, II** **Staff**
Developing concepts of personal form and form relationships with cast and welded metals. Seminars. Pre: 253.
- 353 ADVANCED SCULPTURE (3) I, II** **Staff**
Individual projects stressing experimentation and subjective approach to form. Seminars. Pre: 254. May be repeated.
- 453 SCULPTURE (3) I, II** **Sato**
Individual problems in advanced sculpture, seminars. Pre: consent of chairman and instructor. May be repeated.

TEXTILE DESIGN (Art)

- 230 TEXTILE DESIGN (3) I, II** **Havaas**
Design problems for production of printed fabric utilizing silk screen techniques. Seminars.
- 330 ADVANCED TEXTILE DESIGN (3) I, II** **Havaas**
Design and execution of printed fabric, utilizing photographic processes and combined techniques of silkscreen printing. Seminars. Pre: 230 (exception: visual design majors). May be repeated.
- 630 TEXTILE DESIGN (3) I, II** **Havaas**
Individual problems in areas of specific interest within textile field. Seminars. Pre: consent of chairman and instructor. May be repeated.

VISUAL DESIGN (Art)

- 265 ADVANCED VISUAL DESIGN (3) I** **Kingrey**
Investigation into processes of visualization, its expression and control. Seminars. May be repeated.
- 266 ADVANCED VISUAL DESIGN (3) II** **Kingrey**
Design and communication. Projects closely bound to idiom and problems of our time; systems, grid, module, computer, symbol. Pre: 265.

- 361 TYPOGRAPHY (3) I** Staff
Development of letter form in calligraphy and typography.
- 362 LETTER FORMS (3) II** Staff
Design and communication. The letter as visual symbol and element in design organization. Pre: 361.
- 663-664 VISUAL COMMUNICATION (3-3) Yr.** Staff
Experimental problems of visual design which communicate. Creation of new images and symbols. Seminars. Pre: consent of chairman and instructor. May be repeated.
- 665 ADVANCED TYPOGRAPHY (3) I** Staff
Individual problems in typography. Seminars. Pre: consent of chairman and instructor. May be repeated.
- 773-774 VISUAL DESIGN RESEARCH (arr.) Yr.** Staff
Advanced design and communication. Emphasis on problem-solving incorporating research. Seminars. Pre: consent of chairman and instructor. May be repeated.

WEAVING (Art)

- 238 WEAVING (3) I, II**
Creative processes of weaving. Warping and threading of simple hand looms and multiple harness looms. Seminars.
- 239 WEAVING (3) I, II** Staff
Experimentation with techniques and study of pattern drafting. Designing for specific problems. Seminars. Pre: 238.
- 338-339 ADVANCED WEAVING (3-3) Yr.** Robinson
Individual problems in weave construction and drafting; yarn and fiber characteristics as structural elements. Seminars. Pre: 239. May be repeated.
- 635 RUG AND TAPESTRY TECHNIQUES (3) I, II** Staff
Examination of traditional rug and tapestry techniques as point of departure for contemporary experimental expression. Seminars. Pre: consent of chairman and instructor. May be repeated.
- 638-639 WEAVING (3-3) Yr.** Robinson
Individual problems in advanced weaving. Seminars. Pre: consent of chairman and instructor. May be repeated.

Asian and Pacific Languages

Professors ARAKI, DEFRANCIS, ELBERT, FRODSHAM, UYEHARA, VIGLIELMO, YOUNG; Associate Professors ARTOLA, DEHEER, IKEDA, P. LEE, LO, MAURER, WINTERS; Assistant Professors FUJIOKA, GETHING, HOPFER, Y. S. LEE, SPENCER, THERN; Instructors ALEXANDER, BAUMER, BROWN, CHANG, CHENG, CHINN, FUJIKAWA, HASEGAWA, HIRATA, C. H. JEN, S. M. JEN, JENNER, JOHNSON, KOBAYASHI, KONNO, KUNISHIMA, LARRABEE, D. J. LEE, MAUKELE, MCLEOD, NISHIMURA, NOGUCHI, O'HARROW, PEENITO, ROFFE, M. SATO, Y. SATO, H. SUGITA, TAKAGAKI, TAKAHASHI, TAKEUCHI, TATEISHI, TSUYUKI, WAKITA, WANG, WELLINGTON, YAMADA, YAMAURA, M. YOSHIKAWA; Scholars in Residence NAKAMURA, GOTO, KAWABATA; Specialists MCLARTY, SONG, B. P. YOSHIKAWA

General (AP)

- 101-102 DIRECTED ELEMENTARY LANGUAGE STUDY (3-3) Yr.** Staff
Directed study of an Asian or Pacific language not regularly listed by the department. In principle, classes will meet 1 hour daily, Monday through Friday. Offering depending on demand and available staff. Pre: consent of instructor.

- 201-202 (161-162) DIRECTED INTERMEDIATE LANGUAGE STUDY (3-3) Yr.** **Staff**
Continuation of 101-102. Pre: consent of instructor.
- 300 (399) DIRECTED THIRD-LEVEL LANGUAGE STUDY (3) I, II** **Staff**
Directed study of one of the Asian and Pacific languages involving advanced structures, expressions, patterns. Pre: consent of chairman.
- 361-362 (401-402) SOUTHEAST ASIAN LITERATURE (3-3) Yr.** **Staff**
Historical survey of Southeast Asian verse and prose in relation to Southeast Asian culture. Conducted in English. Pre: two semesters of literature in English department.
- 400 (399) DIRECTED FOURTH-LEVEL LANGUAGE STUDY (3) I, II** **Staff**
Directed study of one of the Asian and Pacific languages involving complex structures, expressions, patterns. Pre: consent of chairman.
- 451-452 (407-408) STRUCTURE OF AN ASIAN OR PACIFIC LANGUAGE (3-3) Yr.**
Structure of one Asian or Pacific language, including Balinese, Cambodian, Cebuano, Fijian, Ilocano, Javanese, Korean, Lao, Marathi, Pali, Samoan, Tamil, Trukese, Urdu, Vietnamese or other Asian or Pacific language, depending on demand and staff. Pre: two levels of a Southeast Asian or Pacific language.
- 453-454 SURVEY OF SOUTHEAST ASIAN LANGUAGES (3-3) Yr.**
Introductory lecture course on history, spread, typology of the languages of Southeast Asia. Primarily for students of Southeast Asian languages. Pre: two levels of a Southeast Asian language.
- 690 DIRECTED READING (arr.) I, II**
Directed reading of advanced text written in one of the Asian and Pacific languages. Pre: consent of instructor.
- 699 DIRECTED RESEARCH (arr.) I, II**
Pre: consent of instructor.
- 761-762 (751-752) SEMINAR IN EAST ASIAN COMPARATIVE LITERATURE (3-3) Yr.**
Comparative study of Chinese, Korean, and Japanese literature, to explore interrelations, to trace influence of one literature on another, to investigate main currents, periods, movements, topics or themes. Pre: any of the following: Chinese 402 or 428, Japanese 402 or 464, Korean 402 or 462.

Chinese (Chin)

- 101-102 ELEMENTARY CHINESE (3-3) Yr.**
Development of listening, speaking, reading, writing. Structural points introduced inductively. Meets 1 hour daily, Monday through Friday; 4 out of 5 hours devoted to directed drill and practice. Daily laboratory work.
- 103 (107) ACCELERATED ELEMENTARY CHINESE (6) I**
Meets 2 hours daily, Monday through Friday, with daily laboratory drill. In one semester, content of 101-102 covered. Pre: consent of instructor.
- 201-202 (161-162) INTERMEDIATE CHINESE (4-4) Yr.**
Continuation of Chinese 101-102. After completion, student should be proficient in using major sentence patterns. Meets 1 hour daily, Monday through Friday; 4 out of 5 hours devoted to directed drill and practice. Daily laboratory work. Pre: 102 or equivalent.
- 204 (168) ACCELERATED INTERMEDIATE CHINESE (8) II**
Meets 2 hours daily Monday through Friday with daily laboratory drill. In one semester content of 201-202 covered. Pre: consent of instructor.
- 301-302 (209-210) THIRD-LEVEL CHINESE (3-3) Yr.**
Emphasis on vocabulary building and extended mastery of sentence structures of modern Chinese through reading and related conversation. Pre: 202 or equivalent.
- 303 (227) ACCELERATED THIRD-LEVEL CHINESE (6) I**
In one semester content of 301-302 covered. Pre: consent of instructor.

321-322 (201-202) CHINESE CONVERSATION (3-3) Yr.

Systematic practice on everyday topics of conversation. Laboratory drill. Pre: 202 or equivalent.

361 (401-402) CHINESE LITERATURE IN TRANSLATION—TRADITIONAL (3) I

Historical survey from earliest times to 1842, with emphasis on analysis. Knowledge of Chinese not required. Pre: two semesters of literature in English department.

362 (401-402) CHINESE LITERATURE IN TRANSLATION—MODERN (3) II

Historical survey from 1842 to present, with emphasis on analysis. Knowledge of Chinese not required. Pre: two semesters of literature in English department.

401-402 (409-410) FOURTH-LEVEL CHINESE (3-3) Yr.

Extensive reading with emphasis on academic topics. Pre: 302 or 303.

404 (428) ACCELERATED FOURTH-LEVEL CHINESE (6) II

In one semester content of 401-402 covered. Pre: consent of instructor.

421-422 ADVANCED CHINESE CONVERSATION (3-3) Yr.

Systematic practice in academic topics of conversation. Laboratory drill. Pre: 322 or equivalent, or 302 and consent of instructor.

431-432 (251-252) CHINESE FOR READING KNOWLEDGE (3-3) Yr.

Rapid reading of materials related to miscellaneous academic topics. Pre: 402 or equivalent and consent of instructor.

433-434 SELECTED READINGS IN CHINESE (3-3) Yr.

Selected readings in various discipline areas, with specific areas determined on basis of student interest and availability of staff. Pre: 432 or equivalent and consent of instructor.

435-436 (211-212) INTRODUCTORY CLASSICAL CHINESE (3-3) Yr.

Analysis of basic structural patterns in classical Chinese through selected readings in various texts. Pre: 432 or equivalent.

437-438 (417-418) ADVANCED CLASSICAL CHINESE (3-3) Yr.

Advanced readings in classical texts. Pre: 436 or equivalent.

440 (220) CHINESE COMPOSITION (2) I, II

Training in modern Chinese composition. Pre: 402 or equivalent.

451-452 (407-408) STRUCTURE OF CHINESE (3-3) Yr.

Introductory study of phonology, morphology, syntax of Mandarin Chinese including some discussion of usage and linguistic geography. Pre: 202 or equivalent.

453-454 (231-232) STUDY OF CHINESE CHARACTERS (2-2) Yr.

Reading course for those who are not Chinese majors but interested in developing reading skill. Pre: 402 or 432.

461 INTRODUCTION TO CHINESE LITERATURE—MODERN (3) I

Selected readings in post-1850 prose fiction, poetry and drama, with an emphasis on analysis. Pre: 362 and 432 (or may be taken concurrently with 431 with consent of instructor).

462 INTRODUCTION TO CHINESE LITERATURE—TRADITIONAL (3) II

Selected readings in major genres, with an emphasis on analysis. Pre: 361 and 461.

490 (493) REFERENCE MATERIALS FOR CHINESE STUDIES (3) I, II

Reference materials required for Chinese studies. Pre: 302, 436 or equivalent.

493-494 (394-395) SENIOR HONORS THESIS—CHINESE (2-2) Yr.

Preparation of research paper under individual faculty supervision. Required for graduation with honors.

611-612 CONTEMPORARY CHINESE LITERATURE (3-3) Yr.

Representative works of leading modern novelists, poets, dramatists since 1919. Pre: 302, 436 or equivalent.

613-614 CHINESE POETRY (3-3) Yr.

Critical study of classical Chinese poetry in various forms. Pre: 436 or equivalent.

616 HISTORY OF CHINESE LITERARY CRITICISM (3) II

Survey of Chinese literary criticism from Confucius to 20th century. Pre: 436 or equivalent.

617 TRADITIONAL CHINESE FICTION (3) I

Study of major novels of Yuan, Ming, Ch'ing periods. Pre: 302, 436 or equivalent.

618 TRADITIONAL CHINESE DRAMA (3) II

Study of major plays of Yuan, Ming, early Ch'ing periods (e.g. *Romance of the Western Chamber*, *The Peony Pavilion*, *The Peach Blossom Fan*). Pre: 302, 436 or equivalent.

619-620 CHINESE ETYMOLOGY (3-3) Yr.

Advanced study of relation between Chinese language and writing system, study of characters on oracle bones and bronzes, evolution and reform of Chinese characters. Pre: 302, 436 or equivalent.

631 CHINESE PHONOLOGY (3) I

Phonological changes from Archaic Chinese through Ancient Chinese to Modern Chinese represented by Mandarin. Lectures in English. Pre: 452 or equivalent.

632 CHINESE DIALECTS (3) II

Study of major Chinese dialects. Lectures in English. Pre: 452 or equivalent.

641 CONTRASTIVE ANALYSIS OF MANDARIN AND ENGLISH: PHONOLOGY (3) I

Similarities and differences between English and Mandarin phonology. Pre: 452 or equivalent.

642 CONTRASTIVE ANALYSIS OF MANDARIN AND ENGLISH: MORPHOLOGY AND SYNTAX (3) II

Similarities and differences between English and Mandarin morphology and syntax. Pre: 641.

643-644 METHODOLOGY IN TEACHING CHINESE AS A SECOND LANGUAGE (3-3) Yr.

Identification and analysis of problems in language learning and language teaching. Practice in preparing and presenting lessons with materials based on comparative linguistics analysis, using audio-lingual approach. Teaching materials, teaching aids, test construction. Pre: 452 or equivalent.

651 HISTORICAL AND PHILOSOPHICAL TEXTS: PRE-T'ANG PERIOD (3) I

Reading and critical analysis of writings in pre-T'ang period. Pre: 438 or consent of instructor. May be repeated for credit.

652 HISTORICAL AND PHILOSOPHICAL TEXTS: T'ANG-CH'ING PERIODS (3) II

Reading and critical analysis of writings of T'ang-Ch'ing periods. Pre: 651 or consent of instructor. May be repeated for credit.

693-694 METHODS IN CHINESE STUDIES (3-3) Yr.

Main fields of research, special methods evolved, principal sources of bibliographical information. Pre: 438 or equivalent.

750 RESEARCH SEMINAR IN CHINESE (3) I, II

Specialization in (1) language, (2) literature, (3) teaching methods. Pre: consent of instructor. May be repeated.

800 THESIS RESEARCH (arr.) I, II

Pre: consent of instructor.

Hawaiian (Haw)**101-102 ELEMENTARY HAWAIIAN (3-3) Yr.**

Development of listening, speaking, reading, writing. Structural points introduced

inductively. Meets 1 hour daily, Monday through Friday. 4 out of 5 hours devoted to directed drill and practice. Daily laboratory work.

201-202 (151-152) INTERMEDIATE HAWAIIAN (3-3) Yr.

Continuation of 102. Meets 1 hour daily Monday through Friday. At least 3 out of 5 hours devoted to directed drill and practice. Reading of traditional texts. Daily laboratory work. Pre: 102 or equivalent.

301-302 (209-210) THIRD-LEVEL HAWAIIAN (3-3) Yr.

Continuation of 202. Conducted in Hawaiian. Advanced conversation and reading. Pre: 202 or equivalent.

361 (401) HAWAIIAN LITERATURE IN ENGLISH (3) I

Survey of traditional myths, legends, chants, songs, sayings conducted largely in English. Pre: 202 or equivalent.

401-402 (417-418) FOURTH-LEVEL HAWAIIAN (3-3) Yr.

Advanced reading and discussion in Hawaiian. Pre: 302 or equivalent.

435-436 (451-452) HAWAIIAN TRANSLATION (3-3) Yr.

Problems of translation of Hawaiian documents, legends, songs. Pre: 302 or equivalent.

452 (408) STRUCTURE OF HAWAIIAN (3) II

Detailed analysis of texts; contrastive analysis of Hawaiian and English as aid to prospective teachers of Hawaiian. Pre: 202 and Ling 202 or equivalent.

Hindi (Hindi)

101-102 ELEMENTARY HINDI (3-3) Yr.

Development of listening, speaking, reading, writing. Structural points introduced inductively. Meets 1 hour daily, Monday through Friday. At least 3 out of 5 hours devoted to directed drill and practice. Daily laboratory work.

201-202 (151-152) INTERMEDIATE HINDI (3-3) Yr.

Continuation of 102. Meets 1 hour daily, Monday through Friday. At least 3 out of 5 hours devoted to directed drill and practice sessions. Daily laboratory work. Pre: 102 or equivalent.

301-302 (211-212) THIRD-LEVEL HINDI (3-3) Yr.

Continuation of 202. Conversation and advanced reading. Pre: 202 or equivalent.

Indonesian (Ind)

103 ACCELERATED ELEMENTARY INDONESIAN (6) I

Development of listening, speaking, reading, writing. Structural points introduced inductively. Meets 2 hours daily, Monday through Friday. 8 out of 10 hours devoted to directed drill and practice. Daily laboratory work.

204 ACCELERATED INTERMEDIATE INDONESIAN (6) II

Continuation of 103. Meets 2 hours daily, Monday through Friday. 8 out of 10 hours devoted to directed drill and practice. Daily laboratory work. Pre: 103 or equivalent.

303 ACCELERATED THIRD-LEVEL INDONESIAN (6) III

Continuation of 204. Meets 2 hours daily, Monday through Friday. 5 out of 10 hours devoted to directed drill and practice. Study of modern written texts. Introduction of Arabic script. Laboratory work. Pre: 204 or equivalent.

404 ACCELERATED FOURTH-LEVEL INDONESIAN (6) IV

Continuation of 303. Meets 6 hours a week. Conducted in Indonesian. Advanced conversation and reading. Reading includes hikayat literature in Arabic script. Pre: 303 or equivalent.

Japanese (Jap)

101-102 ELEMENTARY JAPANESE (3-3) Yr.

Development of listening, speaking, reading, writing. Structural points introduced inductively. Meets 1 hour daily Monday through Friday; 4 out of 5 hours devoted to directed drill and practice. Daily laboratory work.

103 (107) ACCELERATED ELEMENTARY JAPANESE (6) I

Meets 2 hours daily Monday through Friday with daily laboratory drill. In one semester content of 101-102 covered.

120 (105-106) ELEMENTARY JAPANESE—REVIEW: SPOKEN (3) I, II

For students who have 102 equivalent writing ability but lack spoken proficiency. Content similar to spoken aspect of 101-102. Meets 3 times a week. Laboratory.

130 (105-106) ELEMENTARY JAPANESE—REVIEW: READING (3) I, II

For students who have 102 equivalent spoken ability but lack reading and writing proficiency. Content similar to reading and writing aspects of 101-102. Meets 3 times a week. Laboratory.

201-202 (161-162) INTERMEDIATE JAPANESE (4-4) Yr.

Continuation of 101-102. After completion, student should be proficient in using major sentence patterns. Meets 1 hour daily Monday through Friday; 4 out of 5 hours devoted to directed drill and practice sessions. Daily laboratory work. Pre: 102 or equivalent.

204 (168) ACCELERATED INTERMEDIATE JAPANESE (8) II

Meets 2 hours daily Monday through Friday with daily laboratory drill. In one semester, content of 201-202 covered. Pre: 103 or equivalent.

301-302 (211-212) THIRD-LEVEL JAPANESE (3-3) Yr.

Study of modern spoken and written Japanese involving advanced structures, expressions, patterns, *kyooiku kanji*. Pre: 202 or equivalent.

303 (227) ACCELERATED THIRD-LEVEL JAPANESE (6) I

Study of modern spoken and written Japanese involving advanced structures, expressions, patterns, *kyooiku kanji*. In one semester, content of 301-302 covered. Pre: 204 or equivalent.

311-312 JAPANESE AURAL COMPREHENSION (3-3) Yr.

Building up comprehension ability by using aural practice through movies and other visual aids. Pre: 202 or equivalent.

321-322 (201-202) JAPANESE CONVERSATION (3-3) Yr.

Development of general oral-aural proficiency. Pre: 202 or equivalent.

331-332 (251-252) JAPANESE FOR READING KNOWLEDGE (3-3) Yr.

Reading course for those who are not Japanese majors but interested in developing skill in reading in their areas of research. Pre: 202 or equivalent.

340 (220) JAPANESE COMPOSITION (2) I, II

Writing modern compositions following designated patterns, *kanji*, and themes. Pre: 202 or equivalent.

361 (401-402) JAPANESE LITERATURE IN TRANSLATION—TRADITIONAL (3) I

Historical survey from earliest times to 1868, with emphasis on analysis. Knowledge of Japanese not required. Pre: two semesters of literature in English department.

362 (401-402) JAPANESE LITERATURE IN TRANSLATION—MODERN (3) II

Historical survey from 1868 to present, with emphasis on analysis. Knowledge of Japanese not required. Pre: two semesters of literature in English department.

401-402 (417-418) FOURTH-LEVEL JAPANESE (3-3) Yr.

Study of modern spoken and written Japanese involving complicated structures, expressions, patterns, *tooyoo kanji*. Pre: 302 or equivalent.

404 (428) ACCELERATED FOURTH-LEVEL JAPANESE (6) II

Study of modern spoken and written Japanese involving complex structures, expressions, patterns, *tooyoo kanji*. In one semester content of 401-402 covered. Pre: 303 or equivalent.

411-412 ADVANCED JAPANESE AURAL COMPREHENSION (3-3) Yr.

Building up advanced comprehension ability by using aural practice through movies and other audio-visual aids. Pre: 312 or equivalent.

421-422 ADVANCED JAPANESE CONVERSATION (3-3) Yr.

Systematic practice in academic topics of conversation. Lab drill. Pre: 302 or equivalent.

431-432 SELECTED READINGS IN JAPANESE (3-3) Yr.

Rapid reading of material related to students' own areas of research or discipline. Pre: Japanese 332 or equivalent.

435-436 INTRODUCTION TO JAPANESE DOCUMENTARY AND EPISTOLARY STYLES (3-3) Yr.

Systematic study of *kambun* and *sōrōbun* styles and training in reading of various styles of calligraphy. Pre: 402 or equivalent.

440 ADVANCED JAPANESE COMPOSITION (2) I, II

Writing advanced modern composition following designated patterns, *kanji*, and themes. Pre: 302 or equivalent.

451-452 (407-408) STRUCTURE OF JAPANESE (3-3) Yr.

Phonology, morphology, syntax of modern colloquial grammar. Pre: 202 or equivalent.

455-456 (415-416) TOPICS IN JAPANESE GRAMMAR (3-3) Yr.

Analysis of topics in modern colloquial Japanese grammar. Pre: 302 or equivalent.

457-458 (421-422) JAPANESE GRAMMAR—CLASSICAL (3-3) Yr.

Detailed analysis of classical Japanese. Pre: 402 or equivalent.

461 (231-232) INTRODUCTION TO MODERN JAPANESE LITERATURE (3) I

Selected readings in major genres of post-1868 literature. Pre: 402 or equivalent, and 362 (may be taken concurrently).

464 (431-432) INTRODUCTION TO TRADITIONAL JAPANESE LITERATURE (3) II

Selected readings in major genres of pre-modern literature. Pre: 402 or equivalent and 361 (may be taken concurrently).

490 (493) REFERENCE MATERIALS FOR JAPANESE STUDIES (3) I, II

How to find, use, and evaluate reference materials basic to Japanese studies. Pre: 302, 461 or equivalent.

491-492 JAPANESE INTERPRETATION (3-3) Yr.

Training in techniques of summary, consecutive and simultaneous interpretation, English-Japanese, and Japanese-English. Pre: 402 or equivalent.

493-494 (394-395) SENIOR HONORS THESIS—JAPANESE (2-2) Yr.

Preparation of research paper under individual faculty supervision. Required for graduation with honors.

609-610 (619-620) JAPANESE POETRY (3-3) Yr.

Historical survey of poetical types including *tanka*, *haiku*, *senryuu*, *shi*, folk songs. Pre: 402 or equivalent.

611-612 CONTEMPORARY JAPANESE LITERATURE (3-3) Yr.

Literary movements and representative works since 1868. Pre: 402, 461 or equivalent.

614 (613-614) EDO LITERATURE (3) II

Reading and critical analysis of prose literature of Edo Period. Pre: 464 or consent of instructor. May be repeated for credit.

615 (615-616) MEDIEVAL JAPANESE LITERATURE (3) I

Reading and critical analysis of prose literature of Kamakura and Muromachi periods. Pre: 464 or consent of instructor. May be repeated for credit.

616 (615-616) CLASSICAL JAPANESE LITERATURE (3) II

Reading and critical analysis of Heian Period prose literature. Pre: 464 or consent of instructor. May be repeated for credit.

621-622 HISTORY OF JAPANESE LITERARY CRITICISM (3-3) Yr.

Survey of Japanese literary criticism from ancient times to 20th century. Pre: consent of instructor.

623 JAPANESE FOLKLORE (3) I

Investigation of folk beliefs and customs, particularly as manifested in traditional literature and narrative literature. Pre: 361, 402 or equivalent.

631-632 HISTORY OF THE JAPANESE LANGUAGE (3-3) Yr.

Study of change and growth of Japanese language from ancient to modern periods. Pre: 452 or equivalent.

641-642 CONTRASTIVE STUDY OF JAPANESE AND ENGLISH STRUCTURE (3-3) Yr.

Study of similarities and differences between English and Japanese structures: phonology, morphology, syntax. Pre: 452 or equivalent.

643-644 METHODOLOGY IN TEACHING OF JAPANESE AS A SECOND LANGUAGE (3-3) Yr.

Identification and analysis of problems in language learning and teaching. Practice in preparing and presenting lessons with materials based on comparative linguistic analysis, using audiolingual approach. Teaching materials, teaching aids and test construction. Pre: 452 or equivalent.

690 (694) JAPANESE BIBLIOGRAPHY (3) I, II

Advanced studies in historical survey of bibliographic material. Research methods. Pre: 490 or equivalent.

750 RESEARCH SEMINAR IN JAPANESE (3) I, II

(1) Language, (2) literature, (3) teaching methods. Pre: consent of instructor. May be repeated.

800 THESIS RESEARCH (arr.) I, II

Consent of instructor.

Korean (Kor)

101-102 ELEMENTARY KOREAN (3-3) Yr.

Development of listening, speaking, reading, writing. Structural points introduced inductively. Meets 1 hour daily, Monday through Friday; 4 out of 5 hours devoted to directed drill and practice sessions. Daily laboratory work.

201-202 (161-162) INTERMEDIATE KOREAN (4-4) Yr.

Continuation of 101-102. After completion, student should be proficient in using major sentence patterns. Meets 1 hour daily, Monday through Friday; 4 out of 5 hours devoted to directed drill and practice sessions. Daily laboratory work. Pre: 102 or equivalent.

301-302 (211-212) THIRD-LEVEL KOREAN (3-3) Yr.

Advanced conversation, reading, writing. Additional Chinese characters. Pre: 202 or equivalent.

361 (401-402) KOREAN LITERATURE IN TRANSLATION—POETRY (3) I

Historical survey, with emphasis on analysis and comparisons with Chinese, Japanese, Western poetry. Knowledge of Korean not required. Pre: two semesters of literature in English department.

362 (401-402) KOREAN LITERATURE IN TRANSLATION—PROSE (3) II

Historical survey, with emphasis on analysis and comparisons with Chinese, Japanese, Western literature. Knowledge of Korean not required. Pre: two semesters of literature in English department.

401-402 (417-418) FOURTH-LEVEL KOREAN (3-3) Yr.

Introduction to classical and contemporary literary styles. Pre: 302 or equivalent.

461-462 (491-492) CONTEMPORARY KOREAN LITERATURE (3-3) Yr.

Detailed study of modern verse and prose in Korea, with emphasis on different movements and schools. Pre: 302 or equivalent.

490 (493) REFERENCE MATERIALS FOR KOREAN STUDIES (3) I

Basic reference and bibliographic materials for Korean studies. Pre: 302 or equivalent.

495 (499) ADVANCED STUDY AND SENIOR ESSAY (2) I, II

Directed research in an area of Korean literature, linguistics, or dialects. Paper required. Pre: 402 or equivalent.

694 REFERENCE MATERIALS FOR KOREAN STUDIES (3) II

Basic reference and bibliographic materials for research and use in Korean studies. Pre: 402 or equivalent.

750 RESEARCH SEMINAR IN KOREAN (3) I, II

Specialization in (1) language, and (2) literature. Pre: consent of instructor. May be repeated.

Sanskrit (Sansk)

351-352 (101-102) INTRODUCTION TO SANSKRIT (3-3) Yr.

Introduction to Sanskrit grammar, and reading of classical texts. Pre: consent of instructor.

461-462 (151-152) READINGS IN SANSKRIT CLASSICAL LITERATURE (3-3) Yr.

Continuation of 352. Reading of classical texts with grammar review. Pre: 352 or equivalent.

661-662 (211-212) ADVANCED READINGS IN SANSKRIT LITERATURE (3-3) Yr.

Reading of Vedic and advanced classical texts. Pre: 462 or equivalent.

Tagalog (Tag)

103 ACCELERATED ELEMENTARY TAGALOG (6) I

Development of listening, speaking, reading, writing. Structural points introduced inductively. Meets 2 hours daily, Monday through Friday. 8 out of 10 hours devoted to directed drill and practice. Daily laboratory work.

204 ACCELERATED INTERMEDIATE TAGALOG (6) II

Continuation of 103. Meets 2 hours daily, Monday through Friday. 8 out of 10 hours devoted to directed drill and practice. Daily laboratory work. Pre: 103 or equivalent.

Thai (Thai)

103 ACCELERATED ELEMENTARY THAI (6) I

Development of listening, speaking, reading, writing. Structural points introduced inductively. Meets 2 hours daily, Monday through Friday. 8 out of 10 hours devoted to directed drill and practice. Daily laboratory work.

204 ACCELERATED INTERMEDIATE THAI (6) II

Continuation of 103. Meets 2 hours daily, Monday through Friday. 8 out of 10 hours devoted to directed drill and practice. Daily laboratory work. Pre: 103 or equivalent.

303 ACCELERATED THIRD-LEVEL THAI (6) I

Continuation of 204. Meets 2 hours daily, Monday through Friday. 5 out of 10 hours devoted to directed drill and practice. Study of modern written texts. Laboratory work. Pre: 204 or equivalent.

404 ACCELERATED FOURTH-LEVEL THAI (6) II

Continuation of 303. Meets 6 hours a week. Study of advanced written texts. Advanced conversation. Pre: 303 or equivalent.

Asian Studies (Asian)

Professors FRYER, KORNHAUSER, NUNN, WIENS; Associate Professor ARTOLA; Assistant Professors KANG, POND (Acting); Instructor JENNER
Professors BOWERS, SAKAI, VAN NIEL

301 CIVILIZATIONS OF THE EAST (3) I

Kornhauser

Physical environment and cultural traditions of East, Southeast, South Asia, before major Western contact.

302 CIVILIZATIONS OF THE EAST (3) II

Kornhauser

Response of Asian culture to the West; movements of nationalism and modernization; Asia's role today.

341 TECHNICS OF JAPANESE CIVILIZATION (3) II

Kornhauser

Consideration of man's interaction with his environment; interplay of tradition and change, evolution of social patterns, present economic organization. Pre: consent of instructor.

421 (521) CIVILIZATIONS OF THE EAST: JAPAN, CHINA, AND KOREA (3) I

Staff

Physical environment and cultural traditions of East Asia.

422 (522) CIVILIZATIONS OF THE EAST: JAPAN, CHINA, AND KOREA (3) II

Staff

Contemporary East Asia with emphasis on nationalism, economic development, socio-cultural change.

423 (523) CIVILIZATIONS OF THE EAST: SOUTHEAST ASIA (3) I

Fryer, Pond

Physical environment and cultural traditions of Southeast Asia.

424 (524) CIVILIZATIONS OF THE EAST: SOUTHEAST ASIA (3) II

Fryer, Pond

Contemporary Southeast Asia with emphasis on nationalism, economic development, socio-cultural change.

425 (525) CIVILIZATIONS OF THE EAST: SOUTH ASIA (3) I

Artola

Analysis of disruptive and unifying factors in traditional Indian society, including race, religion, class, caste, language; interdisciplinary inquiry into economic development.

426 (526) CIVILIZATIONS OF THE EAST: SOUTH ASIA (3) II

Artola

Indian thought: great and little traditions; emergent trends in South Asia.

798 SEMINAR IN ASIAN STUDIES (3) I, II

Staff

(1) East Asia, (2) Southeast Asia, (3) South Asia. Pre: consent of instructor.

799 (699) DIRECTED RESEARCH (arr.) I, II

Staff

Individual problems and research. Pre: consent of instructor.

800 THESIS RESEARCH (arr.) I, II

Staff

Biology (Biol)

Assistant Professors: B. Z. SIEGEL, C. W. SMITH

220 (120) BIOLOGY (5) I (3 L, 2 lb)

Fundamentals of biology. Devoted to study of microorganisms, lower and higher plants and animals with emphasis on their comparative physiology, development, behavior, evolution, systematics. Pre: concurrent registration in or completion of Chem 243, 245 and Math 205.

250 (150) BIOLOGY (4) II (3 L, 1 lb)

B. Siegel

Cell structure and function. Patterns and operation of biologic organization through which molecules, organelles, cells, and tissues give living organisms their basic properties. Pre: 220 or consent of instructor and organic chemistry.

401 MOLECULAR BASIS OF CELL FUNCTION (2) II (2 L)

Gibbons

Examination of relationship between structure and function at macromolecular level. Topics range from the properties of individual proteins to the organization of highly integrated molecular systems within cells. Pre: 250, Chem 243-246 or consent of instructor.

440 BIOLOGY-ENVIRONMENTAL AND SPACE BIOLOGY I (2) I (2 L)

S. Siegel

Conditions for organic existence and suitability of terrestrial and extraterrestrial environments; experimental simulation of extreme environments; concepts of space biology and human aspects of environmental biology. Pre: 220 and 250 or equivalent; Chem 243-246; and consent of instructor.

Botany (Bot)

Professors BAKER, COOIL, DOTY, KEFFORD, S. SIEGEL, A. SMITH; Associate Professors FRIEND, LAMOUREUX, PUTMAN; Assistant Professors BRISTOL, LLOYD, MUELLER-DOMBOIS, C. SMITH, CHRISTENSEN; Instructor GAY

101 GENERAL BOTANY (4) I, II (3 L, 1 lb)

Kefford, Gay

Basic principles of plant biology. This course and Zool 101 comprise introduction to biology. With permission of instructor, students with previous biological training may proceed to higher level course.

105 ETHNOBOTANY (3) I

Staff

Plants and their influence upon culture of Hawaii and Pacific; uses of cultivated and wild plants.

160 IDENTIFICATION OF TROPICAL PLANTS (2) II

Lloyd

Non-technical course in identification of common plants of tropics. Not open to students who have had 360; not credited for botany major.

201 THE PLANT KINGDOM (4) II (2 L, 2 lb)

Baker

Comparative studies of structure and physiology of plants with reference to distribution and classification. Pre: 101.

353 ECOLOGY I (3) I (2 L, 2 lb)

Christensen

Plant-environmental relations (autecology) with emphasis on tropical conditions. Pre: 201 or consent of instructor. Recommended: 360.

360 TAXONOMY OF VASCULAR PLANTS I (3) I (1 L, 2 lb)

Lloyd

Identification and classification of vascular plants. This course provides introduction to systematic botany. Pre: 101.

399 BOTANICAL PROBLEMS (arr.) I, II

Staff

Limited to senior majors with 2.7 grade-point ratio, or 3.0 grade-point ratio in botany. May be repeated.

- 410 PLANT ANATOMY (3) I (2 L, 1 Lb)** **Lamoureux**
Structure of vascular plants; origin and differentiation of tissues; relation of structure to function. Pre: 201 or equivalent. Recommended: 470.
- 412 MICROTECHNIQUE (3) I, II (2 L, 1 Lb)** **Lamoureux**
Preparation of plant materials for histological and cytological study, photomicrography. Pre: 410 or consent of instructor.
- 430 MYCOLOGY (3) I (1 L, 2 Lb)** **Baker**
Morphology, physiology, ecology of fungi; their identification. Pre: 201 or consent of instructor.
- 436 MEDICAL MYCOLOGY (3) II (1 L, 2 Lb)** **Baker**
Diagnostic morphology and cultural characteristics of fungi pathogenic to man. Pre: 430 or Micro 351.
- 440 ENVIRONMENTAL AND SPACE BIOLOGY I (2) I (2 L)** **S. Siegel**
Conditions for organic existence and suitability of terrestrial and extraterrestrial environments; experimental simulation of extreme environments; concepts of space biology and human aspects of environmental biology. Pre: Biol 220, Biol 250, or equivalent, plus Chem 241. (Alt. yrs.; offered 1968-69.)
- 450 NATURAL HISTORY OF THE HAWAIIAN ISLANDS (2) II (2 L-Lb)** **Lamoureux, Gosline**
Geography, geology, climatology, biotic environment of Pacific Basin and Hawaiian Islands; evolution of terrestrial biota of oceanic islands. Pre: 101 or Zool 101. (Identical with Zool 450.)
- 454 ECOLOGY II (4) II (2 L, 2 Lb)** **Christensen**
Community ecology (synecology), ecological land classification, experimental ecology. Field trips to develop local examples. Pre: 101 or consent of instructor. Recommended: 360.
- 461 TAXONOMY OF VASCULAR PLANTS II (3) II (1 L, 2 Lb)** **Lloyd**
Identification and classification of vascular plants. Field studies and herbarium methods. Pre: 360.
- 470 PRINCIPLES OF PLANT PHYSIOLOGY (4) II (3 L, 1 Lb)** **Friend**
Introduction to plant physiology. Pre: 201, Chem 114, 116, Phys 160, or equivalents with consent of instructor. Recommended: 410.
- 480 PHYCOLOGY (3) II (1 L, 2 Lb)** **Staff**
Morphology, taxonomy, ecology of algae. Identification of common algae. Pre: 101 or consent of instructor.
- 610 BOTANICAL SEMINAR (1) I, II** **Staff**
Study and discussion of significant topics and problems in botany.
- 612 ADVANCED BOTANICAL PROBLEMS (arr.) I, II** **Staff**
Investigation of any botanical problem; reading and laboratory work. Pre: consent of instructor. May be repeated.
- 615 MORPHOLOGY SEMINAR (2) II** **Lamoureux**
Recent developments in morphology, anatomy, cytology. Pre: consent of instructor.
- 618 (418) CYTOLOGY (3) I (2 L, 1 Lb)** **Sagawa**
Structure and function of cell components. Pre: Biol 250 or equivalent or consent of instructor.
- 620 PRIMITIVE ANGIOSPERMS AND PHYTOGEOGRAPHIC THEORY**
(4) I (3 L, 1 Lb) **Smith**
Survey of evolutionary history of flowering plants and significance of their geographic distribution. Pre: 101 and consent of instructor. Recommended: 201, 360, and 410.

- 631 MARINE PHYTOPLANKTON (3) I (2 L, 1 Lb)** **Doty**
Identification, systematic morphology, autecology distribution and abundance. Pre: graduate standing or permission of instructor. (Identical with Ocean 631.)
- 640 ENVIRONMENTAL AND SPACE BIOLOGY II (2) I (1 L, 1 Lb)** **Siegel**
Orientation towards experimentation with biological systems in extreme environments and individual investigations with such systems. Pre: graduate standing and consent of instructor. (Alt. yrs.; not offered 1968-69.)
- 650 ENVIRONMENTAL PHYTOGEOGRAPHY (2) II** **Christenson**
Plant geography and general ecology with emphasis on tropical areas. Pre: 101 or consent of instructor. Recommended: 360.
- 651 DYNAMICS OF MARINE PRODUCTIVITY (3) II (2 L, 1 Lb)** **Doty**
Primary productivity, its variation and methods of assessment; conversion of energy in food chains, ecosystems; factors affecting productivity. Pre: graduate standing or permission of instructor. (Identical with Ocean 651.)
- 662 ADVANCED TAXONOMY (3) I (2 L, 1 Lb)** **Lloyd**
Modern techniques in plant taxonomy with emphasis on methods utilizing cytogenetics, anatomy, morphology, and physiology. Pre: consent of instructor. (Alt. yrs.; offered 1968-69.)
- 665 NOMENCLATURE SEMINAR (2) II** **Doty**
Code of botanical nomenclature and its application, determination of correct scientific names. Pre: 360. (Alt. yrs.; not offered 1968-69.)
- 670 (670-671) INORGANIC PHYSIOLOGY AND WATER RELATIONS (3) I (3 L)** **Coeil**
Plants in relation to water and nutrient elements: absorption and translocation of water and solutes in plants. Pre: 470, Chem 244, Phys 161.
- 671 (670-671) ENERGETICS AND BIOSYNTHESIS IN THE PLANT KINGDOM (3) II (3 L)** **Siegel**
Comparative and synthetic aspects of natural products in plant kingdom, their distribution, bioenergetic relationships and metabolism. Pre: Chem 244, Biol 250 or equivalent.
- 672 TECHNIQUES IN PHYSIOLOGY (2) I (2 Lb)** **Staff**
Nutrient absorption and composition; osmotic relations. Pre: 470, Chem 244, Phys 161, consent of instructor.
- 673 TECHNIQUES IN PHYSIOLOGY-BIOCHEMISTRY (2) II (2 Lb)** **Putman**
Determining substances of physiological significance in plant materials. Pre: 672, consent of instructor.
- 675 PHYSIOLOGY SEMINAR (1) I, II** **Staff**
Significant topics and problems in physiology. May be repeated. Pre: consent of instructor.
- 681 PHYCOLOGY-CHLOROPHYTA (2) I (2 Lb)** **Doty**
Systematics, functions and utilization considered at advanced level. Pre: consent of instructor. (Alt. yrs.; offered 1968-69.)
- 682 PHYCOLOGY-PHYTOPLANKTON (2) II (2 Lb)** **Doty**
Systematics, functions and utilization considered at advanced level. Pre: consent of instructor. (Alt. yrs.; offered 1968-69.)
- 683 PHYCOLOGY-MYXOPHYTA AND PHAEOPHYTA (2) I (2 Lb)** **Doty**
Systematics, functions and utilization considered at advanced level. Pre: consent of instructor. (Alt. yrs.; not offered 1968-69.)
- 684 PHYCOLOGY-RHODOPHYTA (2) II (2 Lb)** **Doty**
Systematics, functions and utilization considered at advanced level. Pre: consent of instructor. (Alt. yrs.; not offered 1968-69.)

- 699 DIRECTED RESEARCH (arr.) I, II** **Staff**
Pre: candidacy for M.S. degree; consent of instructor.
- 799 DIRECTED RESEARCH (arr.) I, II** **Staff**
Pre: candidacy for Ph.D. degree; consent of instructor.
- 800 THESIS RESEARCH (arr.) I, II**

Chemistry (Chem)

Professors **INSKEEP, NAUGHTON, SCHEUER, ZEITLIN**; Associate Professors **IHRIG, KIEFER, LARSON, SCHALEGER, WAUGH**; Assistant Professors **ANDERMANN, BOPP, DUCE, GILJE, HUBBARD, MANN, McDONALD, MOORE, SEFF, WRATHALL**

- 113-114 GENERAL CHEMISTRY (3-3) Yr. (3 L)** **Staff**
Fundamental laws, principles, methods. Pre: high school algebra and plane geometry.
- 115 GENERAL CHEMISTRY LABORATORY (1) I (1 Lb)** **Staff**
Experiments illustrating fundamental principles of chemistry. Pre: credit or registration in 113.
- 116 GENERAL CHEMISTRY LABORATORY (1) II (1 Lb)** **Staff**
Continuation of 115. Pre: 115, credit or registration in 114.
- 117 PRINCIPLES OF CHEMISTRY (4) I, II (4 L)** **Staff**
Principle, theories, elementary analytical methods. Pre: high school chemistry, credit or registration in 118, and Math 205.
- 118 PRINCIPLES OF CHEMISTRY LABORATORY (1) I, II (1 Lb)** **Staff**
Principles, techniques, elementary analytical methods. Pre: credit or registration in 117.
- 133 (331) ELEMENTARY QUANTITATIVE ANALYSIS (2) I, II (2 L)** **Staff**
Beginning gravimetric and volumetric analysis. Pre: 114, 116 or 117, 118.
- 134 ELEMENTARY QUANTITATIVE ANALYSIS LABORATORY (2) I, II (2 Lb)** **Staff**
Gravimetric and volumetric analysis. Pre: credit or registration in 133.
- 141 ELEMENTS OF ORGANIC CHEMISTRY (3) II (3 L)** **Staff**
Primarily for students in dental hygiene program. Pre: 113-115. Note: those who have credit in 114 or 117 must enroll in 241.
- 142 ELEMENTS OF ORGANIC CHEMISTRY LABORATORY (1) II (1 Lb)** **Staff**
Laboratory techniques. Pre: 115 and credit or registration in 141.
- 241 SURVEY OF ORGANIC CHEMISTRY (3) II (3 L)** **Staff**
Structure, nomenclature, properties, reactions of organic compounds emphasizing those of practical importance in related fields. Pre: 114, 116 or 117, 118.
- 242 SURVEY OF ORGANIC CHEMISTRY LABORATORY (1) II (1 Lb)** **Staff**
Techniques of preparation, purification, identification of organic compounds. Pre: 116 or 118 and credit or registration in 241.
- 243-244 (143-144) ORGANIC CHEMISTRY (3-3) Yr. (3 L)** **Schaleger**
Carbon compounds. Topics include molecular structure, stereochemistry, nuclear magnetic resonance, reactions and methods of preparation of principal classes of organic compounds. Pre: 114, 116 or 117, 118.
- 245 ORGANIC CHEMISTRY LABORATORY (1) I (1 4-hr. Lb)** **Staff**
Techniques of organic chemistry. Synthesis and qualitative analysis. Applications of spectroscopy. Chromatography. Pre: credit or registration in 243.

- 246 ORGANIC CHEMISTRY LABORATORY (1) II (1 4-hr. Lb)** Staff
Continuation of 245. Pre: 245, credit or registration in 244.
- 351-352 (451-452) PHYSICAL CHEMISTRY (4-4) Yr. (3 L, 1 Lb)** Staff
Principles and theories; physico-chemical procedures. Pre: 114, 116 or 117, 118, Math 206, Phys 272-273.
- 394-395 SENIOR HONORS THESIS (2-2) Yr.** Staff
Research problem under individual faculty supervision. Required for graduation with honors in departmental honors program.
- 399 DIRECTED READING OR RESEARCH (arr.) I, II** Staff
Limited to majors with 2.7 grade-point ratio or 3.0 grade-point ratio in chemistry. May be repeated.
- 422 (522) INTERMEDIATE INORGANIC CHEMISTRY (3) II** Waugh
Classification, description, fundamental theory. Pre: credit or registration in 352.
- 424 (524) PREPARATIVE INORGANIC CHEMISTRY (3) II (1 L, 2 Lb)** Staff
Preparation, properties, selected reactions of representative inorganic compounds. Pre: credit or registration in 422.
- 432 INTERMEDIATE QUANTITATIVE ANALYSIS (4) II (2 L, 2 Lb)** Staff
Introductory instrumental analysis. Pre: 134, credit or registration in 352.
- 444 (544) QUALITATIVE ORGANIC ANALYSIS (4) I (2 L, 2 Lb)** Scheuer
Identification and characterization of organic compounds and mixtures. Pre: 134, 246, credit or registration in 352.
- 445 INTERMEDIATE ORGANIC CHEMISTRY (4) II (2 L, 2 Lb)** Larson
Modern synthetic methods. Pre: 246.
- 621 INTRODUCTORY QUANTUM CHEMISTRY (3) I** Waugh
Principles of quantum mechanics with application to atoms and molecules. Molecular quantum mechanical descriptions of the chemical bond. Pre: 352.
- 622 ADVANCED INORGANIC CHEMISTRY I (3) II** Gilje
Principles of modern inorganic chemistry. Pre: 621.
- 623 ADVANCED INORGANIC CHEMISTRY II (3) I** Wrathall
Principles of modern inorganic chemistry. Pre: 621.
- 631 INSTRUMENTAL METHODS OF ANALYSIS (4) I (2 L, 2 Lb)** Hubbard
Theory, instrumentation, applications. Pre: 432.
- 632 ELECTROANALYTICAL CHEMISTRY (3) II** Hubbard
Advanced electroanalytical determinations, theory, instrumentation. Pre: 432.
- 633 INTRODUCTION TO SPECTROSCOPY (3) II** Andermann
Spectrochemical determinations, theory, instrumentation. Pre: 621, 631.
- 641-642 ADVANCED ORGANIC CHEMISTRY (3-3) Yr.** Staff
Structure, stereochemistry, reaction mechanisms. Pre: 244, 352.
- 651 INTERMEDIATE PHYSICAL CHEMISTRY I (3) I** McDonald
Chemical thermodynamics. Pre: 352.
- 652 INTERMEDIATE PHYSICAL CHEMISTRY II (3) II** Ihrig
Chemical reaction kinetics. Pre: 651.
- 655 RADIOCHEMISTRY AND NUCLEAR REACTIONS (3) I** Duce
Nuclear models, radioactive decay processes, interaction of radiation with matter, nuclear phenomena. Pre: 352.
- 656 RADIOCHEMICAL TECHNIQUES (1) I (1 Lb)** Duce
Modern radiochemical practice; use of isotopes as traces and in activation analyses. Pre: credit or registration in 655.

- 691-692 SEMINAR (1-1) Yr.** **Staff**
Current topics in chemistry. May be repeated.
- 721-722 SPECIAL TOPICS OF INORGANIC CHEMISTRY (arr.) I, II** **Staff**
Theory and application of modern inorganic chemistry. Pre: consent of instructor.
May be repeated.
- 731-732 SPECIAL TOPICS IN ANALYTICAL CHEMISTRY (arr.) I, II** **Staff**
Theory and application of modern analytical chemistry. Pre: consent of instructor.
May be repeated.
- 741-742 SPECIAL TOPICS OF ORGANIC CHEMISTRY (arr.) I, II** **Staff**
Theory and application of modern organic chemistry. Pre: consent of instructor.
May be repeated.
- 744 ORGANIC APPLICATIONS OF SPECTROSCOPY (3) II** **Staff**
Interpretation of IR, UV, NMR and mass spectra of organic compounds. Pre: 444,
641.
- 751-752 SPECIAL TOPICS OF PHYSICAL CHEMISTRY (arr.) I, II** **Staff**
Theory and application of modern physical chemistry. Pre: consent of instructor.
May be repeated.
- 753 QUANTUM CHEMISTRY (3) I** **Mann**
Review of basic principles of quantum mechanics, with emphasis on matrix representation of operators important to molecular structure theory. Application of the formalism to modern theories of chemical bond. Pre: 621.
- 756 STATISTICAL MECHANICS (3) II** **Staff**
Principles of statistical mechanics and statistical thermodynamics, with applications to chemical systems. Pre: 621, 651, suggested Math 232.
- 799 (699) DIRECTED RESEARCH (arr.) I, II** **Staff**
Pre: consent of department chairman. May be repeated.
- 800 DIRECTED RESEARCH (arr.) I, II** **Staff**
Pre: candidacy for M.S. or Ph.D. degree; consent of thesis chairman.

Drama and Theatre (Drama)

Senior Professor ERNST; Professors BRANDON, TRAPIDO; Associate Professors LANGHANS, R. MASON, ORTOLANI; Assistant Professors MACQUEEN, WOLZ; Lecturer SASA

160 or 260 and 240 are prerequisites to all courses in direction, design, stagecraft, and lighting.

- 160 (140) INTRODUCTION TO DRAMA AND THEATRE (3) I, II**
Representative plays studied as illustrative of changing forms in the theatre and dramatic literature.
- 240 (151) BASIC STAGECRAFT AND STAGE LIGHTING (3) II** **Trapido**
Introduction to theory and practice of stagecraft and lighting.
- 260 (150) DRAMATIC PRODUCTION (3) I** **Trapido**
Introduction to process of converting the play into the performance.
- 299 (200) THEATRE PRACTICE (3) I, II**
Supervised work in one or two areas: stagecraft, lighting, costuming, make-up. Term paper required. May be repeated.

- 321-322 (420-421) ACTING (3-3) Yr.** **MacQueen**
Individual exercises and group rehearsals. In addition to course work, student must try out for major productions and must play at least one role in public performance.
- 330 (430) DIRECTION (3) I** **MacQueen**
Readings, reports, discussion of theory and practice of stage direction.
- 340 (440) ADVANCED STAGECRAFT AND STAGE LIGHTING (3) I**
Principles applied, techniques used, in contemporary staging and lighting.
- 350 (435) DESIGN IN THE THEATRE (3) I** **Mason**
Principles of design as related to scenery, costume, lighting for the stage.
- 352 (445) COSTUME FOR THE STAGE (3) I** **Mason**
Survey of historical costume, with special emphasis on translation of historical styles into theatrical form.
- 370 (410) CREATIVE DRAMATICS (3) I, II**
Intensive study of dramatic activities for children and young people. Designed for teachers, group workers, recreation majors, others dealing with children. May be repeated.
- 372 (300) DRAMA IN PERFORMANCE (3) II**
Study of plays as scripts for performance.
- 381-382 (424-425) DANCE TECHNIQUES (3-3) Yr.** **Wolz**
Training in modern dance and stage movement to develop flexibility, control, rhythm, expressiveness. Pre: consent of instructor.
- 384 (427) BALLET TECHNIQUE (3) I, II** **Sasa**
Training in standard vocabulary of movement of classical ballet. May be repeated.
- 388 (428) DANCE COMPOSITION (3) I, II** **Wolz**
Study of techniques and materials used in composing dances. May be repeated.
- 410 (450) THEATRE MANAGEMENT (3) II** **MacQueen**
Business organization, management, public relations as practiced in professional, university, community, secondary school theatres.
- 461-462 (550-551) HISTORY OF THE THEATRE (3-3) Yr.** **Ortolani**
Survey of development of the theatre from ancient times to present.
- 464 (540) ORIENTAL DRAMA AND THEATRE (3) I** **Ernst**
Principal forms of Oriental drama and manner of production in the theatre. Pre: consent of instructor.
- 468 (560) DANCE HISTORY (3) I** **Wolz**
Survey of styles of dance in the West from ancient times to 20th century.
- 474 (411) CHILDREN'S THEATRE (3) I, II**
Theories and principles of formal theatre for children. Study of selection, direction, production of plays. Pre: 240 and 260.
- 476 (405) PUPPETRY (3) I, II**
Survey of history and scope of puppetry. Construction and presentation of puppets for adult and child audiences. May be repeated.
- 490 (415) PLAYWRITING (3) I** **Langhans**
One-act plays; practice in writing in dramatic form; possibility of production. May be repeated. Pre: 3.0 grade point in English composition.
- 492 (416) ADVANCED PLAYWRITING (3) II** **Langhans**
Full-length plays and experimental writing in dramatic form. Pre: 490 or equivalent.
- 499 (399) DIRECTED WORK (arr.) I, II**
Limited to senior majors with 2.7 grade-point ratio, or 3.0 grade-point ratio in drama and theatre.

- 610 (710) SEMINAR IN THEATRE RESEARCH (3) I**
Bibliography and research methods; fundamentals of thesis and dissertation writing. Required of all graduate students.
- 620 ADVANCED ACTING TECHNIQUES (3) II** **MacQueen**
Individual and group exercises in stage movement and line reading. Research and reports on styles of acting. May be repeated.
- 630 PROBLEMS IN DIRECTION (3) II** **MacQueen**
Directorial analysis of three plays of different styles and periods; exercises; preparation of prompt books. Pre: 330.
- 640 PROBLEMS IN STAGECRAFT AND STAGE LIGHTING (3) II** **Trapido**
Special topics in staging and lighting of plays, and in planning and use of various types of modern theatres.
- 650 (635) ADVANCED DESIGN (3) II** **Mason**
Advanced study, analytical and creative, of visual aspects of dramatic art. Pre: 350.
- 660 THEORIES OF THE THEATRE (3) I** **Ortolani**
Theories of production, from Aristotle to Brecht.
- 662 (720) SEMINAR IN DRAMA AND THEATRE (3) II**
Special topics in Western theatre.
- 664 (750) SEMINAR IN ORIENTAL THEATRE (3) II** **Ortolani**
Special topics in drama and theatre of Orient. Pre: consent of instructor.
- 699 (700) ADVANCED THEATRE PRACTICE (3) I, II**
Special projects in one or two areas: stagecraft, lighting, costuming, make-up. Term paper required. May be repeated.
- 730 SEMINAR IN DIRECTION (3) I** **MacQueen**
Organizational and artistic processes of the director. Pre: 630.
- 750 (735) SEMINAR IN DESIGN (3) I** **Mason**
Design projects emphasizing conversion of historic materials to use in the theatre. Pre: 650.
- 760 (770) SEMINAR IN AESTHETICS OF THE THEATRE (3) II** **Ernst**
Consideration of the theatre as an art form.
- 799 DIRECTED WORK (arr.) I, II** **Staff**
Reading or research in theatre theory or history; reading and practice in particular areas of dramatic production. Pre: consent of instructor.

Economics (Econ)

Professors GORTER, KAMINS, MANDEL, OSHIMA, WISE; Associate Professors CAMPBELL, COMOTINI, HUNG, MIKLIUS, NAYA; Assistant Professors ASHBY, CHAU, LIM, POLLACK, POND, PSACHOROPOULOS, YEH; Acting Assistant Professors ABUDU, GORDON, LEFTON, TAWIL; Lecturers MARK, TEMPLE

- 120 INTRODUCTION TO ECONOMICS (3) I, II** **Staff**
One-semester course for non-majors. Provides general understanding of functioning of economic systems, including various approaches to organization of production and allocation of resources, and of policies designed to achieve national economic goals.

121 ELEMENTARY STATISTICS (3) I, II**Staff**

Basic elements of statistics, with emphasis on application: graphic presentation, logarithmic scales, rates and ratios, time series analysis, index numbers, regression and correlation analysis.

150 PRINCIPLES OF ECONOMICS (3) I, II**Staff**

Analysis of functioning of economic systems with emphasis on forces determining levels and changes of national income and employment. Describes basic economic institutions, e.g., markets, money, banks, labor organizations, corporations.

151 PRINCIPLES OF ECONOMICS (3) I, II**Staff**

Analysis of how commodity and factor prices are determined. Discusses policies for efficient allocation of scarce resources. Required of all economics majors.

300 (302) INTERMEDIATE ECONOMIC THEORY: NATIONAL INCOME (3) I, II

Concepts; determination of income, employment, price levels; effects of fiscal, monetary, other policies. Pre: 150.

301 (300) INTERMEDIATE ECONOMIC THEORY: PRICE THEORY (3) I, II

Price determination and resource allocation under competition, monopoly, oligopoly, monopolistic competition. Theories of demand, cost, partial, general equilibrium. Pre: 151.

310 (499) ECONOMIC DEVELOPMENT (3) I

Study of characteristics of underdeveloped economies, theories of economic growth, strategies of economic development, and investment criteria. Pre: 150, 151 or consent of instructor.

340 (240) MONEY AND BANKING (3) I, II

Nature and role of money; development of national and international monetary standards; role of commercial banking and financial intermediaries; development and function of central banking. Pre: 150.

399 DIRECTED READING (arr.) I, II

Limited to senior majors with 2.7 grade-point ratio, or 3.0 grade-point ratio in economics, on recommendation of department chairman only.

400 GROWTH AND FLUCTUATIONS (3) II

Rigorous analysis of factors underlying economic growth and fluctuations in advanced countries and role of government in influencing economic activities. Studies various growth models and their implications. Pre: 300.

404 (304) HISTORY OF ECONOMIC THOUGHT (3) I

Survey of economic thought from Adam Smith to present with emphasis on theory of value and distribution. Pre: 300, 301.

405 (430) COMPARATIVE ECONOMIC SYSTEMS (3) I

Analysis of structure, institutions, operation, performance, growth of private enterprise, socialist, communist and mixed economies, with emphasis on U.S., U.S.S.R. and underdeveloped economies. Pre: 300, 301.

411 (416) ECONOMIC DEVELOPMENT OF EUROPE (3) I

Study of economic growth and changes in economic institutions of Europe since Industrial Revolution. Pre: 150, 151.

412 (417) ECONOMIC DEVELOPMENT OF U.S. (3) II

Emphasizes period since World War I. Consideration of changing patterns of investment, consumption and employment. Pre: 150, 151.

413 ECONOMIC DEVELOPMENT OF U.S.S.R. (3) II

Economic development of Soviet Russia, with emphasis on institutional changes after Revolution and on Soviet economic planning. Pre: 310 or consent of instructor.

414 ECONOMIC DEVELOPMENT OF JAPAN (3) II

Study of history and economic development of Japan from Meiji period to present; factors which contributed to take-off; structural changes since World War II. Pre: 310 or consent of instructor.

415 (410) ASIAN ECONOMIC DEVELOPMENT (3) I

Study of history and economic development of Asian nations other than Japan. Resources, population and income; savings, investment and consumption patterns. Role of government and private enterprise. Pre: 310 or consent of instructor.

420 MATHEMATICAL ECONOMICS (3) II

Review and application of mathematical techniques in economic analysis: differentiation, integration, differential equations, difference equations and linear programming. Pre: 300, 301, and Math 205 (calculus).

421 STATISTICAL METHODS IN ECONOMIC ANALYSIS (3) II

Probability and distribution theory, calculus of expectations, statistical inference, small sample methods, analysis of variance and regression, correlation analysis, time series analysis and index numbers. Pre: 121.

424 ECONOMETRICS (3) I

Review of matrix algebra and basic concepts of linear regression models, economic model building, errors in variables, systems of single and simultaneous equations and problems of autocorrelation, collinearity and identification. Pre: 421.

430 (290) LABOR ECONOMICS (3) I

Economic analysis applied to labor market; wages, hours, conditions of work, unemployment, etc. Pre: 150, 151.

440 MONETARY THEORY AND POLICY (3) I

Critical analysis of monetary theory and policy with special emphasis devoted to quantity theory, national income theory, and tools of central banking and debt management. Pre: 300, 340.

450 PUBLIC FINANCE (3) I

Considers governmental expenditures, revenues and debt, both descriptively and theoretically. Fiscal policy considered, as are budgeting and tax administration. Pre: 300, 301.

452 STATE AND LOCAL FINANCE (3) II

Intensive study of fiscal institutions, operations, and policy questions within state and local governments in U.S. Consideration of grant programs and other links with central government. Pre: 450.

459 CASE STUDIES IN PUBLIC FINANCE (3) I

Case studies in national, state and local finance. Pre: 450. (Not offered 1968-69.)

460 INTERNATIONAL TRADE THEORY (3) I

Theoretical, institutional and historical aspects of international economic relations considered, including foreign exchange rates, balance of payments adjustment, tariffs, quotas, trading blocs. Pre: 300, 301.

461 INTERNATIONAL FINANCE (3) II

Institutional and theoretical aspects of international financing: balance of payments, exchange rates, capital movements, and multilateral equilibrium in world money market. Pre: 300, 460.

462 INTERNATIONAL ECONOMIC POLICY (3) I

Problem areas of contemporary interest, such as causes and effects of recent U.S. gold losses, drive for trade liberalization, impact of Common Market, etc. Pre: 460.

470 INDUSTRIAL ORGANIZATION AND PUBLIC CONTROL OF BUSINESS (3) I

Organization and structure of American industries and markets. Competitive behavior, pricing policies, market performance. Social control of business through antitrust and other government regulation. Pre: 300, 301.

480 TRANSPORTATION AND PUBLIC UTILITIES (3) I

Economic characteristics of transportation and public utility industries. Analysis of objectives, problems and effects of government regulation of these industries. Pre: 300, 301. (Not offered 1968-69.)

490 (455) LOCATION THEORY AND REGIONAL ANALYSIS (3) I

Location theories concerned with agricultural, manufacturing and tertiary activities and with urban systems. Basic methods of locational analysis. Paths towards application in regional economic planning. Identical to Geog 420. Pre: 300, 301.

492 REGIONAL ECONOMIC DEVELOPMENT (3) II

Sources of regional economic growth and of regional development planning. Emphasis on Hawaiian economy and experience. Pre: 310 or consent of instructor.

600 (602) MACROECONOMIC THEORY (3) I

Keynesian and post-Keynesian theories of aggregative economics with special attention to factors determining levels of employment, prices, real income. Stabilization policies. Pre: 300.

601 (600) MICROECONOMIC THEORY (3) I

Rigorous analysis of consumer's choice, pricing of products and factors of production under competitive conditions, partial and general equilibrium, monopoly and imperfect competition, risk and uncertainty, and capital theory. Pre: 301.

602 (603) ECONOMIC GROWTH AND FLUCTUATIONS (3) II

Aggregate dynamic models of growth and fluctuations: current literature including neo-classical and neo-Keynesian models of economic growth, dynamic Leontief models and activity analysis. Pre: 600.

603 (601) SELECTED TOPICS IN MICROECONOMIC THEORY (3) II

Discussion of selected topics in microeconomic theory, e.g. economics of household; firm and industry; market structure; income distribution; welfare economics; linear programming; decision theory; organization theory. Pre: 601.

604 HISTORY OF ECONOMIC THOUGHT (3) I

Development of economic theories, including classical economics, marginal utility theory, socialism, neo-classical theory, welfare economics, Keynesian and post-Keynesian systems. Pre: 404, or consent of instructor.

606 (626) NATIONAL INCOME ACCOUNTS (3) II

Theory underlying construction of national economic accounts: methods of estimation of entries in accounts; uses of national accounting statistics. Pre: consent of instructor.

610 (670) ECONOMIC DEVELOPMENT I (3) I

Theoretical analysis of factors underlying economic development with reference to underdeveloped nations. Survey of theoretical literature on economic development, dealing with causes of underdevelopment and development, alternative development models and their policy implications. Pre: consent of instructor.

611 ECONOMIC DEVELOPMENT II (3) II

Design of policy measures to accelerate economic development in underdeveloped countries (e.g. investment criteria). Various techniques of development planning (including input-output analysis, linear programming and macroeconomic models) applied to problems of economic development. Pre: 610.

614 (671) ECONOMIC DEVELOPMENT OF JAPAN (3) I

Analysis of growth from Meiji period to present. Problems of population change, capital formation, income distribution, industrial structure. Pre: 610 or consent of instructor.

616 (672) ECONOMIC DEVELOPMENT OF CHINA (3) II

Analysis of development from Ch'ing period to present. Special focus on problems of industrialization, economic growth and structural change since 1949. Pre: 610 or consent of instructor.

618 ECONOMIC DEVELOPMENT OF SELECTED ASIAN NATIONS (3) I, II

Development patterns of selected nations and differences in economic institutions considered. Policy measures, especially planning schema and their execution, reviewed. (Nations covered may include Korea, Taiwan, Philippines, Indonesia, other S.E. Asian countries, selection to depend on instructor.) Pre: 610.

621 (620) MATHEMATICAL ECONOMICS (3) I

Application of mathematical methods to economic theory. Partial differentiation, integral calculus, series and expansion, vectors and matrices, determinants, systems of difference and differential equations, stability conditions, inter-industry relations, programming of activities and allocation of resources, aggregation problem, elementary theory of games. Pre: 420 or consent of instructor.

624 ECONOMETRICS I (3) I

Probability theory and statistical inference for time series analysis. Construction and testing of econometric models. Pre: 424 or consent of instructor.

626 ECONOMETRICS II (3) II

Advanced topics in time series analysis. Simulation models; forecasting and development planning. Pre: 624.

627 ECONOMIC PROGRAMMING (3) II

Application of input-output analysis, linear programming, and macro-economic models to problems of economic development and planning. Pre: 420 or consent of instructor.

640 MONETARY THEORY (3) II

Analysis of selected problems in monetary economics, with emphasis on monetary and banking policy. Pre: 300, 340.

650 THEORY OF PUBLIC FINANCE (3) II

Considers role of public finance in national economy. Examines operation of fiscal devices available to policy makers. Pre: 301, 450.

660 INTERNATIONAL TRADE THEORY (3) I

Modern development in national income theory and welfare economics with relation to international trade. Pre: 460, 462, or consent of instructor.

662 INTERNATIONAL FINANCE (3) I

Balance of payments, exchange rates, capital transfers, international financial equilibrium. Pre: 460, 461 or consent of instructor.

690 (619) REGIONAL ECONOMIC ANALYSIS (3) I

Selected problems of regional economic analysis and regional projections. Discussion of specific regional and interregional input-output models. Identical to Geog 620. Pre: 310 or 492 or equivalent.

699 DIRECTED RESEARCH (arr.) I, II

Pre: consent of department chairman.

710 SEMINAR IN ECONOMIC DEVELOPMENT (3) II

Case studies, emphasizing research approaches and techniques. Theories of economic development applied to experience of certain Asian nations. Pre: 610 or consent of instructor.

745 WORKSHOP: FINANCIAL AND MONETARY ASPECTS OF ECONOMIC DEVELOPMENT (arr.)

Role of monetary system and non-bank financial institutions in developing nations and in development planning considered. Research papers required. Pre: 611, 640, or consent of instructor. (Alt. yrs., not offered 1968-69.)

760 (662) SEMINAR IN INTERNATIONAL ECONOMICS (3) II

Special studies in theories of international trade and international finance. Pre: 660, 662, or consent of instructor.

English (Eng)

Senior Professors DAY, WILSON; Professors ANDERSON, BOUSLOG, FUJIMURA, LOWERS, SHEN, STEMPPEL, SUMMERSGILL; Associate Professors BACKUS, CANARY, CRYMES, HUNTSBERRY, KIRTLEY, LARSON, LEIB, LEVY, WELLEIN, WINTERS; Assistant Professors BROWN, FELDMAN, FLYNN, FONG, FRIEDSON, GLISSMEYER, GRAY, GRIFFING, HEINE, HOLLINGSHEAD, KRAUSE, LESTER, MALTBY, MANEY, MCCUTCHEON, MENIKOFF, MIDDLEBROOK, RICHSTAD, SCOTT, SIMSON, SINCLAIR, SOLOMON, STILLIANS, TEEVAN, THOMPSON, TOPHAM, WILEY; Instructors ABRAMSON, ABRUMS, ALEXANDER, BLACKSTONE, BREEN, BRUNN, DELUCA, DROBNIAK, DUNCAN-HALL, DURANT, DYE, ECKLOR, FELLMETH, FREEGOOD, FREIMARCK, FRIEDMAN, GINGLES, GLICK, HERSHINOW, HOGAN, KAMINS, KARNES, KENNEDY, KISER, KLEMAS, LEDOUX, LEE, LICHTY, MACMILLAN, MCCLEAR, MCMANUS, NEWTON, OKADA, ONOPA, OZAWA, PASLES, PETERS, PETERSON, RAYMOND, RE, SCHULTZ, SCHWANEKAMP, SLATER, SOHL, STEVICK, TAYLOR, UDA, VAUGHN, VELLA, WELCH, WENSKA, WILKINSON, WILLIAMS, YOUNG, YURMAN
Associate Professor FRIERSON; Assistant Professor TAYLOR

101-102 EXPOSITORY WRITING (3-3) Yr.

Larson, Staff

101: Training in analysis of expository essays; discussion and practice of important rhetorical procedures, including exemplification, definition, classification, comparison; practice in designing and controlling development of paragraphs and essays. 102: Practice in reasoning and argument; introduction to study of language and usage; practice in adjusting style (diction, idiom, sentence structure) to rhetorical purpose.

101-102 or 105 is prerequisite to all sophomore literature courses.

105 EXPOSITORY WRITING (Accelerated) (3) I

Staff

Intensive, one-semester course in analysis and writing of expository essays, providing practice in different expository procedures, and opportunities for students to improve prose style. Open only to freshmen who have qualified for course by performance on Freshman English Anticipatory Examination or on College Board Advanced Placement Examination in English.

Any of the following six semester courses (251-256) satisfies the requirement for sophomore literature.

251-252 (150-151) MAJOR WORKS OF BRITISH AND AMERICAN LITERATURE (3-3) Yr.

Friedson, Staff

251: Middle Ages to 1800. 252: 1800 to present.

253-254 (152-153) WORLD LITERATURE (3-3) Yr.

Sinclair, Staff

Major works of classical, Oriental, European, American literature. 253: Classical times to Renaissance. 254: 1600 to present.

255-256 (154-155) TYPES OF LITERATURE (3-3) Yr.

Huntsberry, Staff

Practical criticism in major genres of European and American literature. 255: short story, novel, introduction to poetry (narrative). 256: drama, biography, poetry.

Two semesters of sophomore literature (251, 252, 253, 254, 255, 256) are prerequisites for upper division courses beginning with English 312.

309 (209) WRITTEN COMMUNICATION (3) I, II

Brown, Staff

Practice in informative, analytical, persuasive writing. Open only to students in business administration and home economics. Pre: 102 and sophomore literature, or equivalents.

- 310 (210) TECHNICAL EXPOSITION (3) I, II** Leib, Staff
Analysis of selected scientific prose; principles and practice of presenting technical information. Open only to juniors and seniors in scientific fields.
- 312 (212) LITERARY WRITING (3) I, II** Huntsberry, Staff
Writing and criticism of essays, designed to develop effective expression, with emphasis on lively and individual style. Pre: consent of instructor.
- 315 (215) ADVANCED EXPOSITORY WRITING (3) I, II** Simson, Staff
Writing of essays from logical and rhetorical principles, especially modes of definition, assertion, proof. Emphasis on clarity, coherence, style.
- 320 INTRODUCTION TO LANGUAGE (3) I, II** Brown, Staff
Examination of modern concepts of structure and use of language, with special reference to English.
- 331 (231) INTRODUCTION TO POETRY (3) I, II** Thompson, Staff
Written and oral analysis of imagery, sound, language, form and structure of poems, leading to increased awareness of nature of poetry.
- 335 (235) BACKGROUNDS OF WORLD LITERATURE (3) I, II** Kirtley
Most important sources of European literary themes and allusions, including King James Bible and western European myth and legend.
- 336 INTRODUCTION TO LITERARY PROBLEMS (3) I, II** Bouslog, Staff
Critical evaluation of the genres of literature, of various modes of analysis, of problems involved in literary perception.
- 337 MASTERS OF LITERARY CRITICISM (3) I, II** Staff
Survey of the chief writings in criticism from Aristotle through Arnold (in English), with emphasis on classical answers to critical problems.
- 351-352 (250-251) ENGLISH LITERARY HISTORY (3-3) Yr.** Heine, Maltby
Readings in representative authors and works, with emphasis on history of ideas and development of literary forms. 351: beginnings to 1798. 251: Romantics to present.
- 397-398 (309-310) JUNIOR HONORS PROGRAM IN ENGLISH (3-3) Yr.** Bouslog, Winters
Individual study of periods of English literature, from Anglo-Saxon times through 15th century. Tutorial methods. Consult departmental honors adviser.
- 401 (425) MODERN ENGLISH GRAMMAR (3) II** Crymes, Flynn, Lester, Shen
Syntax of modern English examined within framework of recent linguistic scholarship.
- 402 (426) HISTORY OF THE ENGLISH LANGUAGE (3) I, II** Flynn, Lester, Wellein
Introduction to older stages of English and processes by which Modern English evolved.
- 404 (424) ENGLISH PHONOLOGY (3) II** Shen
Study of English sound system (including morphophonemics) and of recent theories of phonological interpretation. Pre: 320, 401, Ling 102, Sp 211 or equivalent.
- 408 (420) HISTORY OF RHETORIC (3) II** Larson
Major rhetorical theories from Aristotle to present day, with practice in rhetorical analysis of essays and works of imaginative literature. (Alt. yrs. offered 1968-69.)
- 411 POETRY WRITING (3) II** Thompson
Writing and criticism of poetry. Pre: 331, consent of instructor.
- 413 FORM AND THEORY IN WRITING FICTION (3) I, II** Huntsberry, MacMillan, Uda
Study of techniques of prose fiction from standpoint of the writer.
- 414 NARRATIVE WRITING (3) I, II** Huntsberry, MacMillan, Uda
Instruction and practice in writing short story. Pre: 413 or equivalent.

- 415 ADVANCED NARRATIVE WRITING (3) I** Huntsberry, MacMillan, Uda
Developing skill in story telling (either short story or novel). Pre: 414 or equivalent.
- 421 (440) ENGLISH DRAMA TO 1642 (3) II** Fujimura, Lowers, Summersgill
Origins of English drama; medieval drama and theatre; contemporaries and successors of Shakespeare.
- 431, 432 (447, 448) THE ENGLISH NOVEL (3, 3) Yr.** Heine, Hollingshead
Historical and critical study of development of English novel. 431: during 18th and early 19th centuries, with emphasis on rise of realistic novel. 432: from Dickens to Hardy.
- 433 (490) 20TH-CENTURY BRITISH NOVEL (3) I** Staff
- 442 (452) CHAUCER (3) II** Summersgill, Wellein
Study of Chaucer's development from early poems through *The Canterbury Tales*.
- 445, 446 (457, 458) SHAKESPEARE (3, 3) Yr.** Staff
Critical study of Shakespeare's plays. 445: from the beginning to *Hamlet*. 446: *Hamlet* through last plays. Both semester courses taught each semester.
- 447 (466) MILTON (3) I** Larson, McCutcheon
Selected poetry and prose.
- 451 MEDIEVAL ENGLISH LITERATURE (3) I** Leib
Representative Old and Middle English poetry, prose, exclusive of Chaucer, with continental backgrounds; chiefly in translation.
- 453 (455) 16TH-CENTURY ENGLISH LITERATURE (3) I** Lowers, McCutcheon
Poetry and prose of Tudor period, exclusive of the drama.
- 454 (460) EARLY 17TH-CENTURY ENGLISH LITERATURE (3) II** Fujimura, McCutcheon
Poetry and prose of 17th century to 1660, exclusive of the drama.
- 456 (465) RESTORATION LITERATURE (3) II** Anderson, Fujimura, Larson
Poetry, prose, drama from 1660 to 1700, exclusive of Milton.
- 457, 458 (470, 471) 18TH-CENTURY ENGLISH LITERATURE (3, 3) Yr.** Anderson, Fong, Fujimura, Maltby
Poetry, prose (exclusive of the novel), drama. 457: from 1700 to 1740, with emphasis on Pope and Swift. 458: 1740 to 1780, with emphasis on Johnson and his circle.
- 461 (480) THE ROMANTIC MOVEMENT IN ENGLAND (3) I** Fong, Stempel, Stillians
Poetry and prose from 1780 to 1832, exclusive of the novel.
- 463, 464 (485, 486) VICTORIAN LITERATURE (3, 3) Yr.** Frierson, Stempel
Poetry and prose exclusive of the novel. 463: from 1832-1870. 464: from 1870-1914.
- 469 (473) STUDIES IN BRITISH LITERATURE (3) I, II** Staff
Some aspect of British literature, such as genre, one or more major authors, etc. May be repeated for credit.
- 471, 472 (571, 572) AMERICAN LITERATURE (3, 3) Yr.** Staff
Critical study of American literature. 471: from beginnings to Civil War. 472: from Civil War to present. Both semester courses taught each semester.
- 475, 476 (589, 590) THE AMERICAN NOVEL (3, 3) Yr.** Bouslog, Day, Levy
Development of American novel. 589: beginnings to 1900. 590: 1900 to present.
- 479 (573) STUDIES IN AMERICAN LITERATURE (3) I, II** Staff
Some aspect of American literature, such as genre, one or more major authors, etc. May be repeated for credit.

- 480 (585) LITERATURE OF THE PACIFIC (3) II** **Backus, Day, Kirtley, Leib**
Pacific Islands, Australia: narratives of voyagers, translations of native literature, fiction by Melville, Stevenson, London, Becke, Nordhoff, Hall.
- 482 (540) THE NARRATIVES OF ORAL TRADITION (3) II** **Kirtley**
Examination of folk narratives (prose types of folktale, ballad and related types of poetry, and epic); their relation to art-literature.
- 483, 484 (443-444) MODERN DRAMATIC LITERATURE (3, 3) Yr.** **Friedson, Maltby, Teevan, Topham**
483: European, Ibsen, and Chekhov to Shaw, 1880-1920. 484: European and American, O'Casey to Miller, 1920 on.
- 487 (592) 20TH-CENTURY BRITISH AND AMERICAN POETRY (3) I** **Teevan**
- 497-498 (397-398) SENIOR HONORS TUTORIAL (6-6) Yr.** **Stempel, Staff**
Intensive study of periods of English and American literature. Tutorial methods. Consult departmental honors adviser.
- 630 SEMINAR IN RESEARCH METHODS (3) I, II** **Bouslog, Gray**
Kinds of research, problems of bibliography, fundamentals of thesis writing. Required of all candidates for M.A. degree in English.
- 637, 638 (636-637) HISTORY OF LITERARY CRITICISM (3, 3) Yr.** **Simson, Stempel**
Chief theories of literary criticism, with readings (in English). 637: from Plato to the late 19th century. 638: modern literary criticism.
- 640 OLD ENGLISH (3) I** **Lester, Wellein**
Structure of the language, relation to present English; reading of selected prose and poetry. Pre: consent of instructor.
- 660 MAJOR AUTHORS (3) I, II** **Staff**
Study of one or more authors, English or American.
- 675 LITERARY GENRES AND PROBLEMS (3) I, II** **Staff**
Study of one area of English or American literature.
- 735 (635) SEMINAR IN COMPARATIVE LITERATURE (3) II** **Staff**
Introduction to comparative literature; relationship of English to other literatures; sources and influences. Pre: consent of instructor.
- 745 (645) SEMINAR IN ENGLISH LANGUAGE (3) II** **Staff**
Intensive study of one topic in English linguistics. Pre: consent of instructor. May be repeated for credit.
- 757 (657) SEMINAR IN SHAKESPEARE (3) II** **Staff**
Intensive study of Shakespeare. Pre: consent of instructor.
- 775 (685) SEMINAR IN ENGLISH LITERATURE (3) I, II** **Staff**
Study of authors or a period. Pre: consent of instructor.
- 780 SEMINAR IN AMERICAN LITERATURE (3) I, II** **Staff**
Intensive study of one or two writers. Pre: consent of instructor.
- 785 SEMINAR IN AMERICAN LITERATURE (3) I, II** **Staff**
Study of a problem or a period. Pre: consent of instructor.
- 790 (620) TEACHING COMPOSITION (3) II** **Larson**
Theory and observation of teaching of composition, principally at college level, but with some applications to composition in secondary school. Limited number of secondary school teachers of English admitted. Pre: consent of instructor.
- 791 (621) STUDENT TEACHING OF COLLEGE COMPOSITION (3) I** **Larson**
Supervised experience in teaching composition at college level. Pre: 790 or equivalent.
- 799 (699) DIRECTED RESEARCH (arr.) I, II** **Staff**
Individual reading or research. Pre: consent of instructor.

Journalism (Journ)

- 111 PUBLICATIONS WORKSHOP (1) I, II** Richstad, Wiley
Reporting, copy editing, advertising copywriting, proofreading, photography under supervision of publications executives and instructor.
- 150 THE PRESS AND SOCIETY (3) I** Richstad
Analysis and evaluation of American journalism as shaped by historical, legal, economic, social forces; comparison/contrast with the world press.
- 205 NEWS WRITING (3) I, II** Wiley
Fundamentals of news style, reporting, ethics. Pre: Eng 102.
- 206 NEWS EDITING (3) I, II** Richstad, Wiley
News and photo editing, headline writing, publications makeup. Pre: 205.
- 207 EDITORS WORKSHOP (2) I, II** Staff
Editorial problems. Pre: consent of instructor.
- 239 MASS MEDIA (3) I** Scott
Mass communications as result of technological, industrial organization; characteristics of mass media and consumer response to media.
- 250 TYPOGRAPHY (3) I** Scott
Basic printing procedures and design; history of typography; decoration and illustration.
- 315 INVESTIGATIVE REPORTING (3) I, II** Staff
Preparing specialized material for mass media, with emphasis on problems of objectivity, analysis, interpretation. Pre: consent of instructor.
- 316 EDITING AND PUBLISHING (3) II** Scott
Illustration and typographical design; printing processes; newspaper and magazine management; editorial responsibility; laws of libel and copyright. Pre: 206.
- 325 WRITING NON-FICTION (3) II** Wiley
Writing non-fiction articles for magazines and newspapers; preparing material for specific audience; marketing articles. Pre: consent of instructor.
- 385 DIRECTED WORK (3) I, II** Scott, Wiley
Internship in media operations under professional and faculty supervision. Pre: consent of instructor.

English as a Second Language (ESL)

Associate Professors PLAISTER, SITTler; Assistant Professors COLLIER, MASON, SCHAAFSMA, TRIFONOVITCH, WILSON; Instructors ALTER, ARAPOFF, BARHAM, BAYLEY, CURRIER, ELLIOTT, FRANKENSTEIN, JOHNSON, RICKARD, ROBERTS, SEGLEM, SOONG, TSUBOI, XIGOGIANIS

English Language Institute (ELI)

Note: Initial placement in ELI courses is by examination. A grade of C or higher is prerequisite to subsequent promotion or exemption. See "Special Instructional Programs" for further discussion of assignment to and exemption from ELI courses.

- 60 (51) ORAL ENGLISH FOR FOREIGN STUDENTS (0) I, II**
Intensive drill to develop facility in speaking and understanding. Language laboratory work also required. Equals 4 credits.

61 ENGLISH STRUCTURE FOR FOREIGN STUDENTS (0) I, II

Intensive drill on recognition and production of English grammatical signals. Equals 2 credits.

62 (71) READING PROGRAM FOR FOREIGN STUDENTS (0) I, II

Instruction and practice in developing improved reading comprehension and speed, and in effective use of textbooks and reference materials. Equals 3 credits.

63 (81) WRITING PROGRAM FOR FOREIGN STUDENTS (0) I, II

Instruction and practice in factual reporting and summarizing; effect of grammatical devices on meaning and organization. Equals 3 credits.

70 (52) INTERMEDIATE ORAL ENGLISH FOR FOREIGN STUDENTS (0) I, II

Further practice in spoken fluency and accurate aural comprehension. Language laboratory work required. Equals 3 credits.

71 (62) INTERMEDIATE ENGLISH STRUCTURE FOR FOREIGN STUDENTS (0) I, II

Further drill on English grammatical patterns. Equals 1 credit.

72 INTERMEDIATE READING PROGRAM FOR FOREIGN STUDENTS (0) I, II

Further work on reading comprehension and speed, techniques of skimming and rapid review. Equals 2 credits.

73 (82) INTERMEDIATE WRITING PROGRAM FOR FOREIGN STUDENTS (0) I, II

Instruction and practice in essay-type writing; gathering, classification, organization of facts. Equals 2 credits.

80 (53) ADVANCED ORAL ENGLISH FOR FOREIGN STUDENTS (0) I, II

Emphasis on comprehension of unmodified streams of speech and extended oral discourse. Equals 1 credit.

181 (163) ADVANCED ENGLISH STRUCTURE FOR FOREIGN STUDENTS (1) I, II

Emphasis on control of complex spoken and written syntactical constructions.

183 ADVANCED WRITING PROGRAM FOR FOREIGN STUDENTS (2) I, II

Writing of critical reports and term papers; logical analysis and evaluation of facts.

English as a Second Language (ESL)

610 (Eng 622) TEACHING ENGLISH AS A SECOND LANGUAGE (3) II

Analysis of methods of teaching English as second language. Attention to implications for language teaching of recent and current research in language and language learning. Pre: Ling 320 or consent of instructor.

710 (Eng 723) MATERIALS DEVELOPMENT FOR TESL (3) I

Principles of planning and writing drill and text materials for English as second language. Survey and analysis of existing materials. Pre: 610.

720 SECOND LANGUAGE TESTING (3) I, II

Plaster

Measurement and evaluation of achievement and proficiency in second language learning. Pre: 610 or consent of instructor.

730 (Ling 720) SEMINAR IN APPLIED LINGUISTICS (3) I

Application of linguistics to second language teaching. Readings and discussion of current issues in applied linguistics. Pre: consent of instructor.

799 DIRECTED RESEARCH (arr.) I, II

Individual reading or research in various aspects of teaching English as second language. Pre: consent of department chairman and instructor.

European Languages

Professors ASPINWALL, KNOWLTON, SEYMOUR; Associate Professors S. BACIU, BURNS, DAUER, HADLICH, HOLTON, JACKSON, M. MONTES, NIEDZIELSKI, ROSSBACHER, WISWELL; Assistant Professors BREININGER, ELLIOTT, EUCHER, FRÖHLICH, GUENTHERODT, S. MILLER, MOORE, SCHERER, WILKENS, WINTER, WOOD, WOODS; Instructors BROWN, CARROLL, CASSIDY, CHANG, DOUYERE, FOCHTMAN, GRAY, GUNN, HOREAU, HULL, KELLER, H. MILLER, Y. MONTES, OWENS, PASSLER, PHILIPP, STUEBE; Visiting Professor BOREL; Assistant Professor LEROND; Instructors LEPLEY, RORKE, SALASSA

General (EL)

199 DIRECTED LANGUAGE STUDY (arr.) I, II

Directed study in European languages not taught on regular basis (e.g., Danish, Rumanian, etc.), depending on demand and staff. Pre: permission of department chairman, chairman.

399 DIRECTED READING (arr.) I, II

Individual projects in various fields. Limited to senior majors with 2.7 grade-point ratio, or 3.0 grade-point in the department major.

610 CONTRASTIVE ANALYSIS OF SPANISH AND FRENCH WITH ENGLISH (3) I or II

Hadlich

Structures of Spanish and French contrasted with English on phonemic, morphological, and syntactic levels. Elucidation of nature and cause of learning problems of French or Spanish students. Pre: Span 431 or Fr 406. Eng 320 or 401 recommended.

621 COMPARATIVE ROMANCE LINGUISTICS (3) I

Comparative study of linguistic development of Romance Languages from Latin. Pre: Ling 320 or the equivalent. Reading knowledge of at least one Romance language and of Latin recommended. (Alt. yrs.)

630 SEMINAR IN RESEARCH METHODS (2) I

(1) Romance languages, (2) German. Study of available source material in European languages, from the Middle Ages to the 20th century, with emphasis upon basic research tools and methods.

Dutch (Du)

311-312 READING, COMPREHENSION, AND SPEAKING SKILLS (3-3) Yr.

Wood

Introduction to modern Dutch designed for students who wish to study a second foreign language. Reading, grammar, with some conversation and laboratory drill. Cannot be used to fulfill a language requirement.

French (Fr)

Note: All courses except 401 are conducted in French.

101-102 ELEMENTARY FRENCH (4-4) Yr.

Conversation, laboratory drill, grammar, reading.

103 INTENSIVE ELEMENTARY FRENCH (8) I

M. Baciu

Class meets 2 hours daily, Monday through Friday. In one semester the contents of French 101-102 will be presented.

201-202 (151-152) INTERMEDIATE FRENCH (3-3) Yr.

Gray

Reading, conversation, laboratory drill, composition. Pre: 102 or the equivalent.

- 301 (205) PHONETICS AND PRONUNCIATION PRACTICE (2) I, II** **Niedzielski**
 Analysis of French phonological system. Practice and laboratory drill designed to improve the student's pronunciation. Pre: 101 or two years of high school French.
- 311-312 (211-212) ADVANCED CONVERSATION AND COMPOSITION (3-3)**
 Systematic oral and written practice. Laboratory drill as directed. Pre: 202 or equivalent.
- 331-332 (303-304) SURVEY OF FRENCH LITERATURE (3-3)** **Jackson**
 Survey of French literature covering major authors and movements. Pre: 311-312 with which either 331 or 332 may be taken concurrently.
- 361 (360) FRENCH CIVILIZATION (3) I** **Gray**
 Survey of culture and institutions of modern France. Pre: 202. May be taken concurrently with 311.
- 401 LITERATURE SINCE 1800 IN TRANSLATION (2) II**
 Rapid reading in translation; lectures, discussion, and reports. Pre: two semesters of literature courses in English department. (Alternates with Rus 402.) Not creditable toward the major.
- 406 STRUCTURE OF FRENCH (3) II** **Niedzielski**
 Study of structure of contemporary French as analyzed by descriptive linguists. Pre: 202 or equivalent.
- 411 MASTERPIECES OF 17TH-CENTURY LITERATURE (3) I** **Gray**
 Pre: 331 or 332.
- 413 MASTERPIECES OF 18TH-CENTURY LITERATURE (3) II** **Jackson**
 Pre: 331 or 332.
- 415-416 MASTERPIECES OF 19TH-CENTURY LITERATURE (2-2)** **Aspinwall, Jackson**
 415: poetry; 416: prose. Pre: 331 or 332.
- 420 TWENTIETH CENTURY FRENCH NOVEL (3) I or II** **Borel**
 Study of major French novelists of 20th century and their works. Gide, Proust, Mauriac, Sartre, Camus, etc. Pre: 331-332.
- 421 TWENTIETH CENTURY FRENCH THEATRE (3) I or II**
 Study of major French playwrights of 20th century and their works. Claudel, Giraudoux, Anouilh, Sartre, Camus, etc. Pre: 331-332.
- 422 TWENTIETH CENTURY FRENCH POETRY (3) I or II**
 Explication and discussion of poems by such poets as Valéry, Claudel, Apollinaire, Supervielle, Saint-John Perse, Breton, Desnos, Eluard, Aragon, Char, Reverdy. The goal is appreciation. Desirable preparation: 331-332.
- 601 SEMINAR IN CONTEMPORARY FRENCH LITERATURE (3) I or II**
 Study of authors and movements of modern period. Pre: consent of instructor.
- 602 SEMINAR IN FRENCH POETRY (3) I or II** **Borel**
 Technical study of representative poems from Renaissance to present. Pre: consent of instructor.
- 609 FRENCH RENAISSANCE (3) I or II** **Eacher**
 Poetry, theatre, prose. Emphasis on Montaigne and Rabelais. Lectures, discussions, reports. Pre: consent of instructor.
- 661 (660) STYLISTICS (2) I** **Eacher**
 Designed to give mastery of structure and phrasing. Translation into French, discussion, composition. Pre: consent of instructor. (May be waived for native speakers of French.)
- 666 (665) SEMINAR IN HISTORY OF FRENCH LITERARY CRITICISM (2) I or II** **Jackson**
 Study of important literary criticism in France from Renaissance to present and its influence upon French literary history. Pre: consent of instructor.

- 671 HISTORY OF THE LANGUAGE (2) I** **Niedzielski**
Introduction to historical development of the French nation, its civilization and its language. Contrastive analysis. Readings of selected texts.
- 672 MEDIEVAL LITERATURE (2) II** **Eucher**
Genesis and evolution of literary genres in Old and Middle French. Changes and continuity.
- 681 (680) THE NOVEL IN FRANCE (3) I or II** **Jackson**
Historical development of genre and study of major novels which have influenced movements or established techniques. Pre: 5 credits at 400 level or equivalent. (Alternates with 690.)
- 690 THE THEATRE IN FRANCE (3) I**
Historical development of genre and study of major dramatists who have influenced movements or established techniques. Pre: 5 credits at 400 level or equivalent.
- 699 DIRECTED RESEARCH (arr.) I, II**
Pre: consent of chairman.
- 735 (685) SEMINAR IN FRENCH LITERATURE (3) I or II**
Study of authors or a period. Pre: consent of chairman of graduate field.
- 800 THESIS RESEARCH (6)**

German (Ger)

- 101-102 ELEMENTARY GERMAN (4-4) Yr.**
Conversation, laboratory drill, grammar, reading.
- 201-202 (151-152) INTERMEDIATE GERMAN (3-3) Yr.**
Reading, conversation, laboratory drill, composition. Pre: 102 or equivalent.
- 203 APPLIED PHONETICS (2) I, II** **Seymour, Wood**
Exercises in German pronunciation, reading, speaking; laboratory exercises. Pre: 102. May be taken concurrently with 201 or 202.
- 212 (154) INTERMEDIATE: SCIENCE GERMAN (3) II**
Accurate reading over wide range of subjects. Emphasis on sentence structure and vocabulary building. Pre: 201. B.S. candidates only or permission of dept. chairman.
- 305-306 (205-206) COMPOSITION AND CONVERSATION (3-3) Yr.** **Dauer, Moore**
Designed to develop proficiency in German sentence structure and phrasing; conversation; laboratory drill; exact composition on literary subjects. Pre: 202. Pre: for 306: 305.
- 311-312 (301-302) INTRODUCTION TO GERMAN LITERATURE (3-3) Yr.** **Fröhlich, Scherer**
Representative reading and discussion of cultural periods in chronological order; laboratory exercises. Pre: 306. For majors, concurrent registration with 305-306 is permitted.
- 406 (405) STRUCTURE OF THE GERMAN LANGUAGE (3) II** **Seymour, Wood**
Phonological, morphological, syntactic structure of contemporary German, as analyzed by descriptive linguists. Pre: German 202.
- 419 ENLIGHTENMENT THROUGH POST CLASSICISM (3) I** **Dauer, Guentheredt**
Representative works of movements leading up to German Classicism; of classical Schiller and Goethe, and of old Goethe. Pre: 311-312 or equivalent.
- 420 ROMANTICISM THROUGH REALISM (3) II** **Dauer, Guentheredt**
Different groups within Romantic School, Novalis, Hoelderlin, and subsequent development of various types of Realism in letters. Pre: 311-312.

- 421 NATURALISM THROUGH NEO-ROMANTICISM (3) I** **Moore**
Origins of German Naturalism and Transition into Neo-Romanticism as exemplified in works of Gerhart Hauptmann and others. Pre: 311-312 or equivalent.
- 422 LITERARY CURRENTS SINCE WORLD WAR I (3) II** **Scherer**
Survey of simultaneous currents in German literature since 1918, with emphasis on lasting trends. Pre: 311-312 or equivalent.
- 601 HISTORY OF THE GERMAN LANGUAGE (3) I** **Seymour**
Fundamentals of linguistics; development of the language since 1000 A.D.
- 602 STYLISTICS (2) I**
Designed to develop lucid German idiom and style.
- 609-610 MIDDLE HIGH GERMAN (3-3) Yr.** **Seymour, Wood**
1st Sem: Study of grammar, syntax, phonetics, rhythm, meter (alliteration), reading. 2nd Sem: Middle High German literature. Reading of Nibelungenlied, Parzifal, Minnesang and other poetry and prosework of the Middle Ages. Pre: graduate standing or consent of chairman.
- 651 SEMINAR: THE GERMAN NOVELLE (3) I** **Dauer**
Discussion of representative works of this genre from end of 18th century up to 1955.
- 652 SEMINAR: DRAMA, GRYPHIUS THROUGH BRECHT (3) II** **Dauer**
German development of dramatic theory and literature from early 17th century theatre to modern times, exemplified by typical works of literary periods.
- 653 SEMINAR: LYRIC POETRY (3) I**
Interpretation and comparative study of representative German poems from Thirty Years War up to our times.
- 655 FAUST I (3) I**
Short history of Faust theme; Goethe's image of the "small world" or lower plane of human striving. (Alt. yrs.)
- 656 FAUST II (3) II**
Symbolic "greater world" or higher plane of human aspiration. (Alt. yrs.)
- 699 DIRECTED RESEARCH (arr.) I, II** **Dauer, Seymour**
Pre: consent of chairman.
- 800 THESIS RESEARCH (6)** **Seymour**

Greek (Greek)

- 101-102 ELEMENTARY GREEK (3-3) Yr.**
Vocabulary and grammar with reading of simple Greek.
- 201-202 (151-152) INTERMEDIATE GREEK (3-3) Yr.**
Review of grammar; readings from selected prose and poetry. Pre: 102 or the equivalent.
- 401 GREEK CIVILIZATION (3) I**
Study of history, art, culture of Greece. Pre: Hist 151 or 161 or Latin 101, or Greek 101 or the equivalent. Cross-listed as Hist 427.
- 403 GREEK LITERATURE (3) I** **Burns**
Major writers of Greece in translation. Pre: two semesters of literature courses. Does not count towards Classics major.
- 409 (410) PLATO (3) I**
Selections from the *Apology*, *Crito*, *Phaedo*. Pre: 202 or permission. (Alt. yrs.)
- 410 (411) HISTORIANS (3) II**
Selections from Herodotus, Thucydides. Pre: 202. (Alt. yrs.)

- 421 HOMER (3) I** **Burns**
 Selections from *Iliad* and *Odyssey*. Pre: 202 or permission.
- 422 LYRIC POETRY (3) II**
 Selections from lyric poets. Pre: 202 or permission. (Alt. yrs.)
- 431 INTRODUCTION TO DRAMA (3) I** **Burns**
 Selected readings in Greek dramatists. Pre: 202 or permission. (Alt. yrs.)
- 432 DRAMA (3) II** **Burns**
 Reading of entire dramas by Aeschylus, Sophocles, Euripides. Pre: 431 or 421 or permission. (Alt. yrs.)
- 441 PRE-SOCRATICS (3) I** **Burns**
 Study of the fragments from the early Greek philosophers. (Alt. yrs.) Pre: permission.
- 442 ARISTOTLE (3) II**
 Selected readings in Aristotle. (Alt. yrs.) Pre: permission.
- 490 SEMINAR (3) I, II** **Burns**
 Investigation in depth of a specific author or phase in field of Hellenic studies with individual research by participants. Pre: permission. May be repeated for credit.

Italian (It)

311-312 COMPREHENSION, SPEAKING AND READING SKILLS (3-3) Yr.

Introduction to modern Italian designed for students who wish to study a second foreign language. Reading, grammar, conversation, laboratory drill. Cannot be used to fulfill a language requirement. Pre: equivalent of Latin, Spanish, French or Portuguese at the 102 level.

Latin (Latin)

101-102 ELEMENTARY LATIN (3-3) Yr.

Vocabulary and grammar, with reading of simple Latin.

201-202 (151-152) INTERMEDIATE LATIN (3-3) Yr.

Review of grammar, reading of selections from prose and poetry. Pre: 102 or the equivalent.

301-302 STRUCTURE OF LATIN (3-3) Yr.

Intensive study of structural idiomatic and stylistic aspects of Latin. Pre: 202 or permission.

401 HISTORIANS (3) I

Reading of Livy, Sallust, Tacitus and other Roman historians. (Alt. yrs.) Pre: 202 or permission.

402 ROMAN CIVILIZATION (3) II

Study of history, art, culture of Rome. Pre: Hist 151 or 161, or Latin 101, or Greek 101. Cross-listed as Hist 428.

404 ROMAN LITERATURE (3) II

Major writers of Rome in translation. Pre: two semesters of literature courses. Does not count towards Classics major.

409 (410) LYRIC POETS (3) I

Selections from foremost Latin lyricists, Horace, Catullus, Propertius, Tibullus. Pre: 202 or permission. (Alternates with 401.)

420 VERGIL (3) II **Burns**

Pre: 202 or permission. (Alt. yrs.)

- 427 (421) SATIRE (3) II**
 Selections from Horace, Juvenal, Martial. Pre: 202 or permission. (Alt. yrs.)
- 428 (422) DRAMA (3) I**
 Selected dramas of Plautus and Terence. Pre: 202 or permission. (Alternates with 427.)
- 433 (430) ROMAN PHILOSOPHY (3) I** **Burns**
 Pre: permission. (Alt. yrs.)
- 434 (431) LUCRETIUS (3) II** **Burns**
De Rerum Natura. Pre: permission. (Alt. yrs.)
- 440 ORATORY (3) II**
 Pre: permission. (Alt. yrs.)
- 490 SEMINAR (3) I, II** **Burns**
 Investigation in depth of a specific author or phase in field of Latin studies with individual research by participants. Pre: permission. May be repeated for credit.

Portuguese (Port)

- 101-102 ELEMENTARY PORTUGUESE (4-4) Yr.**
 Reading, conversation, laboratory drill, grammar.
- 201-202 (151-152) INTERMEDIATE PORTUGUESE (3-3) Yr.** **S. Baciu**
 Reading, conversation, writing, laboratory drill. Pre: 102 or the equivalent.
- 360-361 INTRODUCTION TO LUSO-BRAZILIAN LITERATURE (3-3)** **S. Baciu**
 Brief period of intensive practice in reading Portuguese for students with knowledge of Spanish, followed by discussion and analysis of principal works of Portuguese and Brazilian literature. Pre: 202 or Spanish 304.

Russian (Rus)

- 101-102 ELEMENTARY RUSSIAN (4-4) Yr.** **Hull, Keller**
 Conversation, lab drill, reading, writing, grammar.
- 201-202 (151-152) INTERMEDIATE RUSSIAN (3-3) Yr.** **Rossbacher**
 Reading, conversation, laboratory drill, grammar, composition. Pre: 102 or equivalent.
- 207-208 (153-154) INTERMEDIATE SCIENTIFIC RUSSIAN (3-3) Yr.**
 Rapid reading of scientific material. Translation and grammar review. May be taken by majors for credit concurrently with 201-202, but not instead of it. Recommended to students completing language requirement and to graduates. Pre: 102.
- 303-304 (203-204) ADVANCED ORAL PRACTICE (3-3) Yr.** **Keller**
 Systematic practice designed to develop students' control of spoken Russian through vocabulary building and stress on fluency of expression in a variety to subjects reinforced with laboratory drill. Pre: 202 or equivalent.
- 305-306 (205-206) COMPOSITION AND STRUCTURE (3-3) Yr.** **Keller, Wiswell**
 Emphasis on strengthening facility with language through further training in syntax structure and composition writing. Pre: 202 or equivalent.
- 311-312 (301-302) INTRODUCTION TO RUSSIAN LITERATURE AND CIVILIZATION (3-3) Yr.** **Rossbacher**
 Survey; Russian literature covering major authors and discussion of historical background in order to provide insight into Russian culture. Pre: 304 or 306.
- 400 (403) CONTEMPORARY LITERATURE IN TRANSLATION (3) II** **Wiswell**
 Reading and discussion of short stories, plays, and poetry by Pasternak, Evtushenko, Solzhenitsyn and others. Not creditable toward major. Pre: consent of instructor. (Alt. yrs.)

- 402 19TH-CENTURY NOVEL IN TRANSLATION (3) II**
Survey of important novelists in translation, particularly Gogol, Goncharov, Turgenev, Saltykov, Dostoevsky, Tolstoi. Not creditable toward major. Pre: consent of instructor. (Alternates with French 401.) (Alt. yrs.; offered 1968-69.)
- 404 LITERATURE OF THE 18TH CENTURY (3) II**
Representative reading and discussion of more important writers before Pushkin. Pre: 306 or consent of instructor. (Alternates with 420; offered 1968-69.)
- 411-412 LITERATURE OF THE 19TH CENTURY (3-3) Yr.** **Wiswell**
Reading and discussion of representative writers beginning with Pushkin. Pre: 306 or consent of instructor. (Alternates with 413-414.)
- 413-414 LITERATURE OF THE 20TH CENTURY (3-3) Yr.**
Representative writers before the revolution and contemporary Soviet writers. Pre: 306 or consent of instructor. (Alternates with 411-412.)
- 415 RUSSIAN POETRY (2) I**
Reading and discussion of classical and contemporary Russian poets. Pre: 306 or consent of instructor. (Alternates with 417.)
- 417 RUSSIAN DRAMA (2) I** **Wiswell**
Representative plays of 18th, 19th, and 20th centuries. Pre: 306 or consent of instructor. (Alternates with 415.)
- 418 ADVANCED COMPOSITION AND STYLISTICS (3) I** **Wiswell**
Study and analysis of representative prose selections which exhibit variations in style. Practice in written composition. Translation into Russian. Pre: 306 or consent of instructor.
- 420 HISTORY OF RUSSIAN LANGUAGE AND EARLY RUSSIAN LITERATURE (2) II**
Study of development of Russian language. Representative readings in Russian literature through 17th century. Pre: 306 or consent of instructor. (Alternates with 404.)
- 431-432 CONTEMPORARY SOVIET RUSSIA (3-3) Yr.** **Rossbacher**
Reading and discussion of contemporary Soviet prose, poetry, and plays in English translation. Pre: consent of instructor.
- 493 SEMINAR IN RUSSIAN LITERATURE (3-3) Yr.** **Rossbacher**
Important literary movements and writers. Pre: consent of instructor.
- 699 DIRECTED READING (arr.) I, II** **Rossbacher**
Pre: consent of instructor.

Spanish (Span)

- 101-102 ELEMENTARY SPANISH (4-4) Yr.**
Beginning course, primarily emphasizing oral practice. Laboratory drill.
- 106 SPANISH TRANSLATION FOR NON-MAJORS (0) I**
Practice in reading and translation of varied material, according to student's interests. Pre: 102 or consent of instructor.
- 110 ACCELERATED ELEMENTARY SPANISH (8) I & II**
Meets 2 hours daily, Monday through Friday, with daily laboratory drill. In one semester, work of 101-102 covered.
- 201-202 (151-152) INTERMEDIATE SPANISH (3-3) Yr.**
Continuation of oral practice; with increasing emphasis on reading and written composition. Laboratory drill. Pre: 102 or equivalent.
- 210 ACCELERATED INTERMEDIATE SPANISH (6) I & II**
Meets 1 hour daily, Monday through Saturday, with daily laboratory drill. In one semester, work of 201-202 covered.

- 303-304 (203-204) ADVANCED GRAMMAR AND COMPOSITION (3-3) Yr.** **Wilkins**
More detailed study of problem areas of Spanish grammar. Cultivation of accuracy and elegance in written expression. Pre: 202 or equivalent.
- 330 (230) PHONETICS AND PRONUNCIATION PRACTICE (2) I, II** **Holton**
Analysis of Spanish phonological system, in contrast with English. Practice designed to perfect student's own pronunciation; laboratory drill. Pre: 202 or equivalent.
- 351-352 (260-261) SPANISH AND SPANISH-AMERICAN CIVILIZATION (3-3) Yr.** **Woods**
Survey of culture and institutions of modern Spain and Spanish America, with some attention to their historical backgrounds. Pre: 202 or equivalent.
- 365-366 (362-363) MASTERWORKS OF SPANISH AND SPANISH AMERICAN LITERATURE (4-4) Yr.**
Reading and discussion in Spanish of most important works of literature of Spain and Spanish America, from beginning to present. Pre: 202 or equivalent.
- 403-404 (400-401) ADVANCED ORAL PRACTICE (3-3) Yr.**
Systematic practice designed to continue on advanced level student's control of spoken Spanish. Attention to further development of vocabulary which will permit accurate and mature expression on variety of topics. Laboratory drill. Pre: 304 or consent of instructor.
- 405 (402) SPANISH-ENGLISH TRANSLATION (3) I** **Holton**
Study of factors involved in art of translation. Practice in translating literary and other material from Spanish to English and the reverse. Pre: 304 or consent of instructor.
- 431 THE STRUCTURE OF SPANISH (3) I** **Hadlich**
Phonological, morphological, and syntactic structure of contemporary Spanish, as analyzed by descriptive linguists. Pre: Ling 102 or equivalent and Span 202 or consent of instructor.
- 441 (440) HISTORY OF THE SPANISH LANGUAGE (3) I** **Knowlton**
Pre: Spanish 202 or equivalent; one semester of college Latin or equivalent.
- 444 (449) SPANISH DIALECTOLOGY (3) II**
Study of principal regional and social variants from cultured standard Castilian to be encountered in language of Iberian Peninsula, America, Philippines. Pre: 431 or consent of instructor.
- 465-466 (460-461) MODERN AND CONTEMPORARY SPANISH LITERATURE (3-3) Yr.**
Reading and discussion of modern and 20th century peninsular authors. Studies of recent trends. Pre: 365 or consent of instructor.
- 470 SOCIAL & POLITICAL IDEAS OF 20TH CENTURY LATIN AMERICA (3) II** **S. Baciu**
National and international significance of principal currents of Latin American thought as expressed in fundamental works of national authors. Pre: 351-352 or the equivalent.
- 485-486 (480-481) SPANISH-AMERICAN NOVEL (3-3) Yr.**
Reading and discussion of important Spanish-American prose writers. Pre: 366 or consent of instructor.
- 490 HISPANO-PHILIPPINE LITERATURE (2) II** **Knowlton**
Study of important writers in Spanish from the Philippine Islands. (Alt. yrs.; not offered 1968-69.) Pre: 202 or equivalent.
- 625-626 (628-629) STYLISTICS AND ADVANCED COMPOSITION (3-3) Yr.** **M. Montes**
Study and analysis of representative prose selections which exhibit variations in style: colloquial, informal, formal expository, poetic, epistolary and the like. Practice in written composition in various styles analyzed.

- 658 (659) SEMINAR IN SPANISH LINGUISTICS (3) II** Hadlich, Knowlton
Study of a problem or problems in Spanish linguistics. Pre: consent of instructor.
(May be repeated.)
- 665 SPANISH LITERATURE PRIOR TO THE GOLDEN AGE (3) I**
Major works and trends of periods prior to Golden Age. The epic, poetry, and prose.
(Alt. yrs.; offered 1968-69.)
- 670 SPANISH LITERATURE OF THE GOLDEN AGE (3) II**
Representative readings in poetry, drama and prose of the 16th and 17th centuries.
(Alt. yrs.; offered 1968-69.)
- 697 (698) SEMINAR IN HISPANIC LITERATURE (3) I, II**
Study of a period, author, genre or region. Pre: consent of instructor. (May be repeated.)
- 699 DIRECTED RESEARCH (arr.) I, II**
Pre: consent of chairman.
- 800 THESIS RESEARCH**

General Science (Sci)

Professors BERNATOWICZ, KAY; Assistant Professors BECKER, NEWHOUSE; Instructors CHRISTOFFERSON, KLIM, LAMKE, PAGE-CALLIS

- 121-122 (121-120) INTRODUCTION TO SCIENCE** Becker, Kay, Newhouse
(4-4) Yr. (3 I, 1 Ib)
Characteristics of science and interaction of society with science, illustrated by topics from biological science (121) and physical science (122).
- 420 (520) CASE HISTORIES IN SCIENCE (3) II (2 L-lb)** Becker
Emphasis on relations between facts, laws and theories, on innovations in methods and attitudes, on historical importance. Pre: 2 semesters of biological science, 2 semesters of physical science.
- 430 (530) HISTORY OF SCIENCE (3) I** Becker
Man's changing ideas concerning the universe reflected against historical setting. Pre: one year of natural science. Cross-listed with History 430.
- 551-552 (650-651) SEMINAR IN SCIENCE FOR SECONDARY SCHOOL TEACHERS (3-3) Yr.** Townsley
Selected topics in botany, entomology, geochemistry, geology, mathematics, meteorology, microbiology, physics, zoology, and philosophy of science. Occasional laboratory sessions and field trips.
- 620 NATURAL SCIENCE AS A HUMAN ACTIVITY (1) I, II** Newhouse
Seminar. The scientist; productivity in science; comparisons of several fields; anatomy of science; science and society. May be repeated.

Geography (Geog)

Professors BOWERS, FRYER, KORNHAUSER, MANCHESTER, PITTS, WIENS; Associate Professors ARMSTRONG, CHANG, J. H., CHANG, S. D., FUCHS, PIRIE, STREET;
Acting Assistant Professor EARICKSON; Lecturer PIANAIA;
Visiting Assistant Professors CLARKE, DECKER

A 100 level course, or consent of the instructor, is prerequisite to all courses numbered over 299.

INTRODUCTORY COURSES

101 ELEMENTS OF PHYSICAL GEOGRAPHY (3) I, II (2 L, 1 Lb)

Survey of man's natural environment; distribution and interrelationships of climates, vegetation, soils, landforms. Laboratory problems in map interpretation and environmental analysis.

102 WORLD REGIONAL GEOGRAPHY (3) I, II**Bowers, Kornhauser, Manchester**

Geography of world's major cultural regions; emphasis on geographic aspects of contemporary economic, social, political conditions.

151 ECONOMIC GEOGRAPHY (3) I, II**Staff**

Systematic study of patterns of economic activities; agriculture, mining and manufacturing, services and consumption. Elements of location theory, transportation and urban geography. Basic aspects of regional economic development and planning.

SYSTEMATIC PHYSICAL GEOGRAPHY

300 (420) INTRODUCTION TO CLIMATOLOGY (3) I**J. H. Chang**

Elements and controls of climate. World patterns of insolation, temperature, evaporation, precipitation, atmospheric circulation. Climatic classifications. Pre: 101.

310 (410) PHYSICAL GEOGRAPHY (3) II**Street**

Nature, distribution and interrelationships of vegetation, soils, landforms. Readings in recent biogeographic literature. Pre: 101.

314 (580) GEOGRAPHY OF THE TROPICS (3) I**Clarke**

Analysis of physical environment and resource potential of tropics; problems of human use and occupation.

351 ELEMENTS OF REGIONAL SCIENCE (3) II

Spatial organization of economic activities. Concepts of location, interaction and economic change. Basic methods of regional and interregional analysis. Application to contemporary development problems. Pre: 151 or Econ 120 or consent of instructor.

400 (421) ADVANCED CLIMATOLOGY (3) II**J. H. Chang**

Discussion of general circulation. Climatic characteristics of each continent. Emphasis on genesis and dynamism of climate. Regional climatic problems. Pre: 300 or equivalent. (Not offered 1968-69.)

415 MEDICAL GEOGRAPHY (3) II**Armstrong**

Areal distribution of disease indices and interrelationships with elements of physical, biological, cultural environment. Emphasis upon theoretical approaches to problems and research. Pre: 380 or equivalent. Biol 120 or Zool 101 or equivalent, or consent of instructor.

600 (630) SEMINAR IN CLIMATOLOGY (3) II**J. H. Chang**

Methods of determining energy budget and water balance and their applications in agriculture, hydrology, climatic classifications. Theory of climatic changes. Bibliography of climatological literature. Pre: 300 or equivalent.

SYSTEMATIC CULTURAL GEOGRAPHY

326 (507) CONSERVATION AND UTILIZATION OF NATURAL RESOURCES (3) I**Staff**

Conservation and utilization of soil, water, mineral, biotic resources. Role of man in changing face of the earth. Contemporary problems in U.S. (especially Hawaii) and underdeveloped areas.

330 (470) POPULATION GEOGRAPHY (3) I**Pirie**

Areal variation in distributions, densities, structures, internal dynamics of human populations. Emphasis on regional problems in lands adjoining Pacific. (Not offered 1968-69.)

335 (360) POLITICAL GEOGRAPHY (3) I**Bowers**

Geographic background of international politics and national power. Case studies of problem areas and boundary problems.

- 339 GEOGRAPHY OF EXPLORATION (3) I** Manchester
Exploration, discovery and development of world map from classical times to present. Emphasis on Asia and Pacific. Pre: junior standing and an introductory course in geography.
- 420 (455) LOCATION THEORY AND REGIONAL ANALYSIS (3) I**
Location theories concerned with agricultural, manufacturing and tertiary activities and with urban systems. Basic methods of locational analysis. Paths towards application in regional economic planning. Identical to Econ 490. Pre: 151 or Econ 300-301 or consent of instructor.
- 421 (450) URBAN GEOGRAPHY (3) II**
Location, size, functions, spatial-economic structure of modern city. Urban sphere of influence. Problems of urban transportation, changes in land use and urban growth. Role of government in urban development. Pre: 151 or consent of instructor.
- 620 (619) REGIONAL ECONOMIC ANALYSIS (3) I** Staff
Application to problems of regional economics of input-output analysis, linear programming, econometric analysis. Problems include optimal location of economic functions, population and migration, regional cycle and multiplier analysis. Identical to Economics 690. Pre: 420 or Econ 310, 494, or equivalent.

AREA COURSES

Each of the following courses covers, for the region concerned, the physical environment and resource base; evolution and present patterns of settlement, land utilization and economic activity; geographic aspects of population pressure, resource development and international relations.

- 340 (501) GEOGRAPHY OF THE UNITED STATES AND CANADA (3) I** Staff
Emphasis on evolution of present patterns of settlement and economic activity of U.S.
- 345 (526) GEOGRAPHY OF THE SOVIET UNION (3) II** Fuchs
The land and its people. Regional differences in physical environment, resources, economic development. Problems of resource management and development.
- 350 (541) GEOGRAPHY OF ASIA (3) I** S. D. Chang
Introduction to geographic analysis of East Asia, Southeast Asia, South Asia: physical setting, resource endowments, patterns of occupation, problems of economic transformation. Not open to those who have taken 352, 355, or 356.
- 352 (552) GEOGRAPHY OF JAPAN (3) I** Manchester
Regional synthesis of physical and cultural features which characterize economic, social, political geography of Japan. Emphasis on origins of these patterns.
- 353 (553) GEOGRAPHY OF CHINA (3) I** Wiens
Regional geographic exposition of historical, ethnic, political, economic character of China. Analysis of physical and resource base for agriculture and industry.
- 355 (555) GEOGRAPHY OF SOUTH ASIA (3) II** Bowers
Physical and human-use regions of India, Pakistan, Ceylon, Himalayan kingdoms. Geographic factors in history, politics, economics of the area.
- 356 (556) GEOGRAPHY OF SOUTHEAST ASIA (3) II** Fryer
Southeast Asia in world economy. Human and physical resources basis and returns achieved by various methods of land utilization. National economies of continental and insular Southeast Asia, problems and prospects of modernization.
- 361 (561) GEOGRAPHY OF AUSTRALIA AND NEW ZEALAND (2) I** Fryer
Australia and New Zealand in postwar world. Physical environment and rural industries. Demographic movements, industrialization, urbanization.
- 365 (571) GEOGRAPHY OF THE PACIFIC (3) I** Decker
Physical character of the Pacific and its islands; cultural, political, economic geography of Melanesia, Micronesia, Polynesia (except Hawaii).

- 368 (578) GEOGRAPHY OF HAWAII (3) II** **Piianaia**
Regional, physical, cultural geography. Detailed study of the people and resources.
- 650 (660) SEMINAR IN GEOGRAPHY OF ASIA (3) I, II** **Staff**
(1) Asia, (2) China, (3) Japan, (4) Southeast Asia, (5) South Asia. Pre: consent of instructor. May be repeated.
- 665 SEMINAR IN GEOGRAPHY OF THE PACIFIC (3) II** **Decker**
Investigation of geographic problems of Melanesia, Micronesia, Polynesia. Pre: consent of instructor. May be repeated.

TECHNIQUES AND METHODOLOGY

- 370 (235) AIRPHOTO AND IMAGE INTERPRETATION (2) I, II (1 L, 1 Lb)** **S. D. Chang**
Quantitative and qualitative interpretation of photographic, infrared, radar imagery. Use of aerial photography, space photography, other remote sensors as tools for research in physical and social sciences. Pre: Geog 101 or Geosc 102 or consent of instructor.
- 375 (430) CARTOGRAPHY (3) I, II (2 L, 1 Lb)** **S. D. Chang**
Principles of cartography, including map scales, grid systems, map projection, compilation, symbolism, map reproduction. Laboratory practice with cartographic equipment; techniques of quantitative mapping and terrain presentation.
- 380 (440) QUANTITATIVE METHODS IN GEOGRAPHY (3) I** **Armstrong**
Basic concepts and techniques: data collection, probability theory, tests of hypothesis, sampling methods, analysis of variance and regression, correlation analysis. Application to spatial problems.
- 680 (640) ADVANCED QUANTITATIVE METHODS IN GEOGRAPHY (3) II** **Staff**
Application to geographical research of advanced techniques. Variable topics may include multivariate analysis and regression, factor analysis, graph theory, linear programming, Fourier series and harmonic analysis, Markov chains, game theory. Pre: 380 and adequate math background. May be repeated.
- 685 (635) COMPUTER APPLICATIONS IN GEOGRAPHY (3) II** **Pitts**
Special purpose spatial computer programs; computer simulation. Students expected to solve individual research problems. Pre: 380 and some introduction to computer language.

READING, RESEARCH, GENERAL

- 399 DIRECTED READING (arr.) I, II** **Staff**
Limited to senior majors with 2.7 grade-point ratio, or 3.0 grade-point ratio in geography.
- 638 (605) HISTORICAL GEOGRAPHY (3) I** **Manchester**
Methodological approach to reconstruction of physical and cultural geography of an area at specific time. Pre: consent of instructor, 601, and adequate background in physical geography and history. (Not offered 1968-69.)
- 690 (610) PRO-SEMINAR IN GEOGRAPHY (5) I** **Fuchs, Staff**
Bibliographical and field methods, research design; concepts and theory in regional physical, economic, cultural geography. Required of entering graduate students. Pre: consent of instructor.
- 691 (601) HISTORY OF GEOGRAPHIC THOUGHT (3) II** **Manchester**
Development of geographic thought from early Greece to present. Emphasis on origins of current trends and relations to contemporary thought in natural and social sciences.
- 700 (680) SEMINAR IN GEOGRAPHY (3) I** **Staff**
Study and discussion of significant topics and problems. May be repeated.

- 750 (750) RESEARCH SEMINAR (3) I, II** Staff
 Selected problems in research. (1) Climatology, (2) biogeography, (3) medical geography, (4) resource management, (5) population geography, (6) economic geography, (7) urban geography, (8) geographic aspects of economic development, (9) cultural geography.
- 791 (615) FIELD CAMP (1) I** Staff
 Field research problems. Camp held between semesters on a neighbor island. Students expected to pay own travel and camp expenses. Pre: 690.
- 799 (699) DIRECTED RESEARCH (arr.) I, II** Staff
 Pre: consent of instructor.
- 800 THESIS RESEARCH (arr.) I, II** Staff

Geosciences (Geosc)

Senior Professor MACDONALD; Professors ABBOTT, W. ADAMS, CHIU, COX, LAURILA, RAMAGE, SUTTON, WOOLLARD; Associate Professors DAUGHERTY, MOBERLY, ROSE, SADLER; Assistant Professors C. ADAMS, FAN, FURUMOTO, KHAN, LAVOIE, MALAHOFF, MANGHNANI, PANKIWSKY, PETERSON, RESIG; Lecturer THOMAS

101-102 or consent of instructor prerequisite to all courses above 204.

- 90 (201) EARTH SCIENCE SURVEY (6) I, II** (two ½-hr TV lec/wk, one 3-hr Lb)
 Survey of earth sciences emphasizing Hawaiian environment, designed for elementary and junior high school teachers, presented on ETV Channel 11. Saturdays 9-12 devoted to lab work, review, examinations, field trips. Topics include meteorology, physical oceanography, volcanology, geology, geophysics.
- 101-102 INTRODUCTION TO GEOSCIENCES (4-4) Yr. (3 I, 1 Lb)**
 Both sections offered both semesters.
 Integrated survey ranging from center of earth to limits of solar system, emphasizing unifying physical principles. 101: meteorology, oceanography, earth as a planet; 102: geology, solid earth geophysics emphasizing Hawaiian Islands (101 not pre.); field trips.
- 799 (699) DIRECTED RESEARCH (arr.) I, II**
 Pre: consent of instructor.
- 800 THESIS RESEARCH (arr.) I, II**
 Credit toward major may be granted in following courses:
 Chemistry 133, 134, 432, 351, 352
 Civil Engineering 320, 321, 322, 350, 424
 Geography 300, 400, 375, 314, 600
 Oceanography 620, 622, 623, 625, 633
 Soil Science 304, 460, 461, 661

GEODESY

- 457 INTRODUCTION TO GEODETIC SCIENCE (3) I** Laurila
 Resections and intersections on plane. Parameters defining ellipsoid, various latitudes, radii of curvature, geodesic, normal section, great elliptic, chords. Solution of ellipsoidal triangles, Legendre's method, Additament method. Direct and inverse solutions for short distances. Strength of figure. Mathematical projections of ellipsoid. Basic theory of electronic surveying. Pre: Math 206 or equivalent.
- 481 POTENTIAL THEORY AND GRAVITY (3) I** Furumoto
 Potential theory, force fields, harmonic functions, Dirichlet's problem as applied to earth's surface and external gravity field and magnetism. Concept of geoid and deflection of the vertical. Significance of gravity anomalies. Relation between earth's gravity field and its internal structure. Pre: Math 232 or consent of instructor.

**482 (686) ELEMENTS OF SATELLITE GEODESY AND
CELESTIAL MECHANICS (3) II****Khan**

Differential operators and integral theorems in vector analysis. Introduction to spherical harmonics. Motion of satellite in central force field. Significant perturbations. Elementary treatment to express disturbing potential in terms of Keplerian elements. Pre: 457 and Math 232 or consent of instructor.

681 PHYSICAL GEODESY I (3) I**Daugherty**

Mathematical theory of physical geodesy. Solutions of boundary value problems of physical geodesy. Classical solutions involving reductions to geoid. Modern solutions involving solution of boundary value problems at earth's surface. Pre: concurrent registration in 481 and Math 232 or consent of instructor.

682 PHYSICAL GEODESY II (3) II**Daugherty**

Problems connected with carrying out practical computations in physical geodesy. Accuracy of available gravity data. Methods of approximating gravity in unsurveyed areas. Numerical methods of computing geoid undulations and deflections of the vertical. Pre: 481, 681, or consent of instructor.

683 SATELLITE GEODESY (3) I**Khan**

Methods of utilization of artificial satellites for geodetic purposes. Use of orbital perturbations for determination of gravitational field. Use of satellites in geometric geodesy. Pre: 681 and 686 or consent of instructor.

684 ADVANCED GEODESY (3) II**Laurila**

Precision leveling. Baseline measurements. Orthometric and dynamic heights. Geodetic computations of arc lengths. Fundamentals of spatial coordinates in terrestrial geodesy. Changes in geodetic coordinates due to changes in reference ellipsoid. Direct and inverse problems for medium and long distances. Derivations of ellipsoidal projections. Differential formulae. Modern electronic surveying equipment, reductions and applications in geodesy. Pre: 457.

685 ADJUSTMENT COMPUTATION (3) II**Laurila**

Theory of errors, distributions, systematic, random, criteria. Error propagation, weights of observations. Presentation of residuals. Adjustment of observations, least squares principle, observation equations, condition equations, applications to problems in geodetic science. Solution of normal equations, Gaussian method of substitutions, Cholesky-Rubin method. Standard errors and weights after adjustment, variances, covariances and functions. Error ellipses. Pre: 457 and Math 206.

687 GEODETIC ASTRONOMY (3) I

Introduction and review of spherical astronomy, celestial coordinate system, systems of time measurements, variations in star coordinates. Determination of second order astronomic positions. Determination of first order astronomic positions. Solar eclipses and occultations. Pre: 684 and 685.

GEOLOGY**301 (401) MINERALOGY (3) I (2 L, 1 Lb)****Pankiwskyj**

Mineral structure, composition and identification by physical and X-ray techniques; crystal form and symmetry. Pre: Chem 113-117.

302 (402) PETROLOGY (3) II (2 L, 1 Lb)**Macdonald**

Composition, classification, origin, occurrence of rocks. Pre: 301.

303 (405) STRUCTURAL GEOLOGY (3) I (2 L, 1 Lb)

Folds, faults, joints, folded and faulted mountain systems, mechanics of their formation. Pre: 302, Phys 170.

305 (205) GEOLOGICAL FIELD METHODS (2) I (8 hrs. Saturday in field)**Abbott**

Methods used in geological investigations in the field. Pre: 303, or concurrent registration.

316 (416) GEOMORPHOLOGY (3) II**Abbott**

Study of landforms and their relation to geologic structure. (Not offered 1968-69.)

- 320 (420) MARINE GEOLOGY (3) I (2 L, 1 Lb)** Moberly
Survey of marine geologic processes and forms. Field work involving marine geologic equipment and techniques.
- 410 HISTORICAL GEOLOGY (3) I (2 L, 1 Lb)** Moberly
Biological and temporal geology. Origin and evolution of earth and its life. Pre: 302 and 303.
- 411 PALEONTOLOGY (3) I (1 L, 2 Lb)** Resig
Principles of paleozoology and paleobotany. Morphology and identification of fossils. Pre: 410 or Zool 101, or consent of instructor.
- 412 MICROPALAEONTOLOGY (3) II (2 L, 1 Lb)** Resig
Morphology and taxonomy of microfossils and recent microscopic remains capable of fossilization. Ecologic-paleoecologic stratigraphic and sedimentologic significance of micro-biota. Pre: consent of instructor.
- 424 OPTICAL MINERALOGY (4) I (2 L, 2 Lb)** Pankiwskyj
Crystal symmetry, crystal chemistry, introduction to petrographic microscope, optical properties of minerals. Pre: 302 or consent of instructor.
- 425 GEOCHEMISTRY (3) I**
Distribution of chemical elements in earth's crust and oceans, their relation to rock types and geologic processes. Pre: 302.
- 426 IGNEOUS AND METAMORPHIC PETROGRAPHY (3) II (1 L, 2 Lb)** Pankiwskyj
Microscopic and related laboratory studies of rocks, petrogenic theory. Pre: 424.
- 427 SEDIMENTARY PETROLOGY (3) II (2 L, 1 Lb)** Moberly
Origin of sediments, sedimentary rocks, stratigraphy; their laboratory study. Pre: 410 and 424.
- 430 GEOLOGY OF ASIA (2) I** Fan
Stratigraphy, structure and history of major geologic provinces of Asia. Pre: 302, 303, or consent of instructor. (Alt. yrs.; not offered 1968-69.)
- 440 ECONOMIC GEOLOGY (2-2) Yr.** Abbott, Moberly
(a) Origin and occurrence of metallic ores and industrial minerals; (b) origin and occurrence of mineral fuels. Both parts may be taken for credit. Pre: 302 and 303. (Alt. yrs.; not offered 1968-69.)
- 601 SEMINAR IN VOLCANOLOGY (2) II** Macdonald
Types and mechanisms of volcanic action. Pre: 302. (Alt. yrs.; not offered 1968-69.)
- 602 SEMINAR IN PETROLOGY (2) II**
Seminars and lectures on origin and occurrence of igneous and metamorphic rocks. (a) Igneous petrology (Pre: 426); (b) phase petrology (Pre: 425); (c) metamorphic petrology (Pre: phase petrology, 426). May be repeated for credit.
- 607 SEMINAR IN ORE DEPOSITS (2) II** Abbott
Consideration of physical and chemical processes and structural controls in formation of metalliferous ore deposits. Pre: 302, 303. (Alt. yrs.; not offered 1968-69.)
- 609 SEMINAR IN GEOMORPHOLOGY (2) II** Abbott
Consideration of special problems and geologic processes in development of land forms. Pre: 316. (Alt. yrs.; not offered 1968-69.)
- 614 ADVANCED FIELD STUDY (arr.) I, II**
Field projects in geological sciences.
- 617-618 SEMINAR IN GEOTECTONICS (3-3) Yr.** Moberly
Evolution of the crust, from structure, petrology, geophysics, stratigraphy. 617: ocean basins and margins; 618: shields and mountain systems. (Alt. yrs.; offered 1968-69.)

- 619-620 SEDIMENTOLOGY AND STRATIGRAPHY (3-3) I, II (2 L, 1 Lb)** Moberly, Fan
Lectures and seminars on physical, chemical, biological and temporal controls of sedimentation. Sedimentary petrology and stratigraphic analysis. Pre: consent of instructor. (Alt. yrs.; not offered 1968-69.)
- 624 TOPICS IN GEOCHEMISTRY (3) I, II (2 L, 1 Lb)** Pankiwskyj
Discussion and laboratory work in analytical methods. (a) X-ray analysis and X-ray crystallography. I. Pre: 302. (b) Mineral equilibria at high and low temperatures and pressures. II. Pre: 302 and credit or registration in Chem 351-352.
- 625 SEMINAR IN CURRENT RESEARCH TOPICS (arr.) I, II**
(a) Paleontology; (b) applied geology; (c) marine geology; (d) regional geology; (e) geochemistry; (f) lunar and planetary geology. May be repeated for credit.

HYDROLOGY

- 306 (406) WORK OF WATER (4) II (3 L, 1 Lb)** Peterson
Dynamics of streams, waves, currents, ground water. Pre: 101-102.
- 455 HYDROGEOLOGY (4) I (3 L, 1 Lb)** Peterson
Occurrence, characteristics, movement, quality, development of water in earth's crust. Pre: 306 or consent of instructor.
- 605 SEMINAR IN ENGINEERING AND GROUND-WATER GEOLOGY (3) I, II**
Geologic controls on occurrence and development of ground water; geologic effects on man-made structures. Pre: consent of instructor. May be repeated for credit.

METEOROLOGY

- 342 METEOROLOGICAL INSTRUMENTS AND OBSERVATIONS (3) II (2 L, 1 Lb)**
Principles of meteorological instruments and their care; instrumental and visual weather observation; coding. Pre: credit or registration in Math 205. (Alt. yrs.; offered 1968-69.)
- 352 (542) THEORETICAL METEOROLOGY I (4) I (3 L, 1 Lb)** C. Adams
Atmospheric statics; optical, acoustical, electrical phenomena; condensation and precipitation; radiation and heat balance; thermodynamics; kinematics. Pre: Phys 275; concurrent registration in 310, or consent of instructor.
- 353 (543) THEORETICAL METEOROLOGY II (4) II (3 L, 1 Lb)** C. Adams
Basic concepts of fluid motion applied to atmosphere. Equations of motion; special cases of balanced motion; principles of numerical weather prediction. Pre: 352.
- 445 (545) TROPICAL METEOROLOGY (3) II**
History; tropical clouds and hydrometeors; easterly waves and typhoons; monsoons; local and diurnal effects. Pre: 352. (Alt. yrs.; offered 1968-69.)
- 450 (550) METEOROLOGICAL ANALYSIS LABORATORY (3) II** C. Adams
Techniques of portraying and analyzing atmospheric structure and weather systems in middle and high latitudes; modern methods of forecasting extratropical systems. Pre: credit or registration in 353. (Alt. yrs.; not offered 1968-69.)
- 452 (551) TROPICAL ANALYSIS LABORATORY (2) II**
Techniques of portraying and analyzing atmospheric structure and weather systems in tropical and equatorial regions; modern methods of forecasting tropical systems. Pre: credit or registration in 353. (Alt. yrs.; offered 1968-69.)
- 640 (565) ADVANCED TROPICAL METEOROLOGY (5) I (2 L, 3 Lb)** Ramage, Sadler
Modern methods of observing and analysis; results of research applied to problems of forecasting in the tropics.
- 642 (742) ATMOSPHERIC TURBULENCE (3) I**
Equations of motion for turbulent flow; turbulent diffusion; atmospheric boundary layer processes. Pre: 353. (Alt. yrs.; offered 1968-69.)

643 (743) CLOUD PHYSICS (3) I

Physical processes attending formation and subsequent history of clouds and cloud particles.

644 (744) PHYSICAL METEOROLOGY (3) II

Advanced treatment of radiation, atmospheric optics, acoustics, electricity, visibility; radar meteorology. Pre: 352. (Alt. yrs.; offered 1968-69.)

646 (746) STATISTICAL METEOROLOGY (3) I

Frequency distributions of atmospheric variables, probability; correlation and regressions; time series analysis; statistical forecasting. Pre: Math 231. (Alt. yrs.; not offered 1968-69.)

745 NUMERICAL ANALYSIS AND PREDICTION (5) II (1 L, 4 Lb)

Theory and practice of objective analysis and numerical weather prediction; formulation of prediction equations, numerical integration procedures; programming of high-speed electronic computers.

750 ADVANCED THEORETICAL METEOROLOGY I (3)

Chiu

Basic equations of meteorology in vector form and in various coordinate systems; circulation and vorticity theorems; classical hydrodynamics. Pre: 353 or equivalent; knowledge of ordinary and partial differential equations.

751 ADVANCED THEORETICAL METEOROLOGY II (3) II

Chiu

Basic theories of the mechanics of compressible fluids; atmospheric waves and tides; stability problems. Pre: 750.

752 SPECIAL TOPICS IN METEOROLOGY (3) II

Concentrated studies on selected atmospheric problems. Pre: 751 or consent of instructor. May be repeated for credit.

765 SEMINAR IN METEOROLOGY (1) I, II

(a) General. (b) Research results. May be repeated for credit.

SOLID EARTH GEOPHYSICS

351 (451) SEISMOLOGY (3) II

W. Adams

Elastic properties of rocks, behavior of earthquake waves; earthquake recording instruments; reading of seismograms. Pre: Phys 170. (Alt. yrs.; not offered 1968-69.)

360 (460) PRINCIPLES OF GEOPHYSICS (3) I

Rose

Physical laws and physical concepts which describe forces and materials of the earth. Pre: 101-102 (or concurrent registration), Phys 272.

463 PHYSICAL PROPERTIES OF EARTH MATTER (3) II (2 L, 1 Lb)

Manghnani

Basic concepts of materials behavior, deformation of rocks and minerals, related rheological problems. Physical properties of crystalline solids under high pressure, with emphasis on laboratory study; equations of state.

465-466 GEOPHYSICAL EXPLORATION (4-4) Yr. (3 L, 1 Lb)

Malahoff, W. Adams

Theory and methods of exploration on land and sea by means of gravity, magnetic, seismic and electrical techniques. Pre: Math 206 (or concurrent registration). (Alt. yrs.; offered 1968-69.)

655 SEISMIC SOURCE MECHANISMS (3) II

W. Adams, Furumoto

Theoretical and observational study of source mechanisms for explosions and earthquakes in aerial, underwater, or underground environments. Pre: consent of instructor. (Alt. yrs.; not offered 1968-69.)

656 SEISMIC PROPAGATION PHENOMENA (3) I

Furumoto, W. Adams

Propagation of energy through solid media having interfaces with considerations of effects of heterogeneity and anisotropy. Pre: consent of instructor. (Alt. yrs.; not offered 1968-69.)

- 657 ANALYSIS AND SYNTHESIS OF SEISMOGRAMS (3) I** **W. Adams, Furumoto**
Development of theoretical seismograms for comparison with observed seismograms utilizing analytical and numerical techniques. Pre: consent of instructor. (Alt. yrs.; offered 1968–69.)
- 658 SEISMOMETRY AND SEISMOLOGICAL MODEL STUDY (3) II** **Sutton**
Theoretical and practical investigations of seismological instrumentation; application of seismological model studies to interpretation of field observations. Selected topics from other areas in geophysics. Pre: consent of instructor. (Alt. yrs.; offered 1968–69.)
- 660 SEMINAR IN SOLID EARTH GEOPHYSICS (arr.) II**
(a) Tectonics and crustal deformation. (b) Isostasy. (c) Properties of earth matter. (d) Physics of interior of earth. (e) Statistical interpretation. (f) Tsunamis. (g) Geomagnetism. Pre: consent of instructor. May be repeated for credit.
- 661 MARINE GEOPHYSICS (3) II (2 L, 1 3-hr Lb)**
Geophysical studies of ocean basin (primarily Pacific) by gravity, heat-flow, magnetic and seismic methods. Pre: 465 or 320 or 305 or Ocean 622. (Not offered 1968–69.)
- 662 PRINCIPLES OF THEORETICAL GEOPHYSICS (3) I** **Furumoto**
Continuum mechanics, potential theory, thermodynamics as applied to tectonics and physics of the earth's interior. Pre: Phys 310–311 or consent of instructor.
- 665 NUMERICAL METHODS IN GEOPHYSICAL DATA ANALYSIS (3) II** **Loomis**
Representation of observation by numbers, numerical filtering, power spectra, automatic data processing. Pre: Math 301, or 403, or 431 or consent of instructor. (Alt. yrs.; not offered 1968–69.)

History (Hist)

Professors AKITA, COWING, HUNTER, HURWITZ, D. JOHNSON, W. JOHNSON, MARGULIES, MURPHY, SAKAI, SHINODA, STEIN, VAN NIEL, VELLA, J. WHITE; Associate Professors BEECHERT, ERNEST, KWOK, MAURER, SAVILLE, SPEIDEL; Assistant Professors BERNSTEIN, CONNORS, DAWS, FERGUSON, KANG, LAMLEY, MAMMITZSCH, J. McCUTCHEON, MCGLONE, MORRIS, RAPSON, SHARMA, WINCHESTER; Instructors EARLE, RING; Associate Professor WADE

- 151–152 WORLD CIVILIZATION (3–3) Yr.** **Daws, Connors**
Development of civilization from its prehistoric origins to present. Prerequisite for advanced courses. (Freshmen and sophomores only.)
- 161–162 WORLD CULTURES IN PERSPECTIVE (3–3) Yr.**
Problems in world history; development of ideas, institutions. Pre: consent of instructor. (Alternative for 151–152; freshmen only.)
- 241–242 (341–342) INTRODUCTION TO ASIAN HISTORY (3–3) Yr.** **Sakai, Van Niel, Sharma**
Historical survey of major civilizations of Asia from earliest times to present, including East Asia, Southeast Asia and South Asia.
- 281–282 (181–182) INTRODUCTION TO AMERICAN HISTORY (3–3) Yr.** **Cowing, McGlone**
Interpretive survey of U.S. history from earliest settlements to present.
- 351–352 (251–252) FOUNDATIONS OF WORLD CIVILIZATIONS (3–3) Yr.** **Winchester**
Evolution of Eastern and Western civilizations from ancient times to present; emphasis on Western civilizations. Prerequisite for advanced courses. (Alternative for 151–152; juniors and seniors only.)
- 396 HISTORY COLLOQUIUM (3) I** **Rapson**
Examination of special problems in history, particularly those cutting across national boundaries such as totalitarianism, nature of wars, consequences of industrialism. Pre: consent of instructor. Recommended for honors students.

- 401-402 (551-552) HISTORY OF SOUTH ASIA (3-3) Yr.** Stein
General historical survey of India, Pakistan, Ceylon, from earliest times to present.
- 405-406 (529-530) HISTORY OF SOUTHEAST ASIA (3-3) Yr.** Van Niel, Vella
Historical survey of Southeast Asian civilizations and states, including Burma, Thailand, Laos, Cambodia, Vietnam, Malaysia, Indonesia and Philippines.
- 409-410 (531-532) HISTORY OF CHINA (3-3) Yr.** Lamley
Course of Chinese civilization from earliest times.
- 413-414 (541-542) HISTORY OF JAPAN (3-3) Yr.** Morris
Historical survey of Japanese culture, government, economics, institutions.
- 417-418 (545-546) HISTORY OF KOREA (3-3) Yr.** Kang
Detailed political, economic and social survey of Korean history.
- 421 (439) AUSTRALIA AND NEW ZEALAND (3) I, II** Murphy
Major historical developments from colonization to independent nationhood; present problems and policies. (Alt. yrs.; not offered 1968-69.)
- 422 (571) HISTORY OF OCEANIA (3) I, II** Murphy
European impact and native response in major groups, from exploration to exploitation to trusteeship. European or Pacific credit. (Alt. yrs.; not offered 1968-69.)
- 424 (577) HISTORY OF THE HAWAIIAN ISLANDS (3) II** Hunter
General course, but with some detail. Emphasis on period of monarchy. Interchangeable credit: Asian, Pacific or American.
- 425 (575) THE UNITED STATES IN THE PACIFIC (3) I** D. Johnson
Growth of economic and political interests and policies in Pacific area. Interchangeable credit: Asian, Pacific or American.
- 427-428 (401-402) GREEK AND ROMAN CIVILIZATIONS (3-3) I, II** Speidel
Study of history, art and culture of Greece and Rome. (Cross-listed with European languages department.)
- 430 HISTORY OF SCIENCE (3) I** Becker
Man's changing ideas concerning universe reflected against historical setting. Pre: one yr. of natural science. (Cross-listed with general science department.)
- 431-432 (405-406) MEDIEVAL EUROPE, 300-1300 (3-3) Yr.**
Cultural, social, economic and political changes in development of European community.
- 435 (409) RENAISSANCE AND REFORMATION, 1300-1600 (3) I**
Ideas and institutions in early period of commercial and national development.
- 437 (410) EARLY MODERN EUROPE, 1600-1800 (3) II** Ferguson
Thought and culture of Europe in age of expansion.
- 439 (425) EUROPE IN THE 19TH CENTURY (3) I** Saville
Major political, social, economic and intellectual trends in evolution of Europe from Napoleon to end of World War I.
- 440 (426) EUROPE SINCE VERSAILLES (3) II** Saville
Problems of contemporary Europe and their historical background.
- 441-442 EAST CENTRAL EUROPE (3-3) Yr.** Winchester
General history of Poland, Danubian region and Balkans from Middle Ages to present. (Alt. yrs.; offered 1968-69.)
- 443-444 HISTORY OF GERMANY (3-3) Yr.** Saville
Major political, social, economic and intellectual trends in evolution of Germany. (Alt. yrs.; not offered 1968-69.)
- 445-446 HISTORY OF FRANCE (3-3) Yr.** Ferguson
Major political, social, economic and intellectual trends in evolution of France.

- 447-448 (431-432) HISTORY OF ENGLAND (3-3) Yr.** Hurwitz, Bernstein
Major trends in development of English civilization from origins to contemporary period.
- 449-450 (451-452) HISTORY OF RUSSIA (3-3) Yr.** Wade
Survey of development of Russian thought and institutions, and of territorial expansion. Impact of revolutionary changes.
- 451-452 (527, 553) MODERN RUSSIAN AND SOVIET FOREIGN POLICY (3-3) Yr.** White
Territorial expansion; frontier and nationality questions; cultural, diplomatic, economic and ideological relations.
- 453-454 INTELLECTUAL HISTORY OF RUSSIA AND THE SOVIET UNION (3-3) Yr.** Wade
Religious and secular traditions, intellectual and social developments, political movements.
- 455-456 EUROPEAN INTELLECTUAL HISTORY (3-3) Yr.** Connors
Undergraduate seminar concentrating on great debates in Western thought from end of Middle Ages to 20th century. Emphasis on discussion of primary source materials and oral reports. Not a lecture course; therefore no auditors permitted.
- 459 (435) CONSTITUTIONAL HISTORY OF ENGLAND (3) I, II** Ernest
Anglo-Saxon institutions; Norman innovations; legal, administrative, parliamentary development under Angevins; rise of cabinet system. (Alt. yrs.; not offered 1968-69.)
- 461 COLONIAL AMERICA TO 1790 (3) I** Cowing
Transit of European culture to North America, independence, Constitution.
- 462 THE YOUNG REPUBLIC: U.S. HISTORY 1789-1841 (3) II** McGlone
Federalist decade, rise of Jeffersonianism, War of 1812, Age of Jackson.
- 463 CRISIS OF THE UNION: U.S. HISTORY 1841-1877 (3) I** McGlone
National expansion, sectional conflict; Civil War and Reconstruction.
- 464 THE AGE OF INDUSTRY: U.S. HISTORY 1877-1920 (3) II** Beechert
Response to industrialism and emergence of U.S. as world power.
- 465 TROUBLED PEACE: U.S. HISTORY 1920-1941 (3) I** W. Johnson
The twenties, depression and New Deal, isolationism and involvement in World War II.
- 466 AMERICA AND WORLD LEADERSHIP: THE U.S. SINCE 1941 (3) II** Cowing
World War II, Cold War and beyond; politics from Roosevelt to Johnson; McCarthyism; civil rights; economic and social development.
- 471-472 DIPLOMATIC HISTORY OF THE UNITED STATES (3-3) Yr.** D. Johnson
History of American foreign policy and diplomacy.
- 475 CONSTITUTIONAL HISTORY OF THE UNITED STATES (3)**
Origins and development of the constitution from colonial times to present. (Alt. yrs.; not offered 1968-69.)
- 477 (377) ECONOMIC HISTORY OF THE UNITED STATES (3) I** Beechert
Emphasis on role of techniques, agricultural developments, entrepreneur, rise of labor movement. Pre: Econ 150-151 recommended.
- 481-482 (481) AMERICAN THOUGHT AND CULTURE (3-3) Yr.** Rapson
Advanced course in American social customs, institutions, intellectual pursuits.
- 483 (491) THE WEST IN AMERICAN HISTORY (3) I** McCutcheon
Western expansion forces in development of economic, cultural, political trends of nation. (Alt. yrs.; offered 1968-69.)
- 484 (492) THE SOUTH IN AMERICAN HISTORY (3)**
Southern economic, social, intellectual, political development, with special attention to race relations.

- 485 (493) THE CITY IN AMERICAN HISTORY (3) II** McCutcheon
Urban growth as factor in shaping social, economic, political, cultural life in U. S. (Alt. yrs.; offered 1968-69.)
- 486 (379) REPRESENTATIVE AMERICANS (3)**
Series of biographical sketches of leading characters in American history from Revolution to present. (Alt. yrs.; offered 1968-69.)
- 487-488 (511-512) HISTORY OF LATIN AMERICA (3-3)**
Political, economic, social development of Latin American republics from colonial times to present. (Alt. yrs.; not offered 1968-69.)
- 494-495 (394-395) SENIOR HONORS THESIS (2-2)**
Preparation of research paper under individual faculty supervision. Required for graduation with honors in departmental honors program.
- 497 (397) SENIOR TUTORIAL IN HISTORY (4)**
Analysis of sources and evaluation of methods of historical writing. Research in field of special interest. Required for majors, except those in honors program.
- 499 (399) DIRECTED READING (arr.)**
Individual projects in various fields. Limited to senior majors with 2.7 grade-point average, or 3.0 in history. (1) American, (2) Pacific, (3) Japanese, (4) European, (5) English, (6) Chinese, (7) Russian, (8) Hawaiian, (9) South Asian, (10) Southeast Asian, (11) Korean.
- All courses 600-800, except 601 and 602, require consent of instructor.*
- 601 (711) SEMINAR IN HISTORICAL METHOD (3) I, II** Saville
Training in evaluation of sources and preparation of theses.
- 602 (712) SEMINAR IN HISTORIOGRAPHY (3) II** Hunter
History of history and historians.
- 611 SEMINAR IN EUROPEAN HISTORY (3) I, II**
Selected problems for reading and research. (1) Ancient, (2) Medieval, (3) Early Modern, (4) Modern, (5) England.
- 618 BRITISH EMPIRE AND COMMONWEALTH (3) II** Murphy
British Empire in modern times. (Alt. yrs.; offered 1968-69.)
- 619 (671-672) SEMINAR IN RUSSIAN HISTORY (3) I or II** Wade
Research in problems on history of Russia and Soviet Union.
- 620 (671-672) SEMINAR IN RUSSIAN FOREIGN POLICY (3) I, II** White
Research in problems of foreign policy in Russia and Soviet Union.
- 631 (731) ADVANCED PROBLEMS AND READING IN AMERICAN HISTORY (3) I** Rapson
Interpretations and literature of important problems of American history. (Alt. yrs.; not offered 1968-69.)
- 635 THE COLONIAL PERIOD IN AMERICAN HISTORY (3) I** Cowing
Reading and research in political, social and intellectual history. Pre: 461 or equivalent.
- 636 SEMINAR IN 19TH CENTURY AMERICAN HISTORY (3) I** McGlone
Research in Early National Period, Jacksonian democracy, Civil War and Reconstruction. Pre: 462 or equivalent.
- 637 THE PROGRESSIVE PERIOD IN AMERICAN HISTORY (3) I or II** Margulies
Research in problems relating to rise, character and decline of Progressive Movement, 1872-1924. Pre: 464 or equivalent. (Not offered 1968-69.)

- 638 SEMINAR IN RECENT AMERICAN HISTORY (3) I** W. Johnson
Research in U.S. history since World War I. Pre: 465 or 466 or equivalent.
- 640 SEMINAR IN AMERICAN SOCIAL AND INTELLECTUAL HISTORY (3) II** Rapson
Research in history of American thought and culture.
- 641 SEMINAR IN AMERICAN DIPLOMATIC HISTORY (3) II** D. Johnson
Selected problems in development of U.S. foreign policy and its implementation.
- 654 SEMINAR IN THE HISTORY OF MAINLAND SOUTHEAST ASIA (3) I, II** Vella
Studies in histories of peoples and states of Burma, Thailand, Cambodia, Laos and Vietnam.
- 655 SEMINAR IN THE HISTORY OF ISLAND SOUTHEAST ASIA (3) I, II** Van Niel
Studies in histories of peoples and states of Malaysia, Indonesia and Philippines.
- 661 SEMINAR IN CHINESE HISTORY (3) I, II** Kwok, Lamley
Problems and reading in political, social, cultural history of China.
- 663 SEMINAR IN INDIAN HISTORY (3) I, II** Stein, Sharma
Selected problems and readings in history of India and influence of Indian culture in southern Asia. Individual reports. (1) Ancient India, (2) South India, (3) Muslim India, (4) Modern South Asia.
- 665 SEMINAR IN JAPANESE HISTORY (3) I, II** Akita, Sakai
Main fields of Japanese historical research; principal sources of bibliographical information; selected problems in modern Japanese history.
- 667 SEMINAR IN KOREAN HISTORY (3)** Kang
Research in selected topics in Korean history.
- 675 SEMINAR IN PACIFIC HISTORY (3) II** Murphy
Selected topics and research papers in history of Oceania, with special emphasis on British colonies.
- 701 (713) RESEARCH MATERIALS AND METHODS IN ASIAN HISTORY (3) I or II** Nunn
Training in bibliography and research methods in Asian history. Discussions and special problems.
- 713-714 (714-715) CHINESE HISTORICAL LITERATURE (3-3) Yr.**
Systematic reading and use of numerous genres of Chinese historical literature and documents. Knowledge of Chinese required.
- 717-718 (659-660) CHINESE INTELLECTUAL HISTORY (3-3) Yr.** Kwok, Lamley
Intensive study in selected phases of history of Chinese thought and institutions. Pre: 409-410 or equivalent with consent of instructor. Knowledge of Chinese preferred but not required.
- 721-722 (741-742) CHINA FROM CLASSICAL ANTIQUITY TO 750 (3-3) Yr.**
Detailed inquiry into foundations and elaborations of Chinese tradition. Pre: 409-410 or equivalent, with consent of instructor. Open to seniors with consent of instructor. (Alt. yrs.; offered 1968-69.)
- 731 (666) SEMINAR IN POLITICAL HISTORY OF MODERN JAPAN (3) II** Akita
Bibliography, controversies and schools of thought among major Japanese political historians. Selected topics and research papers. Reading knowledge of Japanese required.
- 733-734 (667-668) JAPANESE INTELLECTUAL HISTORY (3-3) Yr.** Shinoda
Intensive study in selected phases of history of Japanese thought and institutions. Pre: 413-414 or consent of instructor. Knowledge of Japanese preferred.
- 735-736 (669-670) SEMINAR ON PRE-MODERN JAPAN C. 850-1800 (3-3) Yr.** Morris
Bibliography, research tools, special problems. Recent controversies among Japanese scholars. Reading knowledge of Japanese required.

799 (699) DIRECTED RESEARCH (arr.)

Individual research topics in special fields. (1) American, (2) Pacific, (3) Japanese, (4) European, (5) English, (6) Chinese, (7) Russian, (8) Hawaiian, (9) South Asian, (10) Southeast Asian, (11) Korean.

800 THESIS RESEARCH (arr.)

Linguistics (Ling)

Professors BIGGS, ELBERT, GRACE, MCKAUGHAN, THOMPSON; Associate Professor BENDER;
Assistant Professors PARKER, SCHÜTZ, STAROSTA, TOPPING, TSUZAKI

102 INTRODUCTION TO THE STUDY OF LANGUAGE (3) I, II

Nature and workings of language; its role in culture and history.

320 (202) GENERAL LINGUISTICS (3) I, II

Approaches, concepts, component areas of linguistics; its development as a science.

410 (610) ARTICULATORY PHONETICS (3) I, II

Intensive training in recognition, reproduction, recording of speech sounds throughout the world; preparing student for field work, especially with unrecorded languages.

421 INTRODUCTION TO PHONOLOGICAL ANALYSIS (3) I, II

Introduction to phonemic analysis and phonological theory. Pre: 410, or concurrent registration.

422 INTRODUCTION TO GRAMMATICAL ANALYSIS (3) I, II

Introduction to morphological and syntactic analysis, grammatical theory. Pre: 421, or concurrent registration.

611 ACOUSTIC PHONETICS (3) II

Stream of speech analyzed according to acoustic properties and their function within given languages, with attention to articulatory correlates. Use of sound spectrograph in specific problems. Pre: 410.

615 THE NATURE OF LANGUAGE (3) I

Language as communication system, current theories of grammar, meaning, sociolinguistics, linguistic change and comparison.

621 PHONOLOGY (3) I, II

Phonological theory and problems of analysis. Pre: 421 or equivalent.

622 GRAMMAR (3) I, II

Grammatical theory and problems of analysis. Pre: 422 or equivalent.

630 FIELD METHODS (3) I, II

Work with native speakers of lesser-known languages to develop methods and techniques for collection and analysis of linguistic data. Pre: 621, 622 and consent of instructor.

645 INTRODUCTION TO COMPARATIVE METHOD (3) I

Fundamentals of comparative and historical method in linguistics with emphasis on Indo-European and attention to non-Indo-European languages having few or no written records. Pre: 621, 622 or consent of instructor.

650-651 ADVANCED LINGUISTIC ANALYSIS (3-3) Yr.

Advanced problems and discussion of theory, techniques, procedures in linguistics. Pre: 621, 622 and consent of instructor.

699 DIRECTED RESEARCH (arr.) I, II

Pre: graduate standing; consent of instructor.

750 SEMINAR (3) I, II

Reporting and discussion of current research in linguistics. Pre: consent of instructor. May be repeated.

760 PROBLEMS IN COMPARISON AND PRE-HISTORY (3) I, II

Special problems dealing with areas of language classification, measures of language divergence, dialect geography, other phases of comparative-historical linguistic study. Pre: 645. May be repeated.

770 (710) AREAL LINGUISTICS (3) I, II

Seminar dealing with structures of languages of various areas of world, topics depending on both resident and visiting staff specialties. Pre: 622. May be repeated.

780 ETHNO-LINGUISTICS (3) I

Seminar for advanced students of both linguistics and anthropology, dealing with methods and their application to research in these fields, with concentration on inter-relations between culture and language. Pre: consent of instructor.

800 THESIS RESEARCH (arr.)

Mathematics (Math)

Professors GREGORY, HADLEY, HALMOS, HASSE, MARCUS, MOOKINI; Associate Professors GROTH, LEAHEY, ROGERS, WEINBAUM, YEH; Assistant Professors CLARK, GRISWOLD, KOEHLER, MADER, SIU, STOUT, STRAUSS, WONG; Instructors GOO, IKEDA, LIM
Professor SHIELDS; Associate Professor NOBUSAWA; Assistant Professors FRASER, JOHN-SON, O'HARA, SHUKLA, STERN, WALLEN, WILLIAMSON

060 (001) ALGEBRA (0) I, II**Staff**

Elementary and intermediate algebra, emphasizing concepts of function, identity, equation. Equivalent to 3 credits.

100 SURVEY OF MATHEMATICS (3) I, II**Staff**

To acquaint non-specialist with position of mathematics in modern culture. Open to freshmen and sophomores who have not earned credit in 111 or above.

111 INTRODUCTION TO MATHEMATICS (3) I, II**Staff**

Study of structure and concepts of number systems. (Primarily for Education majors.)

134 PRE-CALCULUS MATHEMATICS (4) I, II**Siu**

Algebraic operations as applied to elementary functions and equations; graphs, trigonometric functions; lines and conics. Pre: two years of high school algebra and one year of plane geometry, or consent of department.

201 FINITE MATHEMATICS (3) I, II**Staff**

Algebra of sets, elementary probability theory, vectors and matrices, linear programming, theory of games. Pre: 134 or equivalent.

205 (135) CALCULUS I (4) I, II**Staff**

Basic concepts; techniques of differentiation; integration of algebraic and trigonometric functions with applications. Pre: 134 or equivalent.

206 (136) CALCULUS II (4) I, II**Clark**

Exponential, logarithmic and hyperbolic functions; techniques of integration; elements of three dimensional analytic geometry; multiple integration, infinite series; partial differentiation. Pre: 205 or equivalent.

231 MULTI-VARIABLE CALCULUS (3) I, II**Staff**

Vector-oriented study of functions of several variables; elements of linear algebra, line and surface integrals, divergence and curl. Pre: 206.

- 232 ORDINARY DIFFERENTIAL EQUATIONS (3) I, II** Gregory
First order equations; linear equations with constant coefficients; system of equations, Laplace transforms; applications. Pre: 231.
- 301 INTRODUCTION TO NUMERICAL ANALYSIS (3) I** Mookini
Iterative methods for algebraic problems, including convergence criteria and error analyses, interpolation and numerical integration. Pre: 231 and 232. 311 recommended.
- 311 LINEAR ALGEBRA (3) I, II** Staff
Algebra of matrices, linear equations, real vector spaces and transformations. Pre: 231.
- 321 ELEMENTARY TOPOLOGY (3) I**
Sets, topologies, mappings. Continuity and convergence. Illustrations of use of these concepts in analysis. Pre: 311 or consent of department.
- 351 FOUNDATIONS OF EUCLIDEAN GEOMETRY (3) I** Wong
Axiomatic Euclidean geometry and introduction to axiomatic method. Pre: 231 or consent of department.
- 352 NON-EUCLIDEAN GEOMETRIES (3) II** Wong
Study of hyperbolic geometry and other non-Euclidean geometries. Pre: 351 or consent of department.
- 402 PARTIAL DIFFERENTIAL EQUATIONS (3) I, II** Staff
Integral surfaces and characteristics of first and second order partial differential equations. Applications to equations of mathematical physics. Pre: 232.
- 403-404 METHODS OF HIGHER ANALYSIS (3-3) Yr.** Griswold
Vector calculus, functions of complex variable, residue theory, conformal mapping; Fourier series and integrals, Laplace transformation, special functions, partial differential equations, calculus of variations. Pre: 232.
- 406 DIFFERENCE METHODS FOR DIFFERENTIAL EQUATIONS (3) I** Groth
Finite differences, initial value problems for ordinary differential equations, finite difference methods for partial differential equations. Pre: 402 or 404 or equivalent.
- 412 ABSTRACT ALGEBRA (3) I, II** Mader
Introduction to basic algebraic structures including groups, rings, fields. Pre: 311.
- 420 INTRODUCTION TO THE THEORY OF NUMBERS (3) I** Rogers
Congruences, quadratic residue, arithmetic functions, distribution of primes. Pre: 311 or consent of department.
- 431-432 ADVANCED CALCULUS (3-3) Yr.** Staff
Topology of \mathbb{R}^n , theorems on continuous functions, development of Riemann integral, sequences and series, uniform convergence, implicit function theorems, differentials and Jacobians. Pre: 232, 311.
- 441 NUMERICAL ANALYSIS (3) II** Mookini
Theory of matrices in numerical analysis, norms and convergence. Pre: 301 and 311, and either 431 or 403.
- 442 VECTOR ANALYSIS (3) II** Staff
Vector operations and their applications. Vector differential operators. Line and surface integrals. Theorems of Green and Stokes. Pre: 232.
- 444 THEORY OF FUNCTIONS OF A COMPLEX VARIABLE (3) II** Williamson
Analytic functions, complex integration, introduction to conformal mapping. Pre: 431.
- 471 PROBABILITY (3) I, II** Yeh
Probability spaces, random variables, probability distributions, functions of random variables, mathematical expectations, moment-generating functions and characteristic functions, limit theorems. Pre: 231.

- 472 STATISTICAL INFERENCE (3) II** **Hadley**
Sampling and parameter estimation, tests of hypotheses, correlation, regression, analysis of variance, sequential analysis, rank order statistics. Pre: 471.
- 499 (399) DIRECTED READING (arr.) I, II** **Staff**
Individual reading in advanced mathematics. Limited to senior math majors with 2.7 grade-point ratio, or 3.0 grade-point ratio in math.
- 611-612 MODERN ALGEBRA (3-3) Yr.** **Leahy**
Simplicity of alternating groups, Sylow theorems, Jordan Holder theorem, unique factorization domains, Galois theory, algebraic closures, transcendence bases, modules over principal ideal rings, Dedekind domains. Pre: 412.
- 621-622 TOPOLOGY (3-3) Yr.**
Properties of topological spaces; separation axioms, compactness, connectedness; metrizable; convergence and continuity. Additional topics from general and algebraic topology. Pre: 432.
- 631-632 THEORY OF FUNCTIONS OF A REAL VARIABLE (3-3) Yr.** **Halmos**
Lebesgue measure and integral, convergence of integrals, functions of bounded variation, absolute continuity, Lebesgue-Stieltjes integral and more general theory of measure and integration. Pre: 432.
- 644-645 ANALYTIC FUNCTION THEORY (3-3) Yr.** **Williamson**
Conformal mapping, residue theory, series and product developments, analytic continuation, special functions. Pre: 432, 444.
- 649 (599) TOPICS IN MATHEMATICS (3) I, II** **Staff**
(1) Theory of groups, (2) analytic number theory, (3) Hilbert spaces. Pre: consent of instructor. May be repeated once for credit.
- 750 (650) SEMINAR (1) I, II** **Staff**
Pre: consent of department chairman.
- 799 (699) DIRECTED RESEARCH (arr.) I, II** **Staff**
Pre: graduate standing in mathematics, consent of department chairman.
- 800 THESIS RESEARCH (arr.) I, II** **Staff**

Microbiology (Micro)

Professors **BENEDICT, BUSHNELL, CHU, FOLSOME, HERZBERG, LOH**; Associate Professors **BERGER, CONTOIS, GUNDERSEN, HOHL**; Assistant Professors **HALL, SIEGEL**

351 is prerequisite to all more advanced courses.

- 130 GENERAL BACTERIOLOGY (3) I, II** **Chu**
Fundamentals of bacteriology with emphasis on microorganisms as they affect people and their possessions. Not open to those who have credit in 351.
- 140 MICROBIOLOGY LABORATORY (1) I (1 Lb)** **Herzberg**
Primarily for students in nursing and dental hygiene. Pre: credit or registration in 130; Chem 113-115.
- 351 (51) PROCARYOTIC BIOLOGY (3) I, II (2 L, 2 Lb)** **Contois, Berger**
Study of bacteria: their anatomy, chemistry, physiology and development; their roles in natural processes. Pre: Biol 250; Chem 241-242 or 244, 246; or consent of instructor; Math 205 desirable.
- 431 (531) MICROBIAL BIOCHEMISTRY AND FUNCTION (4) I (3 L, 2 Lb)** **Berger, Hall**
Fundamental physiological and metabolic processes of microorganisms with emphasis on growth, synthesis of cellular constituents, energy-yielding processes. Pre: 351; credit or registration in Math 206 or consent of instructor.

- 461 (361) IMMUNOLOGY (4) I (3 L, 2 lb)** Benedict
 Fundamentals of antibody production; structure and biological actions of antigens and antibodies. Pre: 351 or consent of instructor; Bioch 441 desirable.
- 463 (362) MICROBIOLOGY OF THE PATHOGENS (4) II (3 L, 2 lb)** Herzberg
 Host-parasite relationships in microbial diseases of man and animals. Characteristics of bacterial pathogens. Basic techniques of isolation, identification, diagnosis. Pre: 351, 461.
- 475 MICROBIAL GENETICS (4) II (2 L, 2 lb)** Folsome
 Genetic analysis and molecular basis of transmission, replication, mutation, segregation, expression of heritable characteristics in procaryotes and unicellular eucaryotes. Pre: 351 or Biol 250 and consent of instructor; Math 206.
- 480 MICROBIAL ECOLOGY (4) I (2 L, 2 lb)** Gundersen
 Interactions between microorganisms and between microorganisms and other organisms in nature. Pre: 351 or consent of instructor.
- 490 VIROLOGY (4) II (2 L, 2 lb)** Loh
 Fundamentals of animal virology. Physical and chemical properties of viruses; virus-host interactions; pathogenesis of viral diseases. Replication, isolation and identification of viruses with emphasis on animal tissue culture systems. Pre: 351, 461; Bioch 441; or consent of instructor.
- 499 (399) MICROBIOLOGICAL PROBLEMS (arr.) I, II** Staff
 Directed reading and research. Limited to senior majors with 2.7 grade-point ratio, or 3.0 in microbiology.
- 606 MEDICAL MICROBIOLOGY (5) I** Bushnell
 For second-year medical students.
- 625 IMMUNOCHEMISTRY (4) II (3 L, 2 lb)** Benedict
 Chemical, physical, biological properties of antigens and antibodies; mechanisms of antigen-antibody reactions. Pre: 461; Bioch 601; or consent of instructor. (Alt. yrs; offered 1969-70.)
- 632 ADVANCED MICROBIAL PHYSIOLOGY (3) II (2 L, 2 lb)** Hall
 Advanced techniques for study of selected topics. Pre: 431 or consent of instructor. (Alt. yrs; offered 1968-69.)
- 642 MARINE MICROBIOLOGY (4) II (3 L, 2 lb)** Gundersen
 Microbial activities in sea; taxonomy; ecology and physiology of marine pelagic and benthic microorganisms. Pre: 431; Ocean 620, 621, 622, or 623; or consent of instructor. (Alt. yrs; offered 1969-70.)
- 655 VIROLOGY (2) I (2 L)** Loh
 Advanced selected topics with emphasis on animal-virus host cell interaction at cellular level. Pre: 463, 625; Bioch 441 or 601; and consent of instructor. (Alt. yrs; offered 1968-69.)
- 657 VIRUS LABORATORY (3) I (2 lb)** Loh
 Advanced techniques for study of selected topics. Pre: 463, 625, credit or registration in 655; Bioch 441 or 601; and consent of instructor. (Alt. yrs; offered 1968-69.)
- 661 ULTRASTRUCTURE OF MICROORGANISMS (3) I (3 L)** Hohl
 Structural and molecular architecture of cell organelles; concepts of cellular integration. Pre: consent of instructor.
- 665 ELECTRON MICROSCOPY (2) II (2 lb)** Hohl
 Introduction to use of electron microscope and preparative techniques. Pre: 661 and consent of instructor.
- 671 MICROBIAL GENETICS (4) I (4 L)** Folsome
 Directed study and discussion of research literature dealing with bacterial and bacterial virus mutation, genetic recombination, evolution and control mechanisms. Pre: 475; Bioch 601; and consent of instructor. (Alt. yrs; offered 1969-70.)

- 681 HOST-PARASITE RELATIONSHIPS (3) I (3 L)** Herzberg
Mechanisms of pathogenicity of microorganisms and defense mechanisms of human and animal hosts. Review of contemporary literature. Pre: 463 or consent of instructor. (Alt. yrs; offered 1969–70.)
- 690 SEMINAR (1) I, II** Folsome, Benedict
Significant topics in microbiology. Required of graduate students. May be repeated.
- 699 DIRECTED RESEARCH (arr.) I, II** Staff
Selected problems in microbiology. Pre: consent of instructor.
- 795 (695) SPECIAL TOPICS IN MICROBIOLOGY (arr.) I, II**
Selected topics in any aspect of microbiology. May be repeated.
- 800 THESIS RESEARCH (arr.)** Staff

Military Science (MS)

Professor CARROLL; Associate Professor KENT; Assistant Professors AUYONG, MCNAMARA, O'KEEFE, VALENTINE, ZAKAS; Instructors FOSTER, LAUL, NORRIS, PURNELL, WRIGHT

Leadership Laboratory required 1 hour per week.

101-102 FIRST-YEAR MILITARY SCIENCE (2-2) Yr.

Theory of Army organization; organization and function of infantry squad, platoon, company; objectives of ROTC program; missions of Army as member of national defense team and major problems confronting it in this role, emphasizing one-army concept; evolution of firearms; marksmanship training.

201-202 (151-152) SECOND-YEAR MILITARY SCIENCE (2-2) Yr.

Survey of American military history from origins of U.S. Army, with emphasis on factors which led to organizational, tactical, logistical, operational and strategical patterns found in today's Army; organization, composition and mission of infantry-tank teams in nuclear and non-nuclear warfare; map and aerial photograph reading.

301-302 (201-202) THIRD-YEAR MILITARY SCIENCE (3-3) Yr.

Infantry organization, principles of combat and application to units of infantry division battalion warfare; military leadership; role of various branches in over-all missions of Army; educational psychology applied to military instructional programs.

401-402 (251-252) FOURTH-YEAR MILITARY SCIENCE (3-3) Yr.

Staff organization, purpose and functions; division staff as model of battalion staff in combat theatre; role of U.S. in world affairs; uniform code of military justice; fundamentals of army administration; supply and troop movements.

Music (Mus)

Professors RIAN, SCHWADRON, B. SMITH, VAUGHT, VINE; Associate Professors KERR, R. N. MCKAY, A. RUSSELL; Assistant Professors CHADWICK-CULLEN, CRABTREE, HERAND, LUM, W. PFEIFFER, TRUBITT, UCHIMA, WINKLER, WOLZ; Instructors AH CHAN, CORAGGIO, GILLET; Lecturers ALLTON, ARAI, BURTON, DEMELLO, HARLING, HOES, HUHM, MIKAMI, MIYAMURA, R. PFEIFFER, Z. RICHARDS, L. RUSSELL, P. VALENTIN, K. WONG, C. YAMADA, E. YASNER; Assistant Professor LENTZ

Numbers in parentheses in course descriptions refer to the different sections in each course and are used for scheduling purposes.

102 (200) UNIVERSITY CHORUS (1) I, II

Gillet, Uchima

Performance of choral literature from Renaissance to present. Previous choral experience not required.

- 115-116 (113-114) FIRST-LEVEL SECONDARY PIANO (1-1) Yr.** Ah Chan
Study of piano as secondary performance field including application of music theory to problems in improvising, harmonizing, creating accompaniments, transposing and sight-reading at keyboard. For music majors.
- 117-118 INTRODUCTION TO MUSIC THEORY (1-1) Yr.** Uchima
Fundamental concepts in musical structure and notation, including laboratory experience with vocal and instrumental performance at elementary level. Not open to those who have had 119.
- 119 (150) ACCELERATED INTRODUCTION TO MUSIC THEORY (2) I, II**
Content of 117-118 in one semester. Placement conference required. Pre: consent of instructor.
- 123-124 (111, 112) ELEMENTARY VOICE CLASS (1-1) Yr.**
Basic principles of voice production. Relevant problems in voice literature at elementary level.
- 125-126 (122-123) ELEMENTARY PIANO CLASS (1-1) Yr.**
Basic principles of piano performance. Relevant problems in piano literature at elementary level.
- 127-128 (121, 221) ASIAN INSTRUMENTS CLASS (1-1) Yr.**
Basic principles of performance of Asian instruments. Relevant problems in literature at elementary level. (78) shamisen, (79) koto. \$25 fee.
- 151-152 STRING METHODS (2-2) Yr.** Winkler
For students preparing to teach instrumental music. Performance techniques, materials and pedagogy for string instruments.
- 153 WOODWIND METHODS (2) I** Uchima
Similar to 151-152.
- 154 BRASS METHODS (2) II** Lum
Similar to 151-152.
- 155 PERCUSSION METHODS (2) I** L. Russell
Similar to 151-152.
- 160 INTRODUCTION TO MUSIC LITERATURE (3) I, II**
Elements, styles and forms of music, from listener's point of view. Lab section required.
- 170 MUSIC IN WORLD CULTURE (3) I, II**
Role of music in societies—ancient and modern, sophisticated and non-sophisticated, Western and non-Western, child and adult. Representative styles and regional characteristics.
- 181-182 ELEMENTARY MUSIC THEORY (2-2) Yr.**
Materials and organization of music; analysis, writing and keyboard application. Taken concurrently with 183-184. Placement conference required. Pre: knowledge of fundamentals of music notation.
- 183-184 (185-186) AURAL TRAINING (1-1) Yr.**
Systematic study of problems in perception, identification and notation of musical sounds. Emphasizes sightsinging. Taken concurrently with 181-182. Pre: ability to sing simple diatonic melodies at sight.
- 215-216 (115-116) SECOND-LEVEL SECONDARY PIANO (1-1) Yr.** Ah Chan
Continuation of 115-116 with increased emphasis on piano literature up to intermediate level. Pre: 116 or consent of instructor.
- 265-266 (165-166) HISTORY OF WESTERN MUSIC (3-3) Yr.** Vaught
Development of music from origin to present. Styles, schools, composers. Pre: 160 or 181 or consent of instructor.

- 281-282 (183-184) INTERMEDIATE MUSIC THEORY (2-2) Yr.** **McKay**
Detailed study of theory of music; including writing, analysis, keyboard application. Taken concurrently with 283-284 and 265-266. Pre: 182.
- 283-284 (187-188) ADVANCED AURAL TRAINING (1-1) Yr.** **McKay**
Systematic study of advanced problems in perception, identification and notation of musical sounds. Includes sight-singing. Taken concurrently with 281-282. Pre: 184.
- 325-326 (257-258) CONDUCTING (1-2) Yr.** **Lum, Uchima**
Problems in directing instrumental and choral ensembles and organizations. Score reading, rehearsal techniques and basic interpretive problems. Pre: 182.
- 351-352 (251-252) MUSIC IN THE ELEMENTARY SCHOOL (2-2) Yr.** **Gillett**
For majors in elementary school music (vocal-general). Detailed study of music concepts and literature appropriate for elementary schools. Materials and procedures necessary for organization of music in childhood experience.
- 353 (253) SURVEY OF MUSIC IN THE ELEMENTARY SCHOOL (3) I, II** **Gillett**
Study of music concepts and literature appropriate for elementary schools. Basic materials and procedures. Not intended for majors in elementary school music (vocal-general). Pre: 118 or 119.
- 399 DIRECTED STUDY (arr.) I, II**
Limited to senior majors with 2.7 grade-point ratio or 3.0 in music.
- 401 ENSEMBLES (1) I, II**
Performance of literature for ensembles and performing groups of various sizes and kinds. (11) Opera workshop, (12) University Singers, (21) Keyboard, (31) String Ensemble, (35) Collegium Musicum, (36) Renaissance Singers, (41) Woodwind Ensemble, (51) Brass Ensemble, (52) Stage Band, (61) Percussion Ensemble, (71) Koto Ensemble, (72) Japanese Ensemble, (73) Chinese Ensemble, (74) Korean Ensemble, (75) Okinawan Ensemble, (76) Philippine Ensemble, (77) Asian Ensemble, (78) Oceanic Ensemble, (91) Hawaiian Dance, (92) Japanese Dance, (93) Chinese Dance, (94) Korean Dance, (95) Okinawan Dance, (96) Philippine Dance, (97) Asian Dance, (98) Oceanic Dance. Pre: audition or consent of instructor. May be repeated for credit.
- 402 (400) UNIVERSITY CONCERT CHOIR (1) I, II** **Crabtree**
Performance of a cappella literature and major choral works. Pre: previous choral experience and consent of instructor. May be repeated for credit.
- 405 UNIVERSITY SYMPHONY ORCHESTRA (1) I, II** **Winkler**
Performance of orchestral literature, including major works for chorus and orchestra, opera and dance. Pre: audition or consent of instructor. May be repeated for credit.
- 409 UNIVERSITY CONCERT BAND (1) I, II** **Lum**
Performance of band literature, including major works by contemporary composers. Pre: audition or consent of instructor. May be repeated for credit.
- 451 ADVANCED STRING METHODS (2)**
Advanced performance techniques, materials and pedagogy for string instruments: (31) violin, (32) viola, (33) cello, (34) double bass. Pre: 152. May be repeated for credit. (Not offered 1968-69.)
- 452 ADVANCED WOODWIND METHODS (2)**
Advanced performance techniques, materials and pedagogy for woodwind instruments: (41) flute, (42) oboe, (43) clarinet, (44) bassoon. Pre: 153. May be repeated for credit. (Not offered 1968-69.)
- 453 ADVANCED BRASS METHODS (2)**
Advanced performance techniques, materials and pedagogy for brass instruments: (51) trumpet, (52) French horn, (53) trombone, (54) tuba. Pre: 154. May be repeated for credit. (Not offered 1968-69.)
- 455 ADVANCED PERCUSSION METHODS (2)**
Advanced performance techniques, materials and pedagogy for percussion instruments: (61) timpani, (62) mallet instruments, (63) snare drum. Pre: 155. May be repeated for credit. (Not offered 1968-69.)

- 457 (554) ASIAN AND PACIFIC MUSIC IN EDUCATION (2) II** Gillett
Musical concepts in songs, dances and instrumental music of Asia, Hawaii and other Pacific islands appropriate for elementary school. Pre: 352 or 353; teaching experience or consent of instructor.
- 458 VOICE METHODS (2) I** Pfeiffer
Concepts, materials and procedures for class and individual instruction in voice. Pre: 182 or consent of instructor.
- 459 (259) PIANO METHODS (2)**
Concepts, materials and procedures for class and individual instruction in piano. Pre: 182 or consent of instructor. (Not offered 1968-69.)
- 461 SYMPHONIC MUSIC (2)**
Historical study of symphony orchestra and its literature from Bach to present. Pre: 160 or 181, or consent of instructor. (Not offered 1968-69.)
- 462 CHORAL MUSIC (2)**
Historical study of choral literature from Palestrina to present. Pre: 160 or 181, or consent of instructor. (Not offered 1968-69.)
- 463 OPERA (2) I**
Historical study of operatic literature from Monteverdi to present. Pre: 160 or 181, or consent of instructor.
- 464 TWENTIETH CENTURY MUSIC (2) II**
Study of major styles and composers from Debussy to present. Pre: 160 or 181, or consent of instructor.
- 469 (269) KEYBOARD MUSIC (2) II**
Study of literature for harpsichord, piano and organ from Renaissance to present, emphasizing development of historical styles. Pre: 160 or 181, or consent of instructor.
- 470 ART MUSIC OF ASIA (2) I**
Major genres and representative works. Performance practices and compositional principles. Pre: 160 or 170 or 181, or consent of instructor.
- 471 MUSIC OF NON-LITERATE PEOPLES (3) II**
Traditional and acculturated styles. Emphasis on Pacific islands. Pre: 160 or 170 or 181, or consent of instructor.
- 481-482 (281) ORCHESTRATION (2-2) Yr.**
Basic principles of scoring for orchestra and band, including study of instrumental ranges, timbres, transpositions. *2nd Sem:* transcribing or composing for band, orchestra and chorus. Pre: 182, or consent of instructor.
- 483-484 COUNTERPOINT (2-2) Yr.**
Techniques of contrapuntal writing from beginnings of polyphony to 17th century (483) and from 17th century to present (484). Problems in writing and analysis. Pre: 282.
- 485-486 FORM AND ANALYSIS (2-2)**
Structural analysis of music literature from various style-periods, including standard form-types. Pre: 282. (Not offered 1968-69.)
- 487-488 COMPOSITION (2-2) Yr.** A. Russell
Creative writing beginning with smaller forms. Pre: 282 or consent of instructor.
- 489-490 ADVANCED COMPOSITION (2-2)**
Creative writing in larger forms. Pre: 488 or equivalent. (Not offered 1968-69.)
- 491-492 MOVEMENT NOTATION (2-2) Yr.** Wolz
Analysis and recording of movement through Labanotation; reconstruction of notated exercises and dances.

493-494 (394-395) SENIOR HONORS THESIS (4) Yr.**519 (450) MUSIC THEORY FOR ELEMENTARY TEACHERS (3)**

Aural training, creative writing, laboratory experience and theoretical study of traditional music. Pre: 118 or 119, or consent of instructor. (Not offered 1968-69.)

580 THEORETICAL ASPECTS OF MUSICAL STYLE (3)

Study of concepts, and practices distinguishing baroque, classical, romantic, contemporary periods. Application in writing and listening. Pre: 182 and 266. (Not offered 1968-69.)

600 SEMINAR (3) I, II

Selected problems in (1) composition, (2) ethnomusicology, (3) musicology, (4) performance repertory, (5) music education. Pre: consent of instructor. May be repeated.

601 ADVANCED ENSEMBLE (1) I, II

Selected projects in study and performance of ensemble literature. Pre: 436 or equivalent. May be repeated.

625-626 (657-658) ADVANCED CONDUCTING (2-2) Yr.

Advanced problems in conducting instrumental and choral groups. Pre: 326.

651 FOUNDATIONS IN MUSIC EDUCATION (2) I**Schwadron**

Discovery and organization of broad problems in music education. Relating basic concepts of music in elementary and secondary schools to total curriculum. Pre: teaching experience.

652 PROBLEMS IN MUSIC EDUCATION (2) II**Schwadron**

Study of choral, instrumental, general music at elementary and secondary school levels. Research, reports and conferences. Pre: teaching experience. May be repeated.

660 STUDIES IN MUSIC LITERATURE (3) II**Vaught**

Detailed study of music literature approached from various standpoints, i.e., works of specific composers, forms or periods. Pre: 266 or consent of instructor. May be repeated.

661 BIBLIOGRAPHY AND RESEARCH METHODS IN MUSIC (3) I**Smith**

Basic materials and techniques for research in music.

670 REGIONAL MUSICS (3) I, II

Musical content and historico-social context of principal musical traditions. (1) Asia, (2) Oceania. Pre: consent of instructor. May be repeated.

680 ADVANCED PROBLEMS IN MUSIC THEORY (2) I, II

(1) Counterpoint, (2) form and analysis, (3) orchestration, (4) pedagogy, (5) transcription of performance practices, (6) movement notation. Pre: graduate standing and 282 or equivalent. May be repeated for credit.

699 DIRECTED WORK (arr.) I, II

Reading and research in ethnomusicology, musicology, or music education; reading and practice in theory, composition or performance. Pre: consent of instructor.

800 THESIS RESEARCH (arr.) I, II**Staff****APPLIED MUSIC**

Instruction is given in individual half-hour lessons either once or twice a week. Lessons are not made up unless the instructor is notified a reasonable time in advance of the absence. Lessons occurring on holidays are not made up.

Registration for lessons and choice of teachers must be approved by the department chairman.

Assignment to applied music courses is based on tests and auditions given by the department during the advising and registration period for new students.

Information regarding specific requirements in applied music courses may be obtained from the music department.

Fees Per Semester

One half-hour lesson per week.....	\$55.00
Two half-hour lessons per week.....	\$90.00

131 INTRODUCTION TO APPLIED MUSIC (arr.) I, II

Individual instruction in solo vocal or instrumental performance at the elementary level. Including study of works representative of literature. For non-music majors and music majors in secondary performance fields. May be repeated for credit. (11) Voice, (21) piano, (22) organ, (24) harpsichord, (25) harp, (31) violin, (32) viola, (33) cello, (34) double bass, (35) viola da gamba, (41) flute, (42) oboe, (43) clarinet, (44) bassoon, (45) saxophone, (51) trumpet, (52) french horn, (53) trombone, (54) tuba, (55) baritone, (61) percussion, (71) koto, (72) shamisen, (79) Hawaiian chant, (91) Japanese dance, (94) Korean dance, (96) Philippine dance.

135-136 FIRST-LEVEL APPLIED MUSIC (arr.) I, II

For music majors or intended majors. Individual instruction in solo vocal or instrumental performance at first performance level. Study of works representative of the literature. Weekly repertoire laboratory required. (11) Voice, (21) piano, (22) organ, (25) harp, (31) violin, (32) viola, (33) cello, (34) double bass, (41) flute, (42) oboe, (43) clarinet, (44) bassoon, (45) saxophone, (51) trumpet, (52) french horn, (53) trombone, (54) tuba, (55) baritone horn, (61) percussion. Pre: audition.

231 INTERMEDIATE APPLIED MUSIC (arr.) I, II

For non-music majors or music majors in secondary performance fields. Individual instruction in solo vocal and instrumental performance at second performance level. Study of works representative of the literature. See 131 for list of sections. Pre: audition. May be repeated.

235-236 (137-138) SECOND-LEVEL APPLIED MUSIC (arr.) I, II

For music majors or intended music majors. Individual instruction in solo vocal or instrumental performance at second performance level. Study of works representative of literature. Weekly repertoire laboratory required. See 135 for list of sections. Pre: 136 or consent of instructor.

335-336 (235-236) THIRD-LEVEL APPLIED MUSIC (arr.) I, II

For music majors. Individual instruction in solo vocal or instrumental performance at the third performance level. Study of works representative of literature. Weekly repertoire laboratory required. Half recital required in 336. See 135 for list of sections. Pre: 236 or consent of instructor.

431 (231) ADVANCED APPLIED MUSIC (arr.) I, II

For students not majoring in music performance. Individual instruction in solo vocal or instrumental performance at third and fourth performance levels. Study of works representative of literature. No recital requirement. See 131 for list of sections. Pre: 336 or consent of instructor. May be repeated.

435-436 (237-238) FOURTH-LEVEL APPLIED MUSIC (arr.) I, II

For majors in music performance. Individual instruction in solo vocal or instrumental performance at fourth performance level. Study of works representative of literature. Weekly repertoire laboratory required. Full recital required in 436. Pre: 336 or consent of instructor. See 135 for list of sections.

635 (435) GRADUATE-LEVEL APPLIED MUSIC (arr.) I, II

Individual instruction in solo vocal or instrumental performance at graduate performance level. Study of works representative of literature. (11) Voice, (21) piano, (31) violin, (32) viola, (33) cello, (34) bass, (41) flute, (42) oboe, (43) clarinet, (44) bassoon, (45) saxophone, (61) percussion. Pre: 436 or equivalent. May be repeated.

636 (635) GRADUATE RECITAL (3) I, II

For candidates for M.F.A. in performance. Individual instruction in solo vocal or instrumental performance at graduate performance level; full recital required. (11) Voice, (21) piano, (31) violin, (32) viola, (33) cello, (34) bass, (41) flute, (42) oboe, (43) clarinet, (44) bassoon, (45) saxophone, (61) percussion.

Oceanography (Ocean)

Professors BROCK, CHAVE, GROVES, MURPHY, WYRTKI; Associate Professors CHAMBERLAIN, CLUTTER, STROUP; Assistant Professors ANDREWS, DUING, GALLAGHER, MALAHOFF

- 201 SCIENCE OF THE SEA (3) I, II** **Staff**
Introduction to biological, geological, chemical, physical aspects of oceanography. Based on classroom lectures and use of oceanographic equipment and techniques at sea aboard ship and in near-shore zone.
- 620 PHYSICAL OCEANOGRAPHY (3) I** **Wyrcki**
Introduction to properties of sea water, oceanographic instruments and methods, heat budget, general ocean circulation, formation of water masses, dynamics of circulation, regional oceanography, waves, tides, sea level. Pre: Math 206.
- 621 BIOLOGICAL OCEANOGRAPHY (3) II** **Brock**
Marine organisms, factors governing productivity; distribution, ecology, environmental influences; marine resources, their availability and utilization. Desirable preparation: 620.
- 622 GEOLOGICAL OCEANOGRAPHY (3) II** **Andrews**
Marine geological processes and forms, including ocean basin structure and geomorphology, near-shore processes, marine sedimentation and stratigraphy.
- 623 CHEMICAL OCEANOGRAPHY (2) I** **Chave**
Study of chemical processes in marine waters including composition of sea water, nutrients, extraction of materials, carbon dioxide systems. Pre: Chem 133-134 or consent of instructor.
- 623 LITTORAL GEOLOGICAL PROCESSES (3) I (2 3-hr L-lb)**
Geological processes and forms peculiar to near-shore marine environment. Pre: 620, 622.
- 633 CHEMICAL OCEANOGRAPHY LABORATORY METHODS (2) I** **Staff**
Standard chemical methods of analysis. Pre: Chem 133-134 or consent of instructor.
- 636 PHYTOPLANKTON ECOLOGY (2) I (1 L, 1 3-hr Lb)** **Cattell**
Phytoplankton-environmental relations and community ecology; phytoplankton-zooplankton interactions; plankton community synecology. Pre: 620, 631 or consent of instructor.
- 640 ADVANCED PHYSICAL OCEANOGRAPHY (3) II** **Wyrcki**
Dynamics of ocean currents; equations of motion and continuity; ocean circulation; heat budgets. Pre: 620, Math 402.
- 642 RECENT MARINE SEDIMENTS (3) II (2 3-hr Lb)** **Roy**
Composition and distribution of recent marine sediments. Marine sedimentary environments. Pre: 622, 623.
- 643 MARINE GEOCHEMISTRY (3) II** **Chave**
Origin and history of oceans, isotope geochemistry, sedimentary cycle, biogeochemistry. Pre: 622, 623.
- 644 MARINE GEOLOGICAL AND GEOPHYSICAL TECHNIQUES (3) I** **Malahoff**
Applications of established sea-borne geological and geophysical exploration techniques to study composition and configuration of ocean floor and sub-bottom structure. Use of physiographic and structural interpretation techniques. Pre: consent of instructor.
- 646 ZOOPLANKTON ECOLOGY (2) I** **Clutter**
Sampling, distribution patterns, population dynamics, community structure and energy flow in the pelagic environment. Pre: 620, consent of instructor.

- 647 ZOOPLANKTON ECOLOGY LABORATORY (2) I (2 3-hr Lb)** **Clutter**
Application of sea and laboratory techniques, analysis and interpretation of concepts introduced in 646. Pre: 646 (may be taken concurrently), consent of instructor.
- 660 OCEAN WAVE THEORY (3) I** **Groves**
Generation and propagation of waves at sea; tsunamis; internal waves; observation and recording of ocean waves; wave spectra and forecasting. Pre: either 640, Math 432, or consent of instructor.
- 661 TIDES (3) II** **Groves**
Mechanics of particles and finite bodies; tide-generating forces; response of ocean and earth; harmonic and non-harmonic methods of analysis and prediction, geophysical implications of the tide. Pre: either 640, Math 432, or consent of instructor. (Alt. yrs.; odd years only.)
- 662 MARINE HYDRODYNAMICS (3) I** **Gallagher**
Introduction to classical hydrodynamics and development of Navier-Stokes equations as applied to oceans. Techniques for solution on various scales of oceanic motion, including turbulence; potential theory, dimensional analysis, vertical integration, boundary effects and statistical representations. Pre: Math 432 or consent of instructor.
- 663 MEASUREMENTS AND INSTRUMENTATION (2) II** **Graefe**
Oceanographic measurements, their accuracy and precision. Design principles and operation of selected instruments for physical oceanography. Reduction and evaluation of measured data.
- 672 OCEAN BASINS (3) II** **Malahoff**
Origin, structure, geomorphology of ocean basins. Pre: consent of instructor.
- 673 CONTINENTAL SHELVES (3) I** **Andrews**
Geological structure and mineral resources of continental shelves. Pre: consent of instructor.
- 699 DIRECTED RESEARCH (arr.) I, II** **Staff**
Pre: consent of instructor.
- 701 NEKTON ECOLOGY (2) II** **Murphy**
Relationship of larger ocean animals to physcobiological environment and to each other. Patterns of life history as related to environment, problems of exploitation, response to exploitation. Pre: 641 and Zool 631 or consent of instructor.
- 735 SEMINAR IN OCEANOGRAPHY (2) I, II** **Carrier**
1969 Spring semester—Fluid Mechanics.
- 750 TOPICS IN BIOLOGICAL OCEANOGRAPHY (2) I, II** **Staff**
Seminar. Literature and concepts in one of several active fields of biological oceanography considered in detail. Pre: consent of instructor. May be repeated for credit.
- 760 TOPICS IN PHYSICAL OCEANOGRAPHY (2) I** **Duing**
Review of recent development in theoretical oceanography with emphasis on problems of oceanic circulation. Pre: consent of instructor.
- 770 SEMINAR IN CHEMICAL OCEANOGRAPHY (1) II** **Chave**
- 799 SEMINAR (1) I, II** **Staff**
Student presentations based on literature reviews and research. Pre: approval of graduate adviser.
- 800 THESIS RESEARCH (arr.) I, II** **Staff**

Overseas Career Program (OCP)

Professor ALLISON; Associate Director HACKLER

631-632 OVERSEAS CAREER TRAINING SEMINAR (3-3) Yr.

Hackler

Interdisciplinary study of problems of Americans living and working in Asia with emphasis on application of regional and individual country studies, and practical aspects of interaction of American and Asian cultures. Consideration of overseas career services, such as U.S. Foreign Service, and study of case histories of positions available to Americans in various Asian countries. Open only to graduate students; required of all candidates for Overseas Career Certificate.

791 (601) INTERNSHIP IN AN ASIAN COUNTRY (3)

Hackler

Active duty for 6 months (in some cases up to 12) with governmental or private agencies in Asia. Periodic and final reports required. Limited to candidates for Overseas Career Certificate.

See Graduate Division Bulletin for description of Overseas Career Program and requirements for the Overseas Career Certificate.

Philosophy (Phil)

Professors CHANG, DEUTSCH, KAPLAN, MCCARTHY, NAGLEY; Associate Professors CHENG, INADA; Assistant Professors BORGMANN, WARGO, WINNIE, YAMASAKI

One of the following is generally a prerequisite to each advanced course: 100, 200, 201, 210 or the equivalent.

100 INTRODUCTION TO PHILOSOPHY (3) I, II

Problems, methods, fields of philosophy.

200 (150) HISTORY OF PHILOSOPHY I (3) I

Western philosophy from era of great Greek thinkers to Renaissance.

201 (155) HISTORY OF PHILOSOPHY II (3) II

Western philosophy from Renaissance to present. Desirable preparation: 200.

210 (200) INTRODUCTION TO LOGIC (3) I, II

Principles of modern deductive logic.

300 (400) GREEK PHILOSOPHY (3) I

Basic philosophical works of schools and thinkers of Greek philosophy from Pre-Socratics to Neo-platonism.

302 (402) MEDIEVAL PHILOSOPHY (3) II

McCarthy

Metaphysical, epistemological, ethical problems of medieval philosophy, with particular reference to Augustine, Anselm, Thomas Aquinas, Duns Scotus and William of Ockham.

304 (404) BRITISH EMPIRICISM (3) II

Winnie, Yamasaki

Analysis of development of empiricism in writings of Locke, Berkeley and Hume. Special attention to concepts of substance, sensation, self, nature, causation, mathematics, morality, religion.

306 (406) CONTINENTAL RATIONALISM (3) I

Yamasaki

Epistemological, metaphysical, ethical problems in Continental Rationalism. Particular attention to Descartes and Spinoza.

308 (408) NINETEENTH CENTURY PHILOSOPHY (3) I

Nagley

Major philosophical writings of German Idealists from Kant through Hegel and of Marx, Kierkegaard, Nietzsche, Freud.

- 310 (410) TWENTIETH CENTURY PHILOSOPHY (3) II** Deutsch
Survey of recent developments in Western philosophy.
- 315 (415) ETHICAL THEORY (3) I**
Comparative analysis of ethical theory in theological, legal, literary, scientific, social, as well as philosophical sources indicating relevance of ethical theory to process of decision making.
- 400 (432) POLITICAL PHILOSOPHY (3) II**
Combined systematic and historical approach to major problems of Western political philosophy. Special attention to European political theory.
- 405 (470) AMERICAN PHILOSOPHY (3) I** Cheng
Major trends in development of American philosophy in relation to socio-political background and influence.
- 410 (460) PHILOSOPHY OF THE PHYSICAL SCIENCES (3) I** Winnie
Systematic study of methods and procedures in formal and natural sciences.
- 415 (465) PHILOSOPHY OF THE SOCIAL SCIENCES (3) II** Winnie
Substantive and methodological problems in current analyses of social sciences.
- 420 (500) PHILOSOPHY OF ART (3) I** McCarthy
Study of art from points of view of creation, appreciation, criticism. Particular attention to painting, sculpture, music, poetry.
- 425 (510) PHILOSOPHY IN LITERATURE (3) II** McCarthy
Literary expression of philosophical ideas. Consideration of such writers as Beckett, Camus, Hemingway, Kafka, Rilke, Sartre, T. S. Eliot.
- 430 (520) EXISTENTIAL PHILOSOPHY (3) II** Nagley
Survey of main themes of European existential philosophy. Particular attention to Kierkegaard and Heidegger.
- 435 (505) PHILOSOPHY OF RELIGION (3) II** Yamasaki
Problems concerning existence of God, nature of religious experience, faith and reason, immortality, religious language, alternatives to theism.
- 493-494 SENIOR HONORS THESIS (2-2) Yr.**
- 600 (436) PROBLEMS OF PHILOSOPHY (3) II** McCarthy
Persistent specific problems of philosophy, primarily those concerning nature, man, God. Pre: graduate standing; consent of instructor.
- 604 METAPHYSICS OF LANGUAGE (3) I** Borgmann
Ontological and historical dimensions of language in metaphysical tradition of Plato, Aristotle, Buridan, Vico, Humboldt.
- 605 PHILOSOPHY OF LANGUAGE (3) II**
Concepts of meaning, truth, existence, reference, predication, quantification; analysis of analyticity and modalities with applications to philosophy, science, art.
- 610 (450) SYMBOLIC LOGIC I (3) I** Winnie
Quantification theory. Pre: 210; consent of instructor.
- 700 (600) INDIVIDUAL WESTERN PHILOSOPHERS (3) I, II**
Philosophies of men such as Plato, Aristotle, Thomas, Kant, Hegel, Kierkegaard, Schopenhauer. Pre: graduate standing; consent of instructor.
- 710 (610) SYMBOLIC LOGIC II (3) II**
Advanced topics in symbolic logic. Goedel's completeness and incompleteness theorems. Church's theorem. Pre: 610; consent of instructor.

- 715 (615) PHILOSOPHY OF MATHEMATICS (3) II** Cheng
 Philosophical problems concerning mathematics—mathematical truths, axioms, proof. Emphasis on contemporary research on foundations of math. Pre: 710 or 12 credits in math; consent of instructor.
- 720 (735) SEMINAR IN ANCIENT-MEDIEVAL PHILOSOPHY (3) I**
 Pre: graduate standing; consent of instructor.
- 725 (740) SEMINAR IN MODERN CLASSICAL PHILOSOPHY (3) I, II**
 Pre: graduate standing; consent of instructor.
- 730 (745) SEMINAR IN CONTEMPORARY PHILOSOPHY (3) I, II**
 Pre: graduate standing; consent of instructor.
- 740 (750) SEMINAR IN PHILOSOPHY OF SCIENCE (3) I**
 Pre: graduate standing; consent of instructor.
- 799 (699) DIRECTED RESEARCH (arr.) I, II**
 (a) Greek philosophy, (b) modern classical philosophy, (c) contemporary philosophy. Available to advanced graduate students; consent of instructor and chairman required. May be repeated.

ASIAN AND COMPARATIVE

- 450 (420) INDIAN PHILOSOPHY (3) I**
 Philosophical systems and movements: Vedas, Upanishads, six systems of Hinduism, Charvaka, Jainism, Buddhism.
- 460 (422) BUDDHIST PHILOSOPHY (3) I** Inada
 Survey of basic schools and tenets of Buddhist philosophy.
- 470 (424) CHINESE PHILOSOPHY (3) I** Chang, Cheng
 Historical survey of important philosophical schools and tendencies in China, ancient and modern.
- 480 (565) PHILOSOPHY, EAST AND WEST (3) I** Deutsch
 Basic systems and methods of Eastern and Western philosophy, with special attention to similarities and contrasts.
- 650 (601) INDIVIDUAL ASIAN PHILOSOPHERS (3) I, II**
 Philosophies of men such as Ramanuja-Shankara, Confucius, Chuang Tzu, Nagarjuna, Nishida. Pre: graduate standing; consent of instructor.
- 655 (630) VEDANTA (3) I**
 Development and many facets of Vedanta examined in their richness and complexity. Pre: 450; consent of instructor.
- 656 (635) INDIAN SOCIAL PHILOSOPHY (3) II**
 Basic codes of Indian moral and social philosophy (Dharma-sastras) and their historical developments and practical significance. Pre: 450; consent of instructor.
- 660 (640) THERAVADA BUDDHIST PHILOSOPHY (3) II** Inada
 Analysis of early Buddhist conceptions of the nature of man. Pre: 460; consent of instructor.
- 661 (641) MAHAYANA BUDDHIST PHILOSOPHY (3) II** Inada
 Basic principles and major schools. Emphasis upon Indian, Chinese, and later Japanese developments. Pre: 460; consent of instructor.
- 662 (642) ZEN (CH'AN) PHILOSOPHY (3) I** Chang, Inada
 Origin and development of Zen; influence on Oriental cultural traditions and contemporary scene. Pre: 460; consent of instructor.
- 670 (650) CONFUCIANISM (3) I** Cheng
 Doctrinal, ethical, social, institutional problems of Confucius to the present. Pre: 470; consent of instructor.

- 671 (651) NEO-CONFUCIANISM (3) II** Chang, Cheng
Examination of logic, theory of knowledge, metaphysics, and ethics of major Chinese Neo-Confucian philosophers in period from 11th to 16th century. Pre: 470; consent of instructor.
- 672 (652) TAOISM (3) II** Chang
Study and analysis of philosophical ideas of Lao Tzu, Chuang Tzu, and later Neo-Taoists. Pre: 470; consent of instructor.
- 750 (760) SEMINAR IN INDIAN PHILOSOPHY (3) I, II**
Pre: 450; graduate standing; consent of instructor.
- 760 (770) SEMINAR IN BUDDHIST PHILOSOPHY (3) I, II** Chang, Inada
Pre: 460; graduate standing; consent of instructor.
- 770 (780) SEMINAR IN CHINESE PHILOSOPHY (3) II** Chang, Cheng
Pre: 470; graduate standing; consent of instructor.
- 780 (790) SEMINAR IN COMPARATIVE PHILOSOPHY (3) II** Deutsch
Pre: graduate standing; consent of instructor.
- 799 (699) DIRECTED RESEARCH (arr.) I, II**
(d) Indian philosophy, (e) Buddhist philosophy, (f) Chinese philosophy, (g) East-West philosophy. Available to advanced graduate students; consent of instructor and chairman required. May be repeated.
- 800 THESIS RESEARCH**

Physics (Phys) and Astronomy (Astr)

Senior Professor **K. WATANABE**; Professors **HENKE, HOLMES, JEFFERIES, ORRALL, PETERSON, SINTON, STEIGER, TUAN, M. S. WATANABE, J. ZIRKER**; Associate Professors **BONSACK, CENCE, MCALLISTER, PONG**; Assistant Professors **BOESGAARD, DOBSON, HAYES, NOSE, PETERS, STENGER, WOLFF**

Mathematics 231 and Physics 160-161 or 170-273 are prerequisites to all courses numbered 300 or above.

- 100 SURVEY OF PHYSICS (3) I, II**
Introduction to physics; basic concepts. Not open to those with previous college physics or experience beyond Math 134.
- 101 LABORATORY I, II**
Simple experiments in basic concepts of physics. Pre: credit or concurrent enrollment in 100.
- 110 ASTRONOMY (3) I**
Survey of nature of astronomical universe, with much emphasis on scientific method and development of scientific thought. Pre: high school trigonometry.
- 111 ASTRONOMY (3) II**
Selected topics in astronomy considered in depth. Emphasis on current research problems. Occasional evening observing sessions. Pre: high school trigonometry.
- 160-161 COLLEGE PHYSICS (4-4) Yr. (3 I, 1 Ib)**
Fundamental principles, theories, experimental methods. Pre: credit or registration in Math 134.
- 170 GENERAL PHYSICS (4) I, II**
Mechanics of particles and rigid bodies; kinetic theory and thermodynamics. Pre: credit or registration in Math 206.

- 171 GENERAL PHYSICS LAB (1) I, II (1 3-hr Lb)**
Experiments in statics, dynamics, properties of matter. Pre: credit or registration in 170.
- 264 (164) ELEMENTARY MODERN PHYSICS (4) I**
Special theory of relativity, introduction to quantum mechanics, atomic structure, electrons in solids, selected topics of nuclear physics. Pre: 161 or equivalent, credit or registration in Math 206.
- 272 (172) GENERAL PHYSICS (3) I, II**
Electricity and magnetism; wave motion; optics. Pre: 170, 171.
- 273 (173) GENERAL PHYSICS LAB (1) I, II (1 3-hr Lb)**
Experiments in optics, electricity, and magnetism. Pre: credit or registration in 272.
- 274 (174) GENERAL PHYSICS (3) I, II**
Relativity, introduction to quantum mechanics, atomic and nuclear physics. Pre: 272, 273 or 160, 161; credit or registration in Math 231.
- 275 (175) GENERAL PHYSICS LAB (1) I, II (1 3-hr Lb)**
Experiments in modern physics. Pre: credit or registration in 274 or 264.
- 305-306 MODERN PHYSICS LAB (1-2) I, II**
Selected important experiments in modern physics. Measurements of nuclear magnetic resonance, Mossbauer effect, electron spin resonance, lasers, electron diffraction, other phenomena. Pre: 275, credit or registration in 480, or consent of instructor. 306 not offered 1968-69.
- 310 THEORETICAL MECHANICS I (3) I**
Particle dynamics, rigid body dynamics, planetary motion. Pre: credit or registration in Math 232.
- 311 THEORETICAL MECHANICS II (2) II**
Rigid body mechanics continued, fluid dynamics, wave motion. Pre: 310.
- 350 ELECTRICITY AND MAGNETISM (3) I, II**
Experimental laws, field theory, mathematical application to special problems. Pre: credit or registration in Math 232.
- 399 INDIVIDUAL WORK IN ADVANCED PHYSICS (arr.) I, II**
Limited to physics majors with 2.7 grade-point ratio or 3.0 in physics.
- 430 (530) THERMODYNAMICS AND STATISTICAL MECHANICS (3) I**
Laws of thermodynamics, heat transfer, kinetic theory, statistical mechanics.
- 440 SOLID-STATE PHYSICS (3) I, II**
Physics of electronic processes in solids. Pre: 274 or 264, credit or registration in 350 or equivalent.
- 450 (550) ELECTROMAGNETIC WAVES (3) II**
Field equations, plane and spherical waves, guided waves. Pre: 350.
- 460 PHYSICAL OPTICS (3) II**
Geometrical and physical optics. Pre: 264 or 274, 350.
- 480 ATOMIC AND NUCLEAR PHYSICS I (3) I**
Relativity, quantum theory, atomic physics. Pre: 274 or 264, 350, credit or registration in Math 403 or 402.
- 481 ATOMIC AND NUCLEAR PHYSICS II (3) II**
Continuation of 480; nuclear physics. Pre: 480.
- 490 (540) QUANTUM ELECTRONICS (3)**
Interaction of radiation with gases and solids. Pre: 440 and Math 403 or 402.

600-601 METHODS OF THEORETICAL PHYSICS (3-3) Yr.

Study of mathematical tools of physics, including series, transcendental functions, integral transforms, integral and differential equations, analytic function theory, elementary statistics, variational principles, tensors, group theory. Pre: Math 402 or 403-404, or consent of instructor.

605-606 MODERN PHYSICS LABORATORY (1 or 2) I, II

Selected important experiments in modern physics. Measurements of nuclear magnetic resonance, Mossbauer effect, electron spin resonance, lasers, electron diffraction, and other phenomena. Pre: 275, credit or registration in 480, or consent of instructor. 606 not offered 1968-69.

610 ANALYTICAL MECHANICS I (3) I

Dynamics of particles, systems of particles, and rigid bodies; Lagrangian and Hamiltonian equations; special theory of relativity. Pre: 310, Math 403-404 or concurrent enrollment in 600.

611 ANALYTICAL MECHANICS II (3) II

Invariants, Hamilton-Jacobi equation. Huygen's principle, small oscillations, mechanics of elastic media. Pre: 610.

620 PHYSICS OF UPPER ATMOSPHERE (3) II

Basic parameters, experimental methods, absorption and recombination processes, intrusion of extra-terrestrial particles and fields. Pre: 310, 350, or consent of instructor. (Alt. yrs.)

621 STELLAR ATMOSPHERES I (3) I

Excitation, ionization, dissociation, and radiative transfer in stellar atmospheres. Model atmospheres. Elements of continuum and line formation. Interpretation of stellar spectra. Pre: 480, Math 403-404 or concurrent registration in 600.

622 STELLAR ATMOSPHERES II (3) II

Detailed theory of formation of spectrum lines and continuum. Pre: 621.

623 STELLAR INTERIORS AND EVOLUTION (3) II

Equilibrium structure of stars and their evolution in time. Interpretation of observed color-luminosity and mass-luminosity relations. Nuclear reactions, radiative opacity, convection and model star calculations. Pre: Math 403-404 or concurrent enrollment in 600.

627 GALACTIC STRUCTURE I (3) II

Stellar statistics, stellar populations, and structure of galaxy. Pre: consent of instructor.

628 GALACTIC STRUCTURE II (3) I

Dynamics of star clusters, galaxies, and systems of galaxies. Dynamics of interstellar medium. Pre: 627.

629 ASTRONOMICAL TECHNIQUES (3) II

Experiments in photoelectric and photographic photometry, spectroscopy, optics, infra-red techniques, stellar classifications, and positional astronomy. Practical observing experience. Pre: consent of instructor.

650 ELECTRODYNAMICS I (3) II

Potential theory, Maxwell's equations, electromagnetic waves, boundary value problems. Pre: 450; Math 403-404 or concurrent enrollment in 600.

651 ELECTRODYNAMICS II (3) I

Relativistic electrodynamics, radiation by charged particles. Pre: 650.

660 ADVANCED OPTICS (3) I

Wave motion, interference, diffraction, fundamentals of spectroscopy, optics from viewpoint of electromagnetic theory, lasers. Pre: 460. (Alt. yrs.)

690 SEMINAR (1) I, II

Discussions and reports on physical theory and recent development. Pre: graduate standing or consent of instructor.

695 SEMINAR ON ATOMIC AND SOLID-STATE PHYSICS (1)

Discussions and reports on recent developments of atomic and solid-state physics. Pre: graduate standing or consent of instructor. May be repeated.

700 SEMINAR ON ELEMENTARY PARTICLE PHYSICS (1) I, II

Report and discussion of recent developments in the field of elementary particle physics. Pre: consent of instructor. May be repeated for credit; maximum 4 semesters.

711 ADVANCED TOPICS IN THEORETICAL PHYSICS (3) I, II

Course content varies from term to term to cover topics of interest in current theoretical research. Topics may include, but are not limited to: quantum field theory (generally offered in alternate years), invariance principles in particle physics, S-matrix theory, many-body theory, superconductivity. Pre: consent of instructor. May be repeated.

724 (624) SOLAR PHYSICS (3) I

Chromospheres and coronal physics, solar activity and its manifestations, photospheric structure, analysis of solar observations. Pre: 621.

725 (631) PLANETARY PHYSICS (3) I

Physical processes and the composition of planetary interiors, surfaces, atmospheres, and environment. Pre: consent of instructor.

730 (630) STATISTICAL MECHANICS (3) I

Probability and statistics, classical and quantum-mechanical statistical mechanics, relation to thermo-dynamical variables, applications. Pre: 430, 610, 770. (Alt. yrs.)

732 (632) ASTROPHYSICAL SPECTRA (3) II

Description and interpretation of spectra of such objects as: stars with extended atmospheres, planetary and gaseous nebulae, H II regions, novae. Pre: 480.

733 (633) SPECIAL TOPICS IN ASTRONOMY (3) I, II

Course content reflects special interest of staff and visiting faculty, but includes detailed discussion of planetary astronomy, stellar pulsation, cosmology, interstellar medium, variable stars. Pre: consent of instructor.

770-771 (670-671) QUANTUM MECHANICS (3-3) Yr.

Physical basis and formulation of quantum theory. Exact solutions of Schrodinger equation and their applications. Approximation methods. Applications to atomic, nuclear, and molecular physics. Pre: 481, Math 403-404 or Physics 600-601.

772 (672) RELATIVISTIC QUANTUM MECHANICS (3) I

Relativistic wave equations and their solutions. Dirac's theory of the electron, propagator techniques. Applications to quantum electrodynamics. Pre: 771.

777 (677) NUCLEAR PHYSICS I (3) I

Properties and structure of nuclei, reactions, and nuclear models. Pre: 481, 770.

778 (678) NUCLEAR PHYSICS II (3) II

Elementary particles, nuclear forces, meson theory. Pre: 777 and consent of instructor.

780 (680) ATOMIC AND MOLECULAR SPECTRA (3) II

Study of atomic and molecular structure by quantum mechanical interpretation of line, band, continuous spectra. Pre: 770.

785 (685) SOLID-STATE THEORY (3) I

Quantum theory of crystalline solids. Pre: 440, 770. (Alt. yrs.)

799 (699) DIRECTED RESEARCH (arr.) I, II

Pre: consent of instructor.

800 THESIS RESEARCH (arr.) I, II

Political Science (PoSc)

Professors FRIEDMAN, KARIEL, LEVI, MELLER, MIWA, PAIGE, RIGGS, STAUFFER; Associate Professors BECKER, CAHILL, GOLDSTEIN, HAAS, KURODA, NEFF, RUMMEL; Assistant Professors ALSCHULER, LEE, SHAPIRO, TABB; Visiting Assistant Professor BWY

110 is a prerequisite for all other courses, except when waived by the department.

- 110 INTRODUCTION TO POLITICAL SCIENCE (3) I, II** Staff
Introduction to political problems, systems, ideologies, processes.
- 210-211 AMERICAN GOVERNMENT CORE (3-3) I, II** Miwa, Tabb
Organization and functioning of American political system.
- 215 TOPICS IN AMERICAN GOVERNMENT (3)** Staff
Topics may include American legislative process and American civil liberties, as pre-announced.
- 300-301 POLITICAL THOUGHT CORE (3-3) I, II** Kariel, Tabb
Consideration of major elements of political theory.
- 305 TOPICS IN POLITICAL THOUGHT (3)** Staff
Topics may include empirical theory, regional political thought, modern ideologies, as pre-announced.
- 320-321 INTERNATIONAL RELATIONS CORE (3-3) I, II** Haas, Lee, Levi, Neff, Rummel
Integrated introduction to international relations and organization. (320 prerequisite for 321 unless waived by department.)
- 325 TOPICS IN INTERNATIONAL RELATIONS (3)** Haas, Lee, Levi, Neff, Rummel
Topics may include global and regional organizations, comparative foreign policies, international relations of the Far East, South and Southeast Asia, as pre-announced.
- 330-331 POLITICS CORE (3-3) I, II** Cahill, Goldstein
Genesis, organization, expression, efficacy of political demands.
- 335 TOPICS IN POLITICS (3)** Cahill, Goldstein
Topics may include campaigns and elections, propaganda and public opinion, and community politics, as pre-announced.
- 340-341 COMPARATIVE GOVERNMENT AND POLITICS CORE (3-3) I, II** Alschuler, Bwy, Kuroda, Stauffer
Integrated introduction to comparative political institutions and patterns.
- 345 TOPICS IN COMPARATIVE GOVERNMENT AND POLITICS (3)** Alschuler, Bwy, Kuroda, Stauffer
Topics may include Asian governments, other areas and regional problems, as pre-announced.
- 350-351 PUBLIC ADMINISTRATION CORE (3-3) I, II** Meller
Integrated introduction to public organization and management theory, administrative institutions and processes. (350 prerequisite for 351.)
- 355 TOPICS IN PUBLIC ADMINISTRATION (3)** Meller, Riggs
Topics may include problems of policy and techniques of implementation, as pre-announced.
- 360-361 COURTS AND POLITICS CORE (3-3) I, II** Becker
Integrated introduction to interrelationship between judicial process and political system. (360 prerequisite for 361.)
- 365 TOPICS IN COURTS AND POLITICS (3)** Becker
Topics may include cases concerned with due process of law, interstate commerce, etc., and administrative law, as pre-announced.

- 390, 391 COLLOQUIUM IN POLITICAL SCIENCE (3) I, II** **Staff**
Seminar dealing with specialized subjects in subfields of political science. (Admission by consent of instructor only.)
- 394-395 SENIOR HONORS THESIS (4) I, II** **Staff**
First semester, selection of topic; second semester, completion of thesis, under direction of selected adviser.
- 600 SCOPE AND METHODS OF POLITICAL SCIENCE (3) I, II** **Staff**
Main concepts delineating boundaries of discipline; approaches to knowledge employed by political scientists, including philosophical, legal, historical, comparative, behavioral. (Required for all degree students.)
- 601 POLITICAL ANALYSIS, THEORY BUILDING AND TECHNIQUES (3)** **Staff**
Anatomy of empirical and normative theory; problems in theory-building; validity and reliability in research design; role of deduction. (Required for doctoral students.)
- 602 RESEARCH PRACTICUM (3)** **Staff**
Research techniques in current use by department members, including content analysis, survey and interviewing, experimentation, etc. Students will assist in a relevant research project. (Offered as staff conditions permit.)
- 610 POLITICAL THOUGHT (3) I, II** **Kariel, Tabb**
Each semester a topical or chronological section on normative Western political thought; in addition, sections with geographical delimitation (as American, Asian, etc.) offered as staff conditions permit.
- 620 AMERICAN GOVERNMENT (3) I, II** **Miwa, Tabb**
At least one section a semester, with focus of sections varying among national, state, local governments, and special topics.
- 630 INTERNATIONAL RELATIONS (3) I, II** **Haas, Lee, Levi, Neff, Rummel**
At least one section a semester, with focus of sections varying among foreign policy, international law, theoretical problems in international relations, global or regional organization.
- 631 INTERNATIONAL RELATIONS OF ASIA (3) I, II** **Lee, Levi**
At least one section a semester on international relations of all or parts of Asia.
- 640 COMPARATIVE GOVERNMENT AND POLITICS (3) I, II** **Alschuler, Bwy, Kuroda, Stauffer**
At least one section a semester, with focus of sections varying among East Asia, Southeast Asia, South Asia, Europe, and development politics. (Frequent offerings of Asian sections scheduled.)
- 650 PUBLIC ADMINISTRATION THEORY (3) I, II** **Meller, Riggs**
One section each semester, with focus of sections varying among theoretical approaches to study of administration, comparative, development administration.
- 651 FUNCTIONAL ASPECTS OF PUBLIC ADMINISTRATION (3)** **Staff**
Sections on functional aspects of American administration (personnel and financial administration, planning, etc.) offered as staff conditions permit.
- 660 PUBLIC LAW AND JUDICIAL SYSTEMS (3)** **Becker**
At least one section a year surveying literature on interaction of judiciaries and political systems.
- 670 POLITICS (3)** **Cahill, Goldstein**
At least one section a year surveying literature on study of politics and political interaction.
- 699 DIRECTED READING AND RESEARCH (arr.) I, II** **Staff**
Individual problems. Pre: consent of instructor.
- 710* SEMINAR: POLITICAL THOUGHT (3)** **Kariel, Tabb**
Pre-announced topics; at least one section a year.

- 720* SEMINAR: AMERICAN GOVERNMENT (3)** Miwa, Tabb
Pre-announced topics; at least one section a year.
- 730* SEMINAR: INTERNATIONAL RELATIONS (3) I, II** Haas, Lee, Levi, Neff, Rummel
Pre-announced problems of both international organization and politics; at least one section a semester.
- 740* SEMINAR: COMPARATIVE GOVERNMENT AND POLITICS (3) I, II** Alschuler, Bwy, Kuroda, Stauffer
Pre-announced topics; at least one section a semester.
- 750* SEMINAR: PUBLIC ADMINISTRATION (3) I, II** Meller, Riggs
Administrative theory, comparative and development administration, and functional aspects, as pre-announced; at least one section a semester.
- 760* SEMINAR: JUDICIAL SYSTEMS (3)** Becker
Research projects emphasizing American system or comparative analysis, as pre-announced; at least one section a year.
- 770* SEMINAR: POLITICS (3)** Cahill, Goldstein
Pre-announced topics; at least one section a year.
- 800* THESIS I, II** Staff

Psychology (Psy)

Professors **ARKOFF, BITNER, CROWELL, DIAMOND, DIGMAN, OAKES, STAATS, WEAVER**; Associate Professors **BLANCHARD, GROTH, HERMAN, LEWIT, SUINN, WATSON**; Assistant Professors **AMES, CARLSON, GRIFFITT, MANSSON, MOELY, ONO, SHAPIRO, TOWNSEND**

- 100 SURVEY OF PSYCHOLOGY (3) I, II**
Principles of human behavior, individual differences, motivation, emotion, perception, learning, etc. Not open to those who have had 111; intended for non-majors.
- 110 PSYCHOLOGY OF ADJUSTMENT (3) I, II**
Understanding and improving adjustment: Needs, frustrations, conflicts, anxiety, patterns of adjustment. Concepts of mental health. Not open to majors.
- 111 INTRODUCTION TO THE SCIENCE OF PSYCHOLOGY (3) I, II**
General study of behavior through application of the scientific method. Concurrent enrollment in 112 required.
- 112 INTRODUCTORY LABORATORY IN PSYCHOLOGY (3) I, II**
Laboratory to accompany 111.
- 113 STATISTICAL TECHNIQUES (3) I, II**
Frequency distributions; graphic methods, central tendency; variability; correlation; reliability; tests of significance. Pre: two years of high school algebra or equivalent. Pre: 100 or 111.
- 214 LEARNING AND MOTIVATION (3) II**
Major conditions influencing learning and forgetting; the role of practice, reward, motivation, drive and emotion; theoretical interpretations of learning and motivation. Pre: 111, 112.
- 215 SENSORY PROCESSES (3) II**
Psychophysics; vision, audition, taste, smell. Pre: 111, 112.

* Consent of instructor prerequisite. Seminars may be repeated for credit.

216 INDIVIDUAL DIFFERENCES AND MEASUREMENT (3) I, II

Individual differences in personality, aptitude, intelligence; construction, validation, administration of tests; interpretation of scores. Pre: 111, 112, 113.

317 PHYSIOLOGICAL PSYCHOLOGY (3) I

Psychological basis of vision, audition, motivation, emotion, learning. Pre: 111, 112.

318 ANIMAL PSYCHOLOGY (3) I

Animal studies in learning, perception, motivation, physiological mechanisms. Pre: 111, 112.

319 EXPERIMENTAL PSYCHOLOGY (3) II

Original experiments with emphasis upon laboratory techniques. Control of variables, apparatus design, statistics in research. Pre: 111, 112, 113.

320 DEVELOPMENTAL PSYCHOLOGY (3) I, II

Emotional, mental, physical, social development from infancy to adulthood; interests and abilities at different age levels. Pre: 100 or 111.

321 PSYCHOLOGY OF PERSONALITY (3) II

Scientific study of personality, its meaning, assessment, development, relation to cultural-social determinants. Pre: 100 or 111.

322 SOCIAL PSYCHOLOGY (3) I

Interpersonal relations; social attitudes; group dynamics; intergroup relations; class and cultural influences. Pre: 100 or 111.

423 HISTORY OF PSYCHOLOGY (3) II

Background of modern psychology. Origin and development of contemporary points of view. Pre: 111, 112.

424 ABNORMAL PSYCHOLOGY (3) II

Nature and causes of psychoneuroses and psychoses; abnormalities of intelligence; psychotherapy. Pre: 100 or 111.

425 PSYCHOLOGICAL TESTING (3) I

Rationale of test construction, validation, and administration; fundamentals of statistical test theory. Pre: 216.

426 INDUSTRIAL PSYCHOLOGY (3) I

Job motivation, satisfaction, morale, leadership. Job analysis, selection, training, safety, fatigue, efficiency, human engineering. Consumer research. Pre: 100 or 111.

427 THE EXCEPTIONAL CHILD (3) II

Evaluation of physical, emotional, and intellectual deviations and their effects upon growth and development of children. Pre: 320. (Odd numbered years.)

428 SOCIAL DEVELOPMENT OF CHILDREN (3) II

Survey of the socialization process and acquisition of social behavior. Pre: 320. (Even numbered years.)

429 SENIOR MAJORS SEMINAR (3) I, II

Coverage in depth of some area of research and theory. Pre: consent of instructor. May be repeated.

430 COMPLEX HUMAN LEARNING (3) I

Extension of principles of learning (theory and research) to significant functional human behavior. Principles and methods of experimental psychology of learning, and findings of behavioral sciences, used to constitute a general conception of human behavior basic to various areas of study. Pre: 100 or 111.

499 DIRECTED READING OR RESEARCH (3) I, II

Pre: consent of instructor and department chairman.

601 INTRODUCTION TO QUANTITATIVE METHODS (3) I

Introduction to quantitative methods in psychology. Review of algebraic operations. Essentials of calculus, matrix operations, set theory, computer programming.

602 (620) STATISTICAL ANALYSIS (3) II

Data reduction, correlation and regression, sampling theory, simple experimental designs and their analyses. Pre: 601 or equivalent.

603 (621) DESIGN AND ANALYSIS OF PSYCHOLOGICAL EXPERIMENTS (3) I

Analysis of variance and other modes of assessing results of experiments. Relation of analysis to design. Pre: 602 or equivalent.

604 SCALING METHODS (3) II

Theory and construction of major types of scales with examples from education, psychology, sociology. Pre: 602 or equivalent. (Identical with Ed EP 729.)

605 PROBLEMS OF MEASUREMENT AND EVALUATION (3) II

Theory of measurement and evaluation; statistical and psychological analysis of tests and scales. Pre: 425 or equivalent, 601, 602. (Identical with Ed EP 709.)

606 MULTIVARIATE METHODS (3) I

Advanced regression analysis, factor analysis, canonical analysis, grouping methods. Pre: 602. (Alt. yrs.)

607 INTRODUCTION TO MATHEMATICAL MODELS (3) II

The logic and structure of mathematical models; their application to various areas of psychological theory. Pre: 602. (Alt. yrs.)

630 EXPERIMENTAL METHOD (3) I

Research methodology in experimental psychology.

631 EXPERIMENTAL METHODS IN SOCIAL PSYCHOLOGY (3) I

Laboratory methods in social psychology for investigation of attitude change, social perception, group performance; representative experiments. Pre: 322 or equivalent.

632 SURVEY RESEARCH METHODS (3) II

Field methods in social psychology; sampling, field observation, interviewing, coding methods; study of intact groups and organizations in their natural setting. Pre: 322 or equivalent.

633 COMPARATIVE PSYCHOLOGY (3) II

Comparative study of natural behavior, learned behavior, sensory processes, social behavior in animals.

634 PHYSIOLOGICAL PSYCHOLOGY (3) I

Relationship of central and peripheral nervous systems to behavior.

635 SENSORY PROCESSES AND PSYCHOPHYSICS (3) II

Basic research and theories describing the sensory systems.

636-637 LEARNING AND MOTIVATION (3-3)

Consideration of principal findings and major theories in learning and motivation.

638 PERCEPTION (3) II

Historical review of major theories and research in perception.

640 VERBAL LEARNING (3) I

Basic variables, processes, and theories in field of verbal learning and memory.

641 SKILL LEARNING (3) II (alternate years)

Human learning, with special reference to information processing, attention, memory, motor involvement in performance of skilled acts.

643 COGNITIVE PROCESSES (3) II (alternate years)

Theory and basic experimentation in concept formation, problem solving, logical reasoning, creative thinking.

644 MATHEMATICAL MODELS (3) II (alternate years)

Application of mathematical models to specific area in experimental psychology. Pre: 607.

649 INSTRUMENTATION (3) I

Basic concepts of electricity and electronics and their application to instrumentation of psychological experiments.

653 INFANT DEVELOPMENT AND BEHAVIOR (3) I

Theory and research in early development.

654 COGNITIVE DEVELOPMENT (3) II

Development of cognitive processes from infancy to adolescence; acquisition of complex concepts and symbolic processes.

655 LEARNING, LANGUAGE, AND INTELLECTUAL FUNCTIONING (3) II

Theory, research, and method in study of language acquisition; function of language in intellectual activities; application to cognitive behavior modification. Pre: 430. (Identical with Ed EP 655.)

656 SOCIAL LEARNING AND PERSONALITY (3) I

Development and modification of social behavior in children.

660 PERSONALITY: EMPIRICAL APPROACHES (3) I

Methods of measurement, antecedents, structure, dynamics, change in personality; particular reference to intelligence, achievement, authoritarianism, anxiety, the self-concept.

661 PERSONALITY THEORY (3) II

Leading theories of personality; evaluation of theories and related research.

662 SOCIAL PSYCHOLOGY (3) I

Theories and research in social cognition and social behavior. Pre: 322 or equivalent.

663 GROUP DYNAMICS (3) I

Social motivation of groups, conformity and power, cooperation and competition, group structure, leadership, intergroup processes. Pre: 322 or equivalent.

664 ATTITUDE DEVELOPMENT AND CHANGE (3) II

Attitude measurement, attitude development, persuasion, group support of attitudes, applications. Pre: 322 or equivalent.

665 CROSS-CULTURAL PSYCHOLOGY (3) I

Theories of psychology and their application to cross-cultural phenomena; assessment of cross-cultural processes and social motivation; culture and personality; evaluation and design of cross-cultural research.

666 PSYCHOLOGY AND SOCIAL ISSUES (3) I (alternate years)

Conflict, dissent, community issues, problems; social change and its relation to mental disorder.

670 APPLIED SOCIAL PSYCHOLOGY (3) II

Survey of basic problems in use of social psychological principles and techniques in fields of human relations, business and industry, communication.

675 BEHAVIOR ASSESSMENT (3) I

Principles and methods of assessing behavior, such as direct observation, interviewing, psychological examination.

677 BEHAVIOR ASSESSMENT LABORATORY (1) I

Practicum experience in behavior assessment methods; must be taken concurrently with 675.

685 CHILD LEARNING LABORATORY (3) I

Application of learning theory and procedures to individual and group work with children in controlled studies; basic to behavior modification procedures in clinical and educational psychology. (Identical with Ed EP 685.)

689 PRACTICUM IN BEHAVIOR CHANGE IN ADULTS (3) II

Supervised experience in analyzing and developing methods for therapeutic change in adults. Pre: consent of instructor.

699 DIRECTED RESEARCH (arr.) I, II

Pre: consent of instructor and department chairman.

700 SEMINAR (3) I, II

(1) General, (2) history and theory, (3) statistics and measurement, (4) experimental, (5) physiological, (6) personality, (7) social, (8) developmental, (9) applied-industrial, (10) clinical, (11) comparative, (12) learning, (13) perception. May be repeated.

730 RESEARCH IN EXPERIMENTAL PSYCHOLOGY (3) I, II

Supervised reading, discussion, research projects in areas of special interest. Open only to second-year graduate students. May be repeated.

750 RESEARCH IN DEVELOPMENTAL PSYCHOLOGY (3) I, II

Supervised reading, discussion, research projects in areas of special interest. Open only to second-year graduate students. May be repeated.

760 RESEARCH IN PERSONALITY (3) I, II

Supervised reading, discussion, research projects in areas of special interest. Open only to second-year graduate students. May be repeated.

762 RESEARCH IN SOCIAL PSYCHOLOGY (3) I, II

Supervised reading, discussion, research projects in areas of special interest. Open only to second-year graduate students. May be repeated.

790 RESEARCH IN CLINICAL PSYCHOLOGY (3) I, II

Supervised reading, discussion, research projects in areas of special interest. Open only to second-year graduate students. May be repeated. Pre: consent of instructor.

800 THESIS OR DISSERTATION RESEARCH (arr.) I, II

Religion (Rel)

Professor AOKI; Associate Professors BOBILIN, SEIFERT; Assistant Professors CRAWFORD, DOUGLASS

150 INTRODUCTION TO STUDY OF RELIGION (3) I, II

Aoki

Introduction to world's living religions—Hinduism, Buddhism, Shinto, Confucianism, Taoism, Judaism, Christianity, Islam.

151 RELIGION AND THE MEANING OF EXISTENCE (3) I, II

Introduction to basic ideas and issues of contemporary religious thought as related to the question "What is the meaning of existence?"

200 UNDERSTANDING THE OLD TESTAMENT (3) II

Bobilin

Study of developing beliefs and practices of Hebrew religion as set forth in Old Testament. Emphasis on meaning of its faith for modern world.

- 201 UNDERSTANDING THE NEW TESTAMENT (3) I** Crawford
Origin and development of early Christian message as set forth in New Testament, with special attention to Jesus and Paul.
- 309 THE LIFE AND TEACHINGS OF JESUS (3) II** Seifert
Critical study of life and teachings of Jesus. Interpretation of meaning of Jesus Christ for Christian faith. (Not offered 1968-69.)
- 310 THE PROPHETS AND SAGES OF THE OLD TESTAMENT (3) I** Seifert
Prophetic and wisdom literature of Old Testament. (Not offered 1968-69.)
- 340 WESTERN RELIGIOUS THOUGHT TO 1492 (3) I** Crawford
Ideas of major religious thinkers and movements in western world to 1492; evaluation of Roman Catholicism. (Not offered 1968-69.)
- 341 WESTERN RELIGIOUS THOUGHT FROM 1500 (3) II** Crawford
Period of Protestant Reformation to present, with evaluation of Protestant movement. (Not offered 1968-69.)
- 361 THE NATURE AND DESTINY OF MAN (3) II** Crawford
Religious views of human nature in their bearing on man's activities in politics, education, law, economics, literature.
- 451 EXISTENTIAL INTERPRETATION OF BIBLICAL FAITH (3) II** Seifert
Interpretation of Biblical faith on basis of critical theological thought and existential analysis with reference to visual arts and literature. (Not offered 1968-69.)
- 471 CHRISTIAN THOUGHT IN CONTEMPORARY ASIA (3) I** Seifert
Study of Asian contributions in field of Christian theology, with special emphasis on Indian and Japanese Christian thinkers. (Not offered 1968-69.)
- 482-483 THE HISTORY OF LIVING RELIGIONS (3-3) Yr.** Bobilin, Douglass
482: Basic beliefs and practices of Hinduism, Confucianism, Taoism, Buddhism, Shintoism. 483: Judaism, Roman Catholicism, Protestantism, their history, beliefs, contributions. Semesters independent.
- 484 RELIGION AND SOCIAL CHANGE IN ASIA (3) II** Bobilin
Study of interrelationship of society and religion in Asia. Emphasis on roles of traditional elites, heterodox religious movements, effects of modernization, secularization and religious organization, socio-religious movements in developing countries.
- 486 CHRISTIAN ETHICS (3) I** Crawford
Study of historical and contemporary types of Christian ethics.
- 488 THEOLOGY OF PEACE (3) I** Douglass
Study of the nature of peace, revolution, war, violence and non-violence, as revealed especially in contemporary history, from theological perspective.
- 651 SELECTED PROBLEMS OF THEOLOGY (3) I, II** Staff
Pre: graduate standing, consent of instructor.

Social Sciences (SocSc)

Professor WEAVER; Associate Professor MATSON; Instructor SPRINGEL

- 301-302 (300-301) MAN IN SOCIETY (3-3) Yr.** Matson, Weaver, Springel
Some basic problems and processes of contemporary society, jointly examined by several social sciences. Pre: sophomore standing or consent of instructor.

Sociology (Soc)

Professors BALL, CHENG, GLICK, HORMANN, YAMAMURA; Associate Professors BARRINGER, BLOOMBAUM, KRAUSS, WITTERMANS, WON; Assistant Professors BABBIE, BRODIE, CHANDLER, CHENG, KATZ, SAKUMOTO, STEAHR, SWIFT, WEGNER, WEINSTEIN, YAMAMOTO; Professor KASSEBAUM; Assistant Professors GOLDEN, TURNER

151 and 201 are equivalent introductory courses. 201 is specifically set up for juniors, seniors, or graduate students. Either course is a prerequisite to all advanced courses.

151 INTRODUCTION TO THE STUDY OF SOCIETY (3) I, II

Brodie, Chandler, Swift, Wegner

Basic social relationships, norms, social structures, processes affecting social change. Not open to juniors or seniors.

201 PRINCIPLES OF SOCIOLOGY (3) I, II

Swift, Weinstein, Yamamoto

Principles underlying organization of social groups, communities, institutions, ecological structures; basic processes of socialization, collective behavior, social change. Equivalent to 151; open only to juniors, seniors, graduates.

305 (220) HUMAN ECOLOGY (3) I

Yamamura

Basic concepts, principles, and techniques. Factors affecting distribution of population, utilities, social institutions.

310 (232) COMMUNITY FORCES IN HAWAII (3) I, II

Hormann

Basic factors and forces in contemporary society as exemplified in Hawaii.

320 (258) RACE RELATIONS (3) I, II

Glick

Race relations in world perspective; typical situations; conflict and accommodation; caste; race prejudice; miscegenation; effects upon personality.

325 (264) SOCIAL INSTITUTIONS (3) II

Barringer, Wittermans

Culture as conceptual tool. Origin, structure, function, growth of institutions. Interrelation and integration.

340 (270) SOCIAL CONTROL (3) I, II

Wittermans

Analysis of processes by which individuals become amenable to social and mass definitions of conduct and behavior.

350 (300) SOCIAL DISORGANIZATION (3) II

Hormann

Factors in community, institution, group disorganization; behavioral deviancy and social pathology. Integrated approach to social problems.

355 (306) CRIMINOLOGY (3) I, II

Cheng

Crimes and criminals; causative theories of criminality; institutional problems of apprehension, prosecution, incarceration, correction, rehabilitation.

360 (324) PERSONALITY AND CULTURE (3) I, II

Bloombaum, Wegner

Origin and development of personality as subjective aspect of culture; function of communication; human nature and the mores; personal life organization.

370 (344) SOCIAL CHANGE (3) I, II

Wittermans

Structural-functional organization. Impact of technology on institutions, value orientation, power structures, systems of roles and stratification.

394-395 HONORS THESIS (2-2) Yr.

399 DIRECTED READING (arr.) I, II

Limited to senior majors with 2.7 grade-point ratio, or 3.0 grade-point ratio in sociology.

410 POPULATION AND SOCIETY (3) II

Yamamura

Society analyzed in terms of quantitative and qualitative aspects of population. Sociological aspects of birth and death rates, natural increase, mobility.

- 415 (435) THE AGRARIAN COMMUNITY (3) I** **Hormann**
Community types as affected by transition from subsistence to commercial and industrial agriculture.
- 416 (436) THE URBAN COMMUNITY (3) II** **Krauss, Sakumoto**
Sociological principles as applied to modern city. Structure, growth, social and personal life organization.
- 425 (444) PEOPLE AND INSTITUTIONS OF CHINA (3) I, II** **Cheng**
Analysis of social philosophies, their influence on basic institutions and traits of people. Impact of Western civilization and communism. Social change under People's Democratic Dictatorship.
- 426 (446) PEOPLE AND INSTITUTIONS OF JAPAN (3) I, II** **Yamamoto**
Social structure and social change in contemporary Japan. Special attention to family, stratification, mobility.
- 427 (448) PEOPLE AND INSTITUTIONS OF KOREA (3) I, II** **Barringer**
Social institutions and change processes in contemporary Korea. The family, education, polity, economy, religion. Comparison of North and South Korea.
- 430 (451) RACE RELATIONS IN THE PACIFIC (3) I, II** **Glick**
Dominant conceptions of race and race relations, and factors affecting them; race and culture contacts in Hawaii and other Pacific areas.
- 441 (472) THE FAMILY (3) I, II** **Chandler, Cheng, Yamamura**
Culturally distinctive family types as background for analysis and interpretation of the American family.
- 443 (480) SOCIOLOGY OF RELIGION (3) I** **Hormann, Wittermans**
Structure, function, dynamics of religion in various types of society.
- 445 (482) SOCIOLOGY OF EDUCATION (3) I, II** **Swift, Weinstein**
Institutionalization of socialization and allocation processes. Transmission of cultural styles and values; social organization of classrooms, schools, school systems and their intersection with other social institutions; careers of students and teachers.
- 447 (486) INDUSTRIAL SOCIOLOGY (3) I, II** **Won**
Status system in industry. Problems of group adjustment. Factors affecting industrial morale. Sociology of industrial conflict.
- 449 (490) SOCIAL STRATIFICATION (3) II** **Krauss**
Analysis of social class; local and national stratification patterns; social mobility in industrial and non-industrial societies.
- 455 (504) JUVENILE DELINQUENCY (3) I, II** **Ball, Sakumoto**
Nature and extent of juvenile delinquency; theories and research; sociology of correction.
- 465 (530) SOCIOLOGY OF SMALL GROUPS (3) I** **Bloombaum, Weinstein**
Practical application of theories and research findings involving face-to-face relations; leadership, prestige, group morale.
- 470 (545) COLLECTIVE BEHAVIOR AND SOCIAL MOVEMENTS (3) I, II** **Glick**
Elementary forms of collective behavior; crowds, publics, mass behavior; social movements, their development and relation to social change.
- 481 (560) METHODS OF SOCIAL RESEARCH (3) I, II** **Bloombaum, Brodie**
Values and limitations of methods of research for various types of studies. Pre: 9 credits in sociology or consent of instructor.
- 485 (570) SOCIAL STATISTICS (3) I, II** **Yamamura**
Introduction to statistical methods and resources as applied to social research data.
- 491 (580) SOCIOLOGICAL THEORY (3) II** **Ball, Sakumoto**
History of sociology as reflected in writings from early Greek thought to modern authors such as Durkheim, Pareto, Simmel, Parsons, Merton.

610 METHODS AND STATISTICS I (3) I

Logic of social research; principles of conceptualization, formal design, observation. Pre: 570 or equivalent.

611 METHODS AND STATISTICS II (3) II

Logic of social research; statistical treatment of social data. Pre: 610.

612 CLASSICS OF SOCIOLOGICAL THEORY (3) I

Study in depth of selected works by early sociologists such as Emile Durkheim and Max Weber. Influence of such works upon modern sociology. Pre: consent of instructor.

613 CONCEPTS AND PROPOSITIONS IN SOCIOLOGY (3) II

Survey of major propositions in modern sociology. Sociological concepts such as primary group, social role, social class related to these propositions; their place in sociological theory and research. Pre: consent of instructor.

714 SEMINAR IN METHODS OF RESEARCH (3) I, II

Individual or group projects providing training in (1) the design of social research, (2) field techniques, (3) survey research design, (4) survey data analysis. Pre: consent of instructor.

715 SEMINAR IN SOCIAL STATISTICS (3) I, II

Advanced statistical procedures; may include individual projects. (1) Measurement of social variables, (2) data analysis. Pre: consent of instructor.

716 SEMINAR IN THEORY CONSTRUCTION (3) II

Application to sociology of logical or mathematical deductive systems. Nature of such systems and their application to sociology. (1) Logical models, (2) mathematical models. Pre: consent of instructor.

720 SEMINAR IN SOCIAL ORGANIZATION (3) I, II

Structural elements of human group life. (1) Industrial sociology, (2) social stratification, (3) social control. Pre: consent of instructor.

721 SEMINAR IN SOCIAL INSTITUTIONS (3) I, II

Structure, function, growth of social institutions. (1) Sociology of law, (2) sociology of religion, (3) the family, (4) political sociology, (5) Chinese society, (6) Japanese society, (7) sociology of education. Pre: consent of instructor.

722 SEMINAR IN GROUP RELATIONS (3) I, II

Major theoretical developments and research problems in fields of race relations and minority relations. (1) Race relations, (2) minority relations. Pre: consent of instructor.

730 SEMINAR IN SOCIAL DISORGANIZATION (3) I, II

Theory and research in social disorganization; institutionalization of criminals and juvenile delinquents. (1) Deviant behavior, (2) juvenile delinquency and criminal behavior, (3) penology. Pre: consent of instructor.

731 SEMINAR IN SOCIAL CHANGE (3) I, II

Principles, processes, problems of social change. Emphasis on non-Western societies undergoing industrialization. (1) Social change in developing areas, (2) social movements, (3) community development. Pre: consent of instructor.

740 SEMINAR IN SOCIAL PSYCHOLOGY (3) I, II

Individual behavior in social contexts; may include individual projects. (1) Social interaction, (2) socialization, (3) social conflict. Pre: consent of instructor.

741 SEMINAR IN CULTURE AND COMMUNICATION (3) I

Theories of communication; interaction between oral traditions, the press and audio-visual mass media in cultural context. Pre: consent of instructor.

750 SEMINAR IN DEMOGRAPHY AND HUMAN ECOLOGY (3) I, II

Principles and techniques in population analysis; factors affecting distribution of population, public utilities, social institutions. (1) Demography, (2) human ecology. Pre: consent of instructor.

751 SEMINAR IN URBAN AND RURAL SOCIOLOGY (3) I, II

Structure and dynamics of major types of human communities; effects on social and personal life organization. (1) Urban, (2) rural. Pre: consent of instructor.

799 DIRECTED RESEARCH (arr.) I, II

Pre: graduate standing; consent of instructor.

800 THESIS RESEARCH (arr.) I, II

Speech-Communication (Sp)

Professors DYKSTRA, ELLINGSWORTH, HOSHOR, RIDER, WHAN; Associate Professors BILSBORROW, BRENEMAN, BYERS, S. HARMS, HEINBERG, KLOPF, WONG; Assistant Professors ANDERSON, DILLARD, DYER, EKROTH, ELLIS, HERVEY, KRAUSE, LARSON, OWEN, RICHARDS, SANDERSON, WATSON, WELDEN; Instructors DAME, FERGUSON, J. HARMS, MINN, OXFORD, WRIGHT, YAMADA

101 SPEECH-COMMUNICATION PROCESSES (3) I, II

Introduction to study of speech-communication through models of the process. Examination of major variables of source, message, medium, receiver and how their interaction affects speech-communication. Core requirement for majors in speech and education in lieu of 145. Pre: Speech Communication Center clearance.

145 EXPOSITORY AND PERSUASIVE SPEAKING (3) I, II

Practice in systematic analysis of expository and suasive ideas with instruction in their preparation for public discourse. Weekly lectures. Pre: Speech Communication Center clearance.

202 MEDIA UTILIZATION AND MANAGEMENT (3) I

Examination of human nervous system and its relationship to information media. Study of ways in which sender and receiver influence utilization and management of particular media. Pre: 101.

203 MESSAGE DEVELOPMENT (3) II

Theory and practice in development of speech-communication messages. Consideration of what can be known, how it can be known, how it can be expressed, and how communication purpose acts as criterion for selecting, evaluating, arranging statements. Pre: 101; 202 recommended.

211 (210) GENERAL PHONOLOGY (3) I, II

Dynamic phonology of American English. Systematic goal-oriented study of dialects in use. Modification of speech for particular purposes including pedagogy. Pre: ability to transcribe International Phonetic Alphabet according to established standard; or consent of instructor.

221 (365) SPEECH-COMMUNICATION IN THE MANAGEMENT OF LEARNING (3) I, II

Overview of principles of speech-communication management: message composition, media utilization and evaluation of speech-communication events, with special reference to problems of teaching-learning. Part of pre-service or in-service preparation of teachers; not intended for majors in speech-communication. Pre: 101 or 145.

231 (230) READING ALOUD (3) I, II

Principles of interpretative reading. Practice in textual analysis and in transmitting intellectual and aesthetic content of literature. Pre: 101 or 145.

251 (250) PUBLIC SPEAKING (3) I, II

Adaptation of rhetorical theory to particular speakers, audiences, occasions. Extensive practice in planning and delivering speeches. Pre: 101 or 145.

253 (485) ARGUMENTATION AND DEBATE (3) I

Adapting ideas about communication theory to structuring of argumentative strategies for social action. Extensive practice in formal argument. Pre: 101 or 145.

261 (270) BROADCASTING (3) I

Analysis and survey of radio and television as communications media and as industries.

304 SPEECH-COMMUNICATION CHARACTERISTICS OF THE SOURCE (3) I

Acoustical, anatomical, physiological and psychological relationships involved in processes of communication between source-receivers. Pre: 101 or 145; ability to meet established standards for transcribing IPA or consent of instructor.

305 LANGUAGE IN SPEECH-COMMUNICATION BEHAVIOR (3) II

Effects on communication process attributable to language forms and meanings. Pre: 202, 203, or concurrent registration.

333 (335) STORYTELLING (2) I, II

Esthetic communication through storytelling for entertainment and education. Oral tradition; analysis of story types; techniques of preparation and presentation; performance.

352 (480) GROUP SPEECH-COMMUNICATION (3) II

Study of discussion within context of small group. Effects of variables such as group organization, leadership, membership, goals on how group attempts to achieve its purpose. Pre: 101 or 145.

362 (370) RADIO-TV SPEECH-COMMUNICATION (3) I, II

Study of speech forms and principles as adapted for broadcasting media. Preparation of radio and television program material; performance with emphasis on microphone and camera presentation.

363 (271) RADIO PRODUCTION (3) I

Programs and analysis of techniques. Announcing and use of equipment, basic control; performance.

364 (475) TELEVISION PRODUCTION (3) II

Preparation and production of basic television forms; studio experience in staging and performance; creative and skills functions of production team; standards for critical evaluation of programs.

406 EVALUATION OF SPEECH-COMMUNICATION (3) II

Development of skill in evaluation of appropriate variety of speech-communication activities. Pre: 101 and at least three of 202, 203, 304, 305, or consent of instructor.

412 (615) PHONETICS AND PHONEMICS OF AMERICAN ENGLISH (3) I, II

Major transcription systems of American English sounds. Application of English phonology to problems of acceptable pronunciation in English language learners. Role of teacher in developing materials and techniques based on phonetic and phonemic analysis. Pre: 211 or Ling 202 or Ling 620.

434 (430) ADVANCED INTERPRETATIVE READING (3) I, II

Problems in selected literary forms; development and arrangement of programs; introduction to group interpretation; individual and group reports and performances. Pre: 231, Eng 151, or consent of instructor.

465 (470) BROADCASTING AND THE PUBLIC (3) II

Relationship and interaction between broadcasting agent, government regulatory agencies, and public. Development of bases for critical evaluation of educational, cultural, and economic significance and impact of broadcasting.

491 (440) SEMANTICS (3) I, II

Understanding language; verbal meaning and implication; roles of perception and assumption (inference and judgment) in human relationships.

499 (598) SPECIAL PROBLEMS (arr.) I, II

(1) Speech-communication behavior; (2) teacher preparation; (3) oral interpretation; (4) public address; (5) broadcasting; (6) microsystems; (7) macrosystems. Pre: consent of instructor or department chairman.

See *Graduate Division Bulletin* for course listings 600 and above.

Zoology (Zool)

Senior Professors HIATT, TESTER; Professors BANNER, BERGER, CHU, GOSLINE, HSIAO, MATTHEWS, TOWNSLEY, VAN WEEL; Associate Professors CHENG, KAMEMOTO, REESE; Assistant Professors BRANHAM, EBERT, HALEY

Biology 220 is prerequisite to Zoology 202. Zoology 202 (or consent of the instructor) is prerequisite for all higher numbered zoology courses taken for undergraduate credit.

- 101 PRINCIPLES OF ZOOLOGY (4) I, II (3 L, 1 Lb)** **Staff**
Introduction to zoology for non-science majors. Living animals, their structure, development, reproduction, derivation, habits, ecology, with emphasis on their relationship to man and society.
- 202 (201-202) GENERAL ZOOLOGY (4) II (3 L, 1 Lb)** **Staff**
Comprehensive approach to types, functional morphology, life cycles of animals. Concepts of inheritance, evolution, environmental interaction. Pre: Biol 220.
- 310 (405) INVERTEBRATE ZOOLOGY (4) I (2 L, 2 Lb)** **Banner**
Morphology, evolution, systematics, ecology, life history of invertebrate phyla.
- 320 (406) VERTEBRATE ZOOLOGY (4) II (2 L, 2 Lb)** **Hsiao**
Classification, evolution, functional anatomy, and development of vertebrates.
- 330 (401) PRINCIPLES OF ECOLOGY (2) I** **Ebert**
Distribution and abundance of organisms discussed in relation to physical, physiological, population and community parameters.
- 340 (410) PARASITOLOGY (3) II (2 L, 2 Lb)** **Chu**
Parasitology with reference to man and domestic animals; classification, comparative morphology, life history, control.
- 360 (441) HISTORY OF ZOOLOGY (2) II** **Banner**
Development of zoological science as specialized field of human knowledge.
- 416 HISTOLOGY (3) I (2 L, 2 Lb)** **Staff**
Studies of tissues, principles of histology, and microscopic anatomy of limited number of vertebrate animals.
- 417 (425) MICROTECHNIQUE (3) I (2 L-Lb)** **Matthews**
Fixing, staining, mounting of tissues, entire animals and organs.
- 420 (301) EMBRYOLOGY (3) I (2 L-Lb)** **Haley**
Descriptive and analytical embryology of selected vertebrates and invertebrates.
- 430 (345) ANIMAL PHYSIOLOGY (3) I (2 L, 2 Lb)** **van Weel**
Properties of protoplasm; functions of organ systems, fundamental principles.
- 435 (505) ENDOCRINOLOGY (2) II** **Kamemoto**
Anatomy and physiology of the organs of internal secretion, role of hormones in metabolism and development.
- 450 NATURAL HISTORY OF HAWAIIAN ISLANDS (2) II (2 L-Lb)** **Gosline, Lamoureux**
Geography, geology, climatology, biotic environment of Pacific Basin and Hawaiian Islands; evolution of terrestrial biota of oceanic islands.
- 460 AVIAN BIOLOGY (3) II (2 L, 1 Lb)** **Berger**
Introduction to anatomy, physiology, annual cycle, behavior, distribution, taxonomy of birds; special attention given to Hawaiian and oceanic birds.
- 465 (525-526) GENERAL ICHTHYOLOGY (3) I** **Gosline**
Anatomy, physiology, ecology, distribution.

- 470 LIMNOLOGY (3) II (2 L-lb)** **Macielek**
Biology, physics, chemistry of lakes, streams, estuaries, including field and laboratory techniques.
- 480 (504) ANIMAL EVOLUTION (2) II** **Staff**
Processes of evolution; interaction between population genetics and natural selection in animals. Desirable preparation: Genetics 451.
- 490 (390) GENERAL ZOOLOGY SEMINAR (1) I, II** **Staff**
Reports on research or reviews of literature. Pre: senior standing. Required of students majoring in zoology or entomology.
- 493-494 (394-395) SENIOR HONORS THESIS (2-2) Yr.** **Staff**
- 499 (399) DIRECTED READING OR RESEARCH (arr.) I, II** **Staff**
Limited to senior majors with 2.7 grade-point ratio or 3.0 grade-point ratio in zoology.
- 603 ZOOGEOGRAPHY (2) I** **Gosline**
Animal distributions; physiographic, climatic, and historic factors. (Alt. yrs.; offered 1969-70.)
- 605 COMPARATIVE ENDOCRINOLOGY (4) I (3 L, 2 Lb)** **Kamemoto**
Biology of hormonal mechanisms, with emphasis on invertebrates and lower vertebrates. Lecture only may be taken for 3 credits.
- 606 ANIMAL BEHAVIOR (3) II (2 L, 2 Lb)** **Reese**
Orientation and the ethological approach are stressed; behavioral physiology and learning theory are included.
- 608 GROWTH AND FORM (4) II (2 L, 2 Lb)** **Haley**
Analysis of normal growth patterns. Regulating mechanisms of normal growth, differentiation and influence of environmental factors.
- 609 (510) BIOLOGY OF SYMBIOSIS (4) I (2 L, 2 Lb)** **Cheng**
Obligatory and facultative relationships between animal species, including mutualism, commensalism, and parasitism, examined from structural and physiological viewpoints.
- 610 TOPICS IN DEVELOPMENTAL BIOLOGY (2) I, II** **Staff**
Discussion and survey of literature pertaining to specific topics in developmental biology.
- 611 PRINCIPLES OF SYSTEMATIC ZOOLOGY (3) I** **Gosline**
Taxonomic categories; processes of evolution in their development; taxonomic data; rules of nomenclature.
- 620 MARINE ECOLOGY (3) II (2 L, 2 Lb)** **Ebert**
Principles of ecology are discussed in relation to marine biota and environment.
- 622 ISOTOPIC TRACERS IN BIOLOGY (3) II (2 L, 1 Lb)** **Townslay**
Chemical and physical features of radioactive isotopes used in biological work. Methods of detection; application to biological systems.
- 629 METHODS OF FISHERIES INVESTIGATION (3) I** **Staff**
Determining age, growth, spawning success, life history of fish; emphasis on marine species of the Pacific.
- 631 (431) BIOMETRY (3) I (2 L-lb)** **Tester**
Elementary statistical methods; confidence interval, chi-square, t-test, normal distributions, regression, correlation.
- 632 (432) ADVANCED BIOMETRY (3) II (2 L-lb)** **Tester**
Analysis of variance and covariance, curvilinear regression, multiple correlation, design of experiments. Pre: 631.
- 646 COMPARATIVE INVERTEBRATE PHYSIOLOGY (3) II (2 L-lb)** **van Weel**
Life processes, with emphasis on marine invertebrates. (Alt. yrs.; offered 1970-71.)

- 666 (525-526) ADVANCED ICHTHYOLOGY (3) II** **Gosline**
Classification with reference to Hawaiian species. (Not offered 1968-69.)
- 691 SEMINAR IN ZOOLOGY (1) I, II** **Staff**
Reports on research or reviews of literature. Graduate students required to take this course or one Topics course per year.
- 699 DIRECTED RESEARCH (arr.) I, II** **Staff**
Directed research and reading in various fields of zoology.
- 702 (602) PREPARATION OF SCIENTIFIC MANUSCRIPTS (1) I** **Staff**
Use of bibliographical tools; styles and methods of preparation for publication. Required of all students for Ph.D. degree in zoology or entomology.
- 715 TOPICS IN INVERTEBRATE ZOOLOGY (3) I, II (2 I, 2 Ib)** **Staff**
Comparative morphology, development, taxonomy, and phylogeny of invertebrate taxa.
- 716 TOPICS IN FISH AND FISHERIES BIOLOGY (3) II** **Staff**
Lecture-discussion of various aspects of fish and fisheries biology.
- 718 TOPICS IN ANIMAL PHYSIOLOGY (3) II** **Staff**
Selected problems in general physiology, physiological ecology, electrophysiology, or neurophysiology. Basic concepts and measurements of function at the organismic or cellular level in animals. Topics will change each semester or course year. May be repeated for different topics.
Spring 1969: Electrophysiology. Emphasis on electrical biopotentials as signals of cell and organ activity. van Weel.
Spring 1970: Physiological ecology. Physiological adaptations to environment: respiration, circulation, nutrition, reproduction, etc.



A School of Travel Industry Management and three academic departments comprise the College of Business Administration, located in Hawaii Hall. The departments are accounting and finance, business economics and statistics, and management, marketing and industrial relations.



College of Business Administration

THE COLLEGE OF BUSINESS ADMINISTRATION was founded in 1949 and accredited by the American Association of College Schools of Business in 1967. The function of the College is to prepare students for business leadership in Hawaii and the Pacific area. Students are provided with a solid foundation, both theoretical and practical, in the structures, functions and objectives of business enterprise. The four-year program leads to the Bachelor of Business Administration degree.

As part of the Business Administration program, the student will complete a broad foundation of courses in liberal arts, humanities, and physical and social sciences which serves as a base for an economics minor, a core of basic business subjects, and a specialized field of business activity selected by the individual student.

Juniors and seniors in the College of Business Administration will complete additional general requirements. Each student will select one of the following specializations: accounting, finance, business economics and statistics, foreign trade, insurance, management, marketing, personnel and industrial relations, and real estate. The School of Travel Industry Management offers a special program; students entering the University as freshmen should indicate their wish to enter this program.

Academic advising and career counseling in business are available in the College to all students interested in these services. This includes students presently enrolled in the College and students in other colleges. All faculty members are available for career counseling during office hours or by appointment. Academic advising and career counseling are available in the office of the assistant dean of the College except for students in the School of Travel Industry Management, who receive these services in the office of the assistant dean of the School of TIM.

Admission and Degree Requirements

Students may enter the College of Business Administration as freshmen in accordance with the University of Hawaii requirements, or may transfer into the College of Business Administration at any time in their college career from another college in the University of Hawaii, or as transfer students from another institution if they have a 2.0 grade-point average.

General Education Requirements	CREDITS	
Communications	9	
Quantitative Reasoning (Math 134).....	4	
World Civilizations	6	
Humanities	9	
Natural Sciences	10-12	
Social Sciences (Econ 150 is required, and Geog 102 for TIM majors).....	9	
		47-49
Pre-Business Requirements		
Economics 150 (<i>see above</i>)		
Accounting 201, 202 (sophomore standing).....	6	
BAS 111	3	
		9
		56-58
Additional Requirements for Pre-Business Students in Travel Industry Management		
TIM 101	3	
FSA 181	3	
TIM 200-201	0-0	
		6

In order to qualify for a degree a student must:

1. Meet all pre-admission requirements to the College;
2. complete one of the ten curricula of the College;
3. complete the University curricular requirements (*see pp. 49-51*);
4. earn an aggregate of at least 124 semester hours of credit;*
5. earn a 2.0 grade-point ratio for all registered credits, and in the major field (*see "Degree Programs"*).

Curricula

All students must complete the following:†

- Group I. Economics (9 credit hours): Business Economics 303, 341, 342.
- Group II. Business Core (24 credit hours): Business Analysis and Statistics 301-302; Finance 300; Law 300; Management 300, 345; Marketing 300; and Personnel and Industrial Relations 300.
- Group III. A major of 15 credit hours (18 for Accounting). *See below.*
- Group IV. English 209, and 12 credit hours of upper division courses, at least 6 of which must be outside of the College of Business Administration.

* Applies to students entering the College after June 1, 1966; TIM excepted.

† Travel Industry Management is an exception; see requirements listed under majors.

Majors

ACCOUNTING. Required: Acc 301–302, 350, 315, 325, 331.

FINANCE. Required: Acc 321, 325; Fin 305, 311. Elective: one of BAS 315, Econ 450, Ins 300, Law 310, RE 300.

BUSINESS ECONOMICS AND STATISTICS. Required: BAS 320. Electives: four of BAS 310, 315, 396; BEc 305, 361, 362, 375, Trans 351, 352.

FOREIGN TRADE. Required: BEc 361, 362; Mkt 315, 381. Elective: one upper division business administration course.

MANAGEMENT. Required: Mgt 321, 322, 341. Electives: two upper division business administration courses.

MARKETING. Required: Mkt 315, 331, 341, 381. Elective: one upper division business administration course.

PERSONNEL AND INDUSTRIAL RELATIONS. Required: PIR 351, 352, 361, 362; Mgt 341.

REAL ESTATE. Required: RE 300, 310, 330, 341. Elective: one of Acc 325, RE 321, 350.

SCHOOL OF TRAVEL INDUSTRY MANAGEMENT

Created by action of the board of regents in May 1967, the School of Travel Industry Management in the College of Business Administration of the University of Hawaii is unique throughout the entire world. Administratively, the specific requirements for a student who wishes to graduate from the School of Travel Industry Management are: (a) Internship—direct paid-work-experience each year for four years (200 hours each, or a total of 800 hours) to orient the student to a succession of increasingly sophisticated exposures that will make the more theoretical approaches of the classroom take on greater relevance; (b) the General University Requirements plus the lower-division business requirements; (c) the College of Business core requirements (Group I, Group II); 12 credit hours of upper division courses including 6 credit hours outside the College, except that food service administration courses indicated may be substitutes for 9 of the required 12 credit hours of upper division courses including the 6 credit hours outside of the College; Group III courses are the special "major" requirements for TIM, and represent a total of 23 credit hours which apply to each student regardless of which of the three "areas of emphasis" is selected. Total minimum credit hours in this program are: 2 in Internship; 48–49 in the general University core; 6 in special lower-division business requirements; 39–42 depending on number of food service administration courses in the selected area of emphasis; and 23 credit hours in each area.

The hotel management, food service management, and tourism administration areas are the three from which the student may choose. The composition of each of these areas is indicated in the chart below, while any one of them assures that the student has some exposure to each of the others. The nature of the industry will demand knowledge in all of these areas, although our programs provide opportunities for extra attention to one or another for those who have a preference.

**HOTEL ADMINISTRATION
EMPHASIS**

	CREDITS
TIM 330, 350.....	6
TIM 320 or 321 or 322.....	3
TRANS 350 or 351.....	3
RE 351.....	3
FSA 281, 383.....	6
TIM 300, 400.....	2
	<hr style="width: 100px; margin-left: auto; margin-right: 0;"/> 23

**FOOD SERVICE MANAGEMENT
EMPHASIS**

	CREDITS
TIM 350.....	3
TIM 320 or 321 or 322.....	3
RE 351.....	3
FSA 281, 283, 383, and 384.....	12
TIM 300, 400.....	2
	<hr style="width: 100px; margin-left: auto; margin-right: 0;"/> 23

**TOURISM ADMINISTRATION
EMPHASIS**

	CREDITS
TIM 320, 321, and 322.....	9
TRANS 350-351.....	6
RE 351.....	3
FSA 281 or 283.....	3
TIM 300, 400.....	2
	<hr style="width: 100px; margin-left: auto; margin-right: 0;"/> 23

BUSINESS ADMINISTRATION COURSES

See pp. 4-5 for a discussion of course descriptions.

Senior Professor ROBERTS; Professors ADLER, ASCHER, BAILEY, BARNET, BUCHELE, CORBIN, EVANS, FERGUSON, GILSON, GRAYSON, IGE, JACOBSEN, LOWE, MICCIO, OMP, PENDLETON, RICHMAN, SPENCER, WHITEHILL; Associate Professors HOPKINS, LEE, SASAKI, SEO; Assistant Professors BELL, BESS, BICKSLER, BUCH, BURY, CHUNG, CONGDON, COX, CURRIE, FREITAS, IYENGAR, JACOBS, KIM, KIRKPATRICK, NOREM, PETERSON, PIERSOL, STELLMACHER, TRINE; Instructors AVERBOOK, MCARDLE; Lecturers BONBRIGHT, BOYNE, LASCELLES, MIYOI, WEST

DEPARTMENT OF ACCOUNTING AND FINANCE

Accounting (Acc)

201-202 (100-101) ELEMENTARY ACCOUNTING (3-3) Yr.

Theory and practice of income determination and asset valuation. Preparation and analysis of statements; uses for decision making. Pre: sophomore standing.

301-302 (200-201) INTERMEDIATE ACCOUNTING (3-3) Yr.

Critical examination of generally accepted accounting principles as applied to preparation and use of financial statements. Pre: 202.

315 COST ACCOUNTING (3) I, II

Cost determination and analysis as tool of management in such areas as pricing, make, rent or buy decisions. Job order, process, direct and standard costs. Pre: 301.

321 (320) MANAGEMENT ACCOUNTING (3) I, II

Use of accounting information for managerial decision making and profit planning. Budget, cost and other financial analyses to control and measure efficiency of business. For non-accounting majors only. Pre: 202.

325 INCOME TAX PROBLEMS (3) I, II

Federal income tax laws and related accounting problems; individual, partnership and corporation returns. Pre: 202.

331 (330) AUDITING (3) I, II

Principles of conduct of business audit. Practical aspects of auditing emphasized by problems. Pre: 202 and 315.

335 (435) GOVERNMENTAL ACCOUNTING (3) I, II

Account classification, budgetary procedure, fund accounting, revenues, operating costs. Pre: 202.

341 (310) SYSTEMS AND PROCEDURES ANALYSIS (3) I, II

Cost and value of business information; feasibility applications and equipment studies; analysis and design problems; programming; implications for audits. Pre: 315.

350 (300) ADVANCED ACCOUNTING (3) I, II

Consolidated statements, fiduciaries, other special problems of accounting. Pre: 302.

760 (660) ADVANCED AUDITING (3)

Advanced studies of auditing standards, internal control, professional ethics and audit reports, including those required by S.E.C. and illustrative cases.

761 (661) ADVANCED COST AND CONTROLLERSHIP (3)

Specialized cost accounting systems; uses and interpretations by management. Controllership function in business organization.

762 (662) ADVANCED TAXES (3)

Advanced aspects of incomes, deductions, exclusions, credits, as they relate to tax problems of individuals, estates, trusts, partnerships, corporations.

765 (665) ACCOUNTING HISTORY AND THEORY (3)

Historical development of accounting theory, emphasizing pronouncements of American Institute of C.P.A.'s and American Accounting Association.

770 (670) CONTEMPORARY ACCOUNTING THEORY (3)

Consideration of contemporary issues, with emphasis on recent journal literature.

775 (675) SEMINAR IN ADVANCED ACCOUNTING (3)

Special problems in professional accounting: systems, auditing, cost accounting, fund accounting, consolidations, governmental accounting, taxes.

Finance (Fin)

300 BUSINESS FINANCE (3) I, II

Study of forms and sources of financing business firms large and small, corporate and non-corporate. Emphasis on planning and judgment in formulating decisions on financial problems. Social, legal and economic effects of financial policies. Pre: Acc 202, Econ 150.

305 PROBLEMS OF BUSINESS FINANCE (3) I, II

Application of principles of finance to financial management of business enterprises with particular reference to corporate distributions, mergers, reorganizations. Pre: 300, BEc 303 or consent of instructor.

311 (310) INVESTMENTS (3) I, II

Mechanics of investment banking and markets, corporate and government securities, selection and security analysis, risk programming and establishment of investment policy for individuals and institutions. Pre: 300.

700 PROBLEMS IN BUSINESS FINANCE (3)

Application of financial principles and analytical techniques to current financial problems and developments from view point of business firm.

701 INVESTMENT ANALYSIS AND MANAGEMENT (3)

Techniques of securities analysis, theory of investment and investment decisions; applications to portfolio planning for institutional and individual investors.

702 THE FINANCIAL SYSTEM (3)

Major financial institutions of U.S. economy; their inter-relationships; their importance in facilitating economic activity.

Insurance (Ins)

300 PRINCIPLES OF INSURANCE (3) I, II

What insurance buyers should know about protecting income against illness or premature death; protection of home and business against property losses; third-party liability.

311 (310) PROPERTY INSURANCE (3) I

Protection against loss of personal and business property and income occasioned by fire and allied perils, crime, transportation risks.

321 (320) CASUALTY INSURANCE (3) II

Emphasis on third-party liability coverages: general liability, automobile insurance, workmen's compensation.

331 (330) LIFE INSURANCE (3) II

Policy forms; calculation of premiums, reserves, non-forfeiture values; underwriting; regulation of policy provision; related coverages.

711 RISK MANAGEMENT (3)

Management problems in recognizing risks; alternative methods of handling these risks.

Law (Law)

300 PRINCIPLES OF BUSINESS LAW (3) I, II

American system of jurisprudence, elements of torts, criminal law, property trusts and estates, law of contracts and agency.

311 (310) INTERMEDIATE BUSINESS LAW (3) I, II

Law of business organizations, with emphasis on partnerships and corporations and law of sales, bailments and negotiable instruments; provisions of Uniform Negotiable Instrument Law and Uniform Commercial Code. Pre: 300.

770 LEGAL ENVIRONMENT OF BUSINESS (3)

Analysis of contemporary American business and contractual law with critical examination of contracts, agencies, corporations, trusts, partnerships, Uniform Commercial Code and anti-trust legislation.

DEPARTMENT OF BUSINESS ECONOMICS AND STATISTICS

Business Analysis and Statistics (BAS)

111 (110) APPLIED MATHEMATICS (3) I, II

Application of mathematical operations to problems in business and economics: linear equations; progressions; theory of sets and functions; elementary matrix notation; differential and integral calculus (including partial differentiation, maxima and minima, Lagrange multiplier techniques). Pre: Math 134.

200 CAREER PLACEMENT (1) I, II

Preparation for effective career placement; personal inventory, selecting field of interest, job market, preparation of resumés, employment interviews, employment decisions, initial career experience, progress. Primarily for juniors and seniors.

301-302 (300-301) BUSINESS STATISTICS (3-3) Yr.

Principles of statistical inference, including frequency distribution, averages, variation, testing hypotheses, estimation of population mean, index numbers, time series, correlation, probability, sampling, chi square and F distribution, analysis of variance. Utilization of statistical data as aid to managerial decisions.

311 (310) SAMPLING METHODS (3) I, II

Design and use of random, systematic, stratified and sequential samples for estimation of universe characteristics. Pre: 302.

315 ELECTRONIC DATA PROCESSING FOR BUSINESS (3) I, II

Computers and their memories, inputs and outputs, punched card layouts, possibilities for calculation and decision, program coding, report writing.

321 (320) INTRODUCTION TO QUANTITATIVE ANALYSIS (3) I, II

Tools and techniques for elementary operations research studies; introductory analysis of matrices, determinants and vector analysis for input-output, linear programming and theory of games. Pre: 111, Math 134.

396 METHODS OF SCIENTIFIC RESEARCH APPLIED TO BUSINESS AND ECONOMIC PROBLEMS (3) II

Study of fundamentals of research methodology, including planning, organizing and executing a research project; techniques of gathering data; use of library facilities and other sources of information; analysis and interpretation of data; art and strategy of presenting findings.

780 (680) STATISTICAL DECISION THEORY (3)

Modern statistical decision theory as applied to business decision-making. Topics include probability theory, statistical decision problems, including Bayes decision rules.

781 (681) OPERATIONS RESEARCH (3)

Methods of operations research from executive or managerial viewpoint, with emphasis on application of mathematical and statistical techniques to management decision-making; linear and non-linear programming, game theory, queueing theory, replacement theory, etc.

782 (682) QUANTITATIVE METHODS OF BUSINESS AND ECONOMIC FORECASTING (3)

Projection and forecasting of Hawaii and U.S. economies with time series and cross-section data, using modern statistical and econometric techniques with some reference to needs of long-range planning.

Business Economics (BEc)

Economics 150 is prerequisite to all other courses.

303 MONEY, CREDIT AND THE CAPITAL MARKET (3) I, II

Nature and functions of money, debt and credit, liquidity; financial institutions and money market analysis; fund flow analysis.

305 BUSINESS ENTERPRISE AND BUSINESS FLUCTUATIONS (3) II

Characteristics and causes of business fluctuations; means of coping with recession and inflation by business firms and government; business forecasting.

341 (340) MANAGERIAL ECONOMICS I (3) I, II

Demand analysis; production analysis relating to factors and products; various forms of imperfect competition; demand creation and selling costs; multiproduct output; technological change; problems of uncertainty. Pre: Math 134, BAS 111.

342 (311) MANAGERIAL ECONOMICS II (3) I, II

Working concepts and case studies relating to demand analysis and production analysis; problems of demand creation, multifactors and multiproducts, technological change; cases involving working capital, financing and capital budgeting; input-output analysis and programming techniques. Pre: 341.

361 (360) FOREIGN TRADE AND AMERICAN INDUSTRY (3) I

Introduction to world trade, its development and current status; study of foreign trade principles, including international commercial problems and policies, tariff policies and exchange controls that affect exporting and importing industries.

362 (361) FOREIGN TRADE POLICY AND FINANCE (3) II

Study of means and ends of international trade: international commodity agreements and commercial treaties, international banking facilities, foreign credits, foreign exchange, foreign investments.

375 BUSINESS ENTERPRISE AND PUBLIC POLICIES (3) I, II

Study of interrelations between business and government. Special attention to analysis of public policies affecting business management: regulating monopoly and competition; businesses affected with public interest; use of subsidies to promote public purposes; use of government financing to regulate business.

791 (691) MANAGERIAL ECONOMICS (3)

Applications of economic analysis to wide variety of problems in business. Topics include management decision theory, profit, demand, production, cost, pricing, competition, capital budgeting.

792 (692) CURRENT ECONOMIC PROBLEMS (3)

Study of modern issues and problems in business economics. Topics may vary from term to term.

793 (693) CAPITAL MARKETS AND INTERNATIONAL FINANCE (3)

Supply and demand for capital in national and international markets. Nature of capital movements and role of capital in industrialization of regions and nations.

**DEPARTMENT OF MANAGEMENT, MARKETING,
AND INDUSTRIAL RELATIONS****Management (Mgt)****300 PRINCIPLES OF MANAGEMENT (3) I, II**

Basic management functions of planning, controlling, organizing, staffing, directing; emphasis on human factors and quantitative analysis in developing management philosophy. Critical evaluation of current practices in business firms.

321 (320) OPERATIONS MANAGEMENT I (3) I, II

Planning effective office and manufacturing operations: historical development, human factors, methods analysis, work measurement, location layout, machines and equipment, records management. Pre: senior standing.

322 (321) OPERATIONS MANAGEMENT II (3) I, II

Control techniques for office and manufacturing operations: inventory and production planning and control, inspection and statistical quality control, computers and automation. Pre: 321.

341 (340) HUMAN FACTORS IN MANAGEMENT (3) I, II

Human relations in business; contributions of sociology and psychology to management process and to understanding of individual behavior in organizations.

345 (350) BUSINESS POLICY (3) I, II

Case studies in assessing alternative risks in solving policy problems; an interdisciplinary approach applying and integrating many subjects in college curriculum. Pre: 2nd semester senior standing.

Admin 600 THEORY OF ADMINISTRATION (3)

Analysis of theory of administrative processes. Similar to Bus 625 but offered to students from other departments (political science, educational administration, public health, social work), as well as from business administration. Substitute for Bus 625 in M.B.A. programs, but students may not receive credit for this course and Bus 625. Pre: Bus 605.

720 ORGANIZATION THEORY AND PRACTICE (3)

Evolution of organization theory and practice with major emphasis on contemporary organizational problems, issues and developments.

721 COMPARATIVE MANAGEMENT (3)

Cross-cultural analysis of values and environmental constraints which shape management patterns and policies. Emphasis on Pacific area nations.

722 PRODUCTION AND OPERATIONS MANAGEMENT (3)

Critical review of development of production and operations management. Planning, decision-making, control of office and manufacturing operations.

Marketing (Mkt)**300 PRINCIPLES OF MARKETING (3) I, II**

Fundamental concepts and problems of marketing within present economic, legal and social environments; consumer analysis, functional analysis, marketing institutions. Prerequisite to all other marketing courses.

315 MARKETING MANAGEMENT (3) I, II

Analysis and solution of problems involving pricing, distribution, product strategy, promotion and marketing research from management view point. Economic and social responsibilities of marketing function emphasized.

331 (330) ADVERTISING MANAGEMENT (3) I, II

Advertising decision making, advertising's role in marketing mix, primary demand stimulation, selective demand stimulation, building complete programs, advertising agency relationships.

341 (340) RETAILING MANAGEMENT (3) I, II

Principles, functions and analysis of problems in retailing: location and layout; merchandise planning, buying and selling; organization; expense analysis and control; coordination of store activities.

381 (380) MULTI-NATIONAL MARKETING (3) I, II

Methods and organization peculiar to international marketing, with emphasis on practical and technical aspects.

730 MASS MARKETING MANAGEMENT (3)

Concepts and awareness required for survival of firm in dynamic transition from local to regional to national and international marketing for mass and class-mass markets.

731 MARKETING COMMUNICATION AND PROMOTIONAL STRATEGY (3)

Variables that affect or control communication process: theoretical considerations stressed in presenting hypotheses, techniques, research studies. Within this framework advertising, personal selling, promotion viewed analytically.

732 MARKETING RESEARCH METHODOLOGY (3)

Research aids to marketing management: problem specification, hypothesis formulation, sample design, questionnaire construction, data collection, analysis, policy recommendations.

Personnel and Industrial Relations (PIR)

300 (350) PERSONNEL AND LABOR RELATIONS (3) I, II

Introduction to labor and trade unionism; introduction to personnel management principles and practices.

351 PERSONNEL SELECTION AND TRAINING (3) I, II

Policies and procedures essential to staffing, developing and maintaining proper relationships at all organizational levels.

352 PERSONNEL COMPENSATION (3) II

Wage and salary systems, payments and incentives; fringe benefits; evaluation of jobs at all levels.

361 LABOR PROBLEMS AND TRADE UNIONISM (3) I

Problems and economics of labor; history, structure, government, activities of trade unions; social and labor legislation.

362 COLLECTIVE BARGAINING AND DISPUTE SETTLEMENT (3) II

Principles and concepts of collective bargaining; methods of settling disputes over rights and interests.

740 MANAGEMENT STAFFING AND DEVELOPMENT (3)

Line and staff responsibilities for attraction, motivation, appraisal and development of managerial personnel at all organizational levels.

741 PROBLEMS IN ORGANIZATIONAL HEALTH (3)

Analysis of selected internal and external problems involving human resources in management within context of complex situations.

742 PROBLEMS AND PRACTICES OF LABOR DISPUTE SETTLEMENT (3)

Policies and practices of labor contract administration; fundamentals of grievance handling; fact-finding and mediation techniques; emphasis on arbitration as method of reducing industrial conflict.

SCHOOL OF TRAVEL INDUSTRY MANAGEMENT**Real Estate (RE)****300 REAL ESTATE FUNDAMENTALS (3) I**

Principles of real estate for customer, home owner, business; real estate law, brokerage, management, appraisal, finance.

310 REAL ESTATE LAW (3) II

Application of property law to real estate business. Pre: 300.

321 (320) REAL ESTATE FINANCE AND INVESTMENT (3) I

Capital needs and investment opportunities in creating, transferring and holding real property; comparison of functions and techniques of financing organizations. Pre: 300, Fin 300.

330 PROPERTY VALUATION (3) II

Economic, social, legal, physical factors influencing property values; emphasis on local residential market. Pre: 300.

341 (340) LAND ECONOMICS (3) I

Economic principles and social institutions influencing use and ownership of lands for urban and rural purposes. Pre: Econ 150.

350 LAND DEVELOPMENT AND PLANNING (3) II

Planning and developing lands in process of changing use. Economic concepts, market forces and institutional factors that influence dynamics of urban growth. Pre: 300.

351 RESORT AREA DEVELOPMENT (3) I, II

Economic, legal and physical factors in use, transfer, development and administration of lands for purposes of tourism.

750 REAL ESTATE (3)

Application of business techniques to real property resources.

751 ADVANCED REAL ESTATE: LAND DEVELOPMENT (3)

Study and analysis of techniques of planning, developing and marketing land resources.

Transportation (Trans)**351 (350) ECONOMICS OF TRANSPORTATION (3) I**

Development of major transportation systems and their marketing function in American economy as integral part of process of physical distribution. Pre: Econ 151 or BEc 341.

352 (351) PASSENGER TRANSPORTATION (3) II

Analysis of modes of passenger transportation, including rates and services in urban, local, intrastate, interstate and international operation, with particular emphasis on Pacific areas. Impact on areas served. Regulations of carrier operation and passenger travel. Pre: Econ 151 or BEc 341.

Travel Industry Management (TIM)**101 INTRODUCTION TO TRAVEL INDUSTRY MANAGEMENT (3) I, II**

General principles of hotel management and tourism, particularly from standpoint of close link between the two and rapid developments taking place in these fields. Lectures by leaders of hotel and travel industries.

100, 200, 300, 400 (100-200) (300-400) INTERNSHIP (0-0-1-1) (arr.)

200 hours of paid employment in hotel or tourist industry for each course. Employment obtained by student with help and approval of School.

301 HOTEL MANAGEMENT PRINCIPLES (3) I, II

Basic management functions: planning, controlling, organizing, staffing, directing; emphasis on human factors and quantitative analysis in developing sound philosophy of management. Critical evaluation of current practices in business firms. Emphasis on principles as they affect hotel, restaurant, tourism industries.

321 (320) TOURISM PRINCIPLES I (3) I

Study and application of basic components of tourism. Includes philosophy and promotion of tourism, travel counseling, use and evaluation of publicity media, development of tourism at regional, national, international levels.

322 (321) TOURISM PRINCIPLES II (3) II

Travel research and statistics; tourism and its economic significance; preparation and control of tourism budgets; immigration and customs procedures; factors determining priorities in tourist development.

323 (322) TRAVEL AGENCY MANAGEMENT (3)

Management principles covering agency organization and operation. Development of individual and group movements; convention proposals. Human relations; IATA and ATC regulations; tariffs and schedules; finances. Linkage with principal travel service businesses.

331 (330) HOTEL DESIGN, ENGINEERING, AND MAINTENANCE (3) I

Concepts of manager's role in architectural design, engineering and maintenance problems in hotels and resorts, including food service facilities.

351 (350) STUDIES IN HOTEL MANAGEMENT CONTROLS (3) I, II

Cost accounting and controls for hotel and food service operations, including budgeting, front office accounting, food and beverage controls, payroll controls, financial analysis. Pre: Acc 202.

760 ADVANCED TRAVEL INDUSTRY MANAGEMENT (3)

Analysis of factors fostering local, national and international development through travel industry expansion. Actions of international organizations, quasi-governmental and commercial institutions studied to identify economic and social forces melding into new marketing and implementary institutions.

Graduate Courses in Business Administration

Courses in Master of Business Administration Program (Groups I, II, IV are required; Group III is elective.)

Group I—FOUNDATION COURSES—9 credit hours

Bus 605 BEHAVIORAL SCIENCE FOR BUSINESS (3)

Analysis of social and cultural forces that change environmental context for management decision-making. Business problems derived from changing patterns of life examined in terms of social sciences; e.g., anthropology, psychology, sociology.

Bus 610 ECONOMIC ANALYSIS FOR BUSINESS (3)

Economic analysis and background of business firm; economic decisions and economic environment of business.

Bus 615 QUANTITATIVE METHODS FOR BUSINESS (3)

Mathematical methods and techniques of statistical inference used in business.

Group II—CORE COURSES—15 credit hours**Bus 620 ACCOUNTING (3)**

Introduction to financial and managerial accounting. Emphasis on uses of accounting information in planning and control of business enterprise by decision-makers.

Bus 625 ADMINISTRATION (3)

Development of administrative theory and practices; analysis of administrative process as integrated whole; evaluation of current trends and problems. (Student may receive credit for either Bus 625 or Admin 600. Admin 600 is similar to Bus 625 but offered to students from political science, educational administration, public health, social work, as well as from business administration. Admin 600 accepted as substitute for Bus 625.) Pre: Bus 605.

Bus 630 FINANCE (3)

Analysis of fundamental financial problems. Financial planning and management, capital budgeting, securities and other financial instruments, financial markets, principal financial intermediaries. Pre: Bus 620.

Bus 635 MARKETING (3)

Analysis of fundamental problems in marketing management and modern methods of attacking them. Emphasis upon strategy, decision-making and relationship of firm to its customers.

Bus 640 PERSONNEL AND INDUSTRIAL RELATIONS (3)

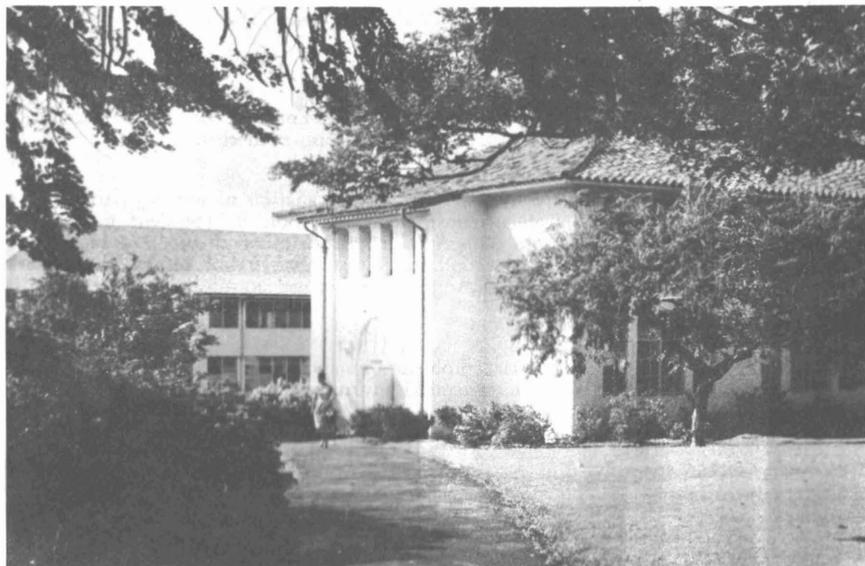
Analysis and critical evaluation of issues, policies and trends in personnel and labor relations which are of concern to management. Pre: Bus 605.

Group III—ELECTIVE COURSES—9 credit hours

All elective courses are listed by subject area under respective departments.

Group IV—INTEGRATION COURSE—3 credit hours**Bus 745 (645) BUSINESS POLICY (3)**

Analysis of comprehensive business problems to provide an integration of learning through resolution of policy issues and through practice in administrative decision-making. Pre: all Foundation and Core courses.



University elementary and high schools provide practical experience for students in the College of Education. The College's upper division program leads to a bachelor's degree and then a five-year certificate.



College of Education

THE COLLEGE OF EDUCATION was established as the Teachers College of the University of Hawaii in September 1931, by Act of the 1931 Legislature of the Territory of Hawaii. The Act merged the Territorial Normal School, then preparing elementary school teachers, with the School of Education in the University, then charged with preparing secondary school teachers, into a single teachers college.

Today the College of Education is an upper-division college and graduate professional school. The major role of the College is the preservice preparation of teachers. A five-year program is available for both elementary and secondary school teacher candidates. Upon completion of two years of study as pre-education majors in the College of Arts and Sciences, candidates are admitted as either elementary education or secondary education majors to pursue three more years of planned course work and student teaching. A Bachelor of Education (B.Ed.) degree is conferred at the end of four years of work, and the state Department of Education (DOE) grants the Provisional Teacher's Certificate. The fifth year may be pursued in full-time study or part-time in conjunction with teaching. At the completion of the full five-year program, a Five-Year Diploma or a Master of Education degree for those who qualify and enter that program is conferred, and the state Department of Education grants the Professional Teacher's Certificate. Holders of baccalaureate degrees in fields other than Education may earn a state of Hawaii Department of Education Professional Teacher's Certificate through one year (usually more time is needed to make up deficiencies) of work in the Classified Professional Certificate Program (CPC).

Undergraduate work leading to a Bachelor of Science degree in recreation is also offered in the College, and substantive service courses are provided in the areas of health, physical education, business education, and industrial arts.

The College currently offers Master of Education degrees in educational administration, educational communications, educational foundations, elementary education, secondary education, and the M.Ed. and Ph.D. in educational psychology. Information concerning these programs can be obtained from the Graduate Division of the University and from the departments offering the various programs.

Research and development and community service are two other very important aspects of the College's functions. The College provides professional leadership and service to projects in the Pacific islands and Southeast Asia. As the only state-supported teacher education institution in Hawaii, the College,

particularly its research and development centers, has responsibility for leading the advance of education in the state through research studies on the learning process and curriculum development of new materials and methods for teaching.

Admission Requirements

The College of Education admits students who have junior standing or higher. Applicants pursuing all programs except those leading to the M.Ed. and the Ph.D. degrees must arrange a personal interview with the staff of the College of Education division of student services. Additional interviews will be arranged with the department of health and physical education for prospective candidates for the B.S. degree in recreation, and with the department of curriculum and instruction for students intending to complete the five-year preservice teacher education program with its B.Ed. degree and Five-Year Diploma or the one-year Classified Professional Certificate program. Specific program requirements are available from the respective departments.

In addition to the University requirements listed on pages 36-40, students entering the College are required:

1. To be competent in written English and have adequate speech patterns;
2. to provide letters of recommendation giving evidence of being able to adjust to the demands of teaching and to cope with the problems of working with students;
3. to obtain medical clearance showing no physical limitations which would interfere with teaching effectiveness;
4. to present transcripts of all college records indicating a cumulative grade-point average according to the following classifications:
 - a) for entering juniors, a cumulative GPA of 2.3
 - b) for entering seniors, a cumulative GPA of 2.4
 - c) for entering graduates, a cumulative GPA of 2.5
5. to submit an application form and transcripts of collegiate work to the division of student services, College of Education, at least 60 days prior to the beginning of the program course work.

The Preservice Teacher Education Program

The current program for all preservice teacher candidates approved by the College and the University Council on Teacher Education is a five-year program including a strong liberal arts core and professional education courses and student teaching. In addition, secondary education majors complete at least one major in a teaching field of the secondary school, and elementary education majors complete an academic major and a distributive major with courses related to the curriculum of elementary schools. Specific requirements are listed in the sections following:

General Education

The general education core requirements of the University (pp. 49–51) with certain modifications constitute most of the non-major courses in the liberal arts and sciences for prospective elementary and secondary teachers. Specific requirements and recommended courses for freshman and sophomore pre-education students may be obtained from the College's division of student services.

Program of Studies for Elementary Education Majors

In addition to the general education requirements, all elementary education majors must complete the following:

- Professional education: student teaching in addition to 19 credits in social, psychological and curriculum foundations, and methods courses in the principal subject areas taught in the elementary school;
- Academic major: a minimum of 24 credits,* varying with the major;
- Distributive major: approximately 36 credits* of courses specifically related to elementary school teaching or to the academic major.

Program of Studies for Secondary Education Majors

In addition to the general education requirements, secondary education majors must complete the following:

- Professional education: student teaching in addition to 12 credits in social, psychological and curriculum foundations, and a methods course in the teaching field major;
- Teaching field major: a minimum of 36 credits,* varying with the major;
- Teaching field minor or courses related to the major: sufficient credits to total (with the major) a minimum of 60 credits,* varying with the teaching field.

Program of Studies for Vocational Home Economics and Vocational Agriculture Education Majors

Prospective vocational home economics and vocational agriculture education majors enroll in the College of Tropical Agriculture for their general education and teaching field major work. Professional education courses, including student teaching, are taken in the College of Education. Upon the completion of the

* Specific requirements are available in the College of Education division of student services. The courses and the number of credits required by the majors and minors may include some of the basic core requirements of the University.

B.S. degree in the College of Tropical Agriculture, these majors enroll in the College of Education during the fifth year to complete requirements for the Five-Year Diploma and the state Department of Education Professional Certificate. To be admitted for work in the College of Education, vocational education majors must meet the general entrance requirements of the College.

Student Teaching

The division of field services of the College of Education plans for, arranges and coordinates the student teaching experiences in the elementary and secondary public and non-public schools of Hawaii. In spite of the hundreds of requests for student teaching during the year, selection of assignments will consider as many personal preferences as possible. Semester preferences will be considered to the extent they allow a balance of teachers in the field during the fall and spring.

Prior to registering for student teaching (Ed CI 390), a student is required:

1. To be enrolled in the College of Education as a classified student;
2. to complete a 30-hour field experience with children of the age group requested in student teaching;
3. to have a cumulative GPA not less than that required for admission to the College, and a GPA in the teaching field (secondary level only) not less than 2.5;
4. to be cleared for student teaching by the division of student services;
5. to be accepted for student teaching by the division of field services upon the recommendations of the instructor(s) of the appropriate methods course(s); and
6. to request student teaching of the division of field services no later than October 15 or March 15 for teaching during the subsequent semester.

The B.Ed. Degree. Although the curricula requirements for the preservice teacher education program is a five-year program, the College awards a Bachelor of Education degree upon completion of four years of work in the University. To be eligible for the B.Ed. degree, the student must:

1. Fulfill all University requirements;
2. complete student teaching and the four-year course requirements of the five-year programs;
3. have completed the National Teachers' Examination (the NTE should be taken during or subsequent to student teaching);
4. acquire an aggregate of 116 semester hours of credit in addition to practice teaching;
5. have a final cumulative grade-point average not less than that required for admission to the College.

The Five-Year Diploma. In recognition of successful completion of the five-year preservice teacher education program for teaching at the elementary or secondary school level, the College awards the Five-Year Diploma. Awarding of the diploma also recommends the student for state of Hawaii Department of Education's Professional Teacher's Certificate. To be eligible for the Five-Year Diploma, the student must:

1. Have the B.Ed. degree or its equivalent including:
 - a) student teaching for which a grade of not less than C was earned;
 - b) course background in general and professional education comparable to the specific four-year requirements of the five-year program offered by the College;
2. complete the course requirements of the five-year program;
3. acquire a minimum of 30 semester hours of credit subsequent to the B.Ed. or its equivalent;
4. have a five-year cumulative grade-point average not less than that required for admission to the College.

The Recreation Leadership Program

The department of health and physical education offers a program of study leading to a B.S. degree in Recreation Leadership. This four-year program is centered in training leaders in community recreation and related fields of recreation. Interested person should contact the chairman of the department.

The Certification Programs

Administrative Intern Program. School administration credentials—elementary, intermediate, secondary and adult—are granted by the state Department of Education after the following requirements have been satisfied: (1) possession of a professional teaching certificate; (2) completion of five years of successful teaching experience; (3) 15 graduate credits in administration, supervision and curriculum; and (4) successful completion of the administrative intern program.

The administrative intern program is sponsored by the College and the state Department of Education. To be admitted to the program, the candidate must have five years of teaching experience, hold the professional certificate and successfully pass annual examinations administered by the state Department of Education. Interested candidates should confer with the chairman of the department of educational administration.

Certification in School Psychology. There are two levels in the school psychology program—the certificate level and the doctoral level. The certificate program is a 48–60 semester-credit program of professional and academic courses. The M.Ed. degree in psychology is included as part of the certification

requirement. Students who complete the certificate program will be recommended for school psychology credentials in Hawaii and other states. The doctoral level program is designed to prepare supervisors, college instructors and researchers in the field. Program advisements are available for qualified graduate students in the department of educational psychology.

Classified Professional Teacher's Certificate Program (CPC). The professional teacher's certificate for teaching in the public elementary and secondary schools of Hawaii is granted by the state Department of Education. The state Department of Education's requirements for this certification include the following:

1. A minimum of 30 semester hours of collegiate credit subsequent to the bachelor's degree;
2. a minimum of 24 semester hours of credit in professional education (which may be a part of the 30-credit requirement above), at least 6 credits of which must be in courses designed primarily for graduate students;
3. satisfactory completion of student teaching at the level and/or in the teaching field specified by the certificate requested;
4. completion of the subject requirements of one of the teaching fields (secondary certification only).

The College provides a one-year program (usually more time is needed to make up deficiencies) for non-education baccalaureates to fulfill requirements for this certificate.

In addition to the requirements for admission to the College of Education, applicants for the Classified Professional Certificate program are required:

1. To have a non-education bachelor's degree from an accredited institution;
2. to take refresher courses in the teaching field for those credits earned more than ten years prior to admission, as deemed necessary by admissions personnel of the College;
3. to make up deficiencies in the academic or teaching field major of the five-year program; and in the case of elementary education candidates, the addition of work in the distributive major;
4. to submit recommendations from former employers and/or college advisers, teachers or administrators.

School Counseling Certificate Program. The counseling and guidance program is designed for students who wish to develop competency in counseling and guidance in the schools, and to meet certification requirements in Hawaii or other states. The Master of Education degree may be completed as part of the requirements for the professional level certificate. Individuals who complete the counseling and guidance program satisfactorily are recommended for the counselor certification. Those interested should confer with the counselor-educator in the department of educational psychology.

Teaching the Mentally Retarded Certificate Program. The College offers a one-year graduate program for elementary and secondary education majors leading to recommendation for certification as a teacher of the mentally retarded. Graduates with a degree in an area other than education may also receive recommendation for certification to teach mentally retarded children upon completion of a one-year program. Courses taken for certification may be counted toward a master's degree in educational psychology with emphasis in special education. Interested students should confer with the instructors in special education in the department of educational psychology.

Fellowship support is available for students in the area of mental retardation.

Teaching the Emotionally Disturbed Certificate Program. The University in cooperation with the state Department of Education is currently developing certification requirements in the area of the emotionally disturbed. See course offerings in this area.

Fellowship support is available for students in the area of the emotionally disturbed.

Teaching the Culturally Disadvantaged Certificate Program. The University of Hawaii in cooperation with the state Department of Education is currently developing certification requirements in the area of the culturally disadvantaged. The Hawaii Teacher Corps, a federally financed two-year graduate program, prepares teachers to teach the disadvantaged children and youth. No new enrollees are anticipated before the summer of 1969. For further information concerning this program, contact the director of Hawaii Teacher Corps.

EDUCATION COURSES

See pp. 4-5 for a discussion of course descriptions.

Curriculum and Instruction (Ed CI)

Professors R. ALM, GRONEMAN, IN, MARTIN, NELSON, PORTER, POYZER; Associate Professors CAMPBELL, CARR, FULTZ, GILLESPIE, HAYES, IHARA, INN, JENKINS, MORRIS, PICKENS, WHITMAN; Assistant Professors J. ALM, BRAUN, MOORE, PICARD, REDDIN, THOMPSON, TOMINAGA, UEHARA

The following courses have as prerequisite enrollment in the College of Education as classified student or permission of the department chairman: 319-335. 337-339, 342-346, 348, 349.

312 (341) FOUNDATIONS IN CURRICULUM AND INSTRUCTION

(3) I, II

Braun, Fultz, Inn, Jenkins, Martin, Reddin

Study of objectives and organization of school's curriculum; discussion of principles and practices; roles of the teacher in the school. Sections: early childhood education, elementary education, secondary education. Pre: Ed EF 310 and Ed EP 311.

319 CHILDREN'S LITERATURE (2) I, II

Gillespie, Jenkins

Acquaintance with wide range of children's books; criteria for judging literature on basis of needs and interests. Pre: 312 or concurrent registration.

320 LANGUAGE ARTS, ELEMENTARY (2) I, II

Gillespie, Jenkins, Reddin

Modern approach to teaching of language arts—reading, oral, written expression. Pre: 312 or concurrent registration.

321 READING, ELEMENTARY (2) I, II

Braun, Gillespie, Uehara

Survey of reading process: development of reading readiness, word recognition, comprehension, reading rate, vocabulary, reading interests, reading in content areas. Selection and use of reading materials, evaluation and appraisal of reading progress.

322 SOCIAL STUDIES, ELEMENTARY (2) I, II

Inn

Major purposes: to point out special contributions of social studies to elementary curriculum; to aid students in developing sound instructional programs and procedures in elementary social studies. Pre: 312 or concurrent registration.

323 SCIENCE, ELEMENTARY (2) I, II

Carr

Science education in elementary school; methods and materials; laboratory activities selected from new science curricula. Pre: 312 or concurrent registration.

324 MATHEMATICS, ELEMENTARY (2) I, II

Picard

Purposes, procedures, scope, organization in developing underlying concepts of elementary mathematics; analysis of new elementary mathematics programs; techniques, relative merits, roles of inductive and deductive approaches to new ideas. Pre: 312 or concurrent registration; Math 111.

326 CREATIVE ART, ELEMENTARY (2) I, II

Pickens

Understanding scope and importance of art in elementary school curriculum, creative use of art media through laboratory experiences. Pre: 312 or concurrent registration; Art 101.

329 CREATIVE EXPRESSION IN ELEMENTARY EDUCATION (3) I

Hayes

Development of communication skills through creative dramatics, rhythmic movement, related arts. Pre: 312 or concurrent registration, or consent of instructor.

330 LANGUAGE ARTS, SECONDARY (3) I, II

J. Alm

Teaching of speaking, reading, writing, listening in secondary school; literature, grammar, usage, spelling. Pre: 312 or concurrent registration.

- 331 TEACHING OF READING IN INTERMEDIATE AND HIGH SCHOOL (2) I, II** J. Alm
Techniques and materials for teaching reading and improving reading skills in intermediate and high school. Pre: 312 or concurrent registration.
- 332 SOCIAL STUDIES, SECONDARY (3) I, II** Fultz
Scope and organization of social studies in secondary school; development of social knowledge and understanding. Pre: 312 or concurrent registration.
- 333 SCIENCE, SECONDARY (3) I, II** Campbell
Purposes and procedures; development of scientific attitude; review of major generalizations of biological and physical sciences. Pre: 312 or concurrent registration; basic courses in physics, chemistry, biology.
- 334 MATHEMATICS, SECONDARY (3) I, II** Whitman
Purposes and procedures; development of basic mathematical concepts. Pre: 312 or concurrent registration; Math 311, 351.
- 335 FOREIGN LANGUAGES, SECONDARY (3) I, II** Moore
Techniques and materials; aims, motivation, tests; infusion of cultures; use of instructional aids. Pre: 312 or concurrent registration.
- 336 ART, SECONDARY (3) I, II** Pickens
Purposes and procedures; the arts in relation to all school subjects. Pre: 312 or concurrent registration; consent of instructor.
- 337 SCHOOL MUSIC, SECONDARY (3) I, II** Staff
Objectives, materials, procedures of general, instrumental, choral music in secondary school. Pre: 312 or concurrent registration.
- 339 SPEECH AND DRAMATICS, SECONDARY (3) I, II** Ellingsworth
Techniques for teaching types of speech and play analysis and direction; production and management problems. Pre: 312 or concurrent registration.
- 342 MATHEMATICS IN THE JUNIOR HIGH SCHOOL (2) I** Staff
Arithmetic beyond fundamental processes; "general mathematics" courses; arithmetic in other courses. Pre: 312 or concurrent registration.
- 343 PHYSICAL EDUCATION, SECONDARY (3) I, II** Thompson
Methods and materials in conduct of physical activities program; techniques in leadership; selection of activities and program evaluation. Pre: 312 or concurrent registration.
- 345 LITERATURE FOR ADOLESCENTS (2) I** J. Alm
Literature for secondary school level; helping students appreciate significance and meaning of literature; materials suitable for varying levels of ability and interests.
- 346 METHODS OF INSTRUCTION, INDUSTRIAL EDUCATION (3) I**
Techniques of individual and group instruction in laboratory and related classes; evaluation of various methods. Pre: 312 or concurrent registration.
- 347 ORGANIZATION AND MANAGEMENT OF INDUSTRIAL EDUCATION (2) II**
Organization of instruction; handling supplies; maintaining equipment and tools; purchasing materials; keeping records; making inventories. Pre: 312 or concurrent registration.
- 348 TYPEWRITING AND SHORTHAND (2) I** Staff
Theory and methods of teaching typewriting and shorthand. Pre: 312 or concurrent registration; courses in advanced typewriting; intermediate shorthand.
- 349 BOOKKEEPING AND OFFICE PRACTICE (2) II** Staff
Teaching bookkeeping, office practice and other subjects in secondary school business education curriculum. Pre: 312 or concurrent registration; course in business and secretarial machines; Acc 201-202.

- 390 STUDENT TEACHING (12) I, II** Staff
Supervised experience in public schools. Follows public school calendar. Sections: (1) elementary education, (2) secondary education. Pre: requirements for registration listed under "Student Teaching."
- 395 SENIOR HONORS THESIS**
- 399 DIRECTED READING (arr.) I, II** Staff
Individual reading or research. Limited to senior majors with 2.7 grade-point ratio, or 3.0 grade-point ratio in education. Pre: consent of instructor and department chairman.
- 439 THE BUSINESS EDUCATION CURRICULUM (3) I, II** Morris
Study of philosophy, principles, development of business education in secondary schools. Pre: 348 or 349 or consent of instructor.
- 520 SUPERVISION OF STUDENT TEACHING (3) I** Staff
Principles and methods; role of supervisor; human relations in supervision of student teaching. Pre: teaching experience; consent of instructor.
- 540 PRACTICUM IN CURRICULUM DEVELOPMENT (2) I, II** Staff
Designed for teachers-in-service to upgrade subject matter and develop new teaching methods and materials for instruction in courses of study K-12 in: (1) art, (2) business, (3) English, (4) foreign language, (5) health and physical, (6) home economics, (7) industrial, (8) mathematics, (9) science, (10) social studies, (11) speech, (12) reading. Development of curriculum materials and methods by participating teachers. Pre: related undergraduate methods course; teaching experience. Field of study must be designated at registration.
- 619 CHILDREN'S LITERATURE IN THE ELEMENTARY CURRICULUM (3) I, II** Gillespie, Reddin
Examination in depth of traditional and modern literature for children, with emphasis upon genre, historical development, research, curriculum development. Pre: 319.
- 620 TEACHING READING IN THE ELEMENTARY SCHOOL (3) I, II** Gillespie, Uehara
Developmental and psychological aspects of the reading process, studying current trends, research, techniques of evaluation. Pre: 321.
- 621 MODERN LANGUAGE ARTS PROGRAM, ELEMENTARY (3) II** Hayes
Critical examination of educational procedures in teaching of language arts; current research including that related to language deprivation and linguistic science. Pre: 320 and teaching experience.
- 622 ELEMENTARY SCHOOL CURRICULUM (3) I, II** Braun, Inn, Jenkins
Theoretical foundations of curriculum development; curriculum research; critical examination of current practices in curriculum development for elementary school. Pre: 312 or equivalent; teaching experience.
- 623 THE ELEMENTARY SCIENCE CURRICULUM (3) I, II** Carr
Application of recent developments in science, curriculum construction and learning theory to elementary school. Science content and methodology stressed. Pre: 323 and teaching experience.
- 624 THE ELEMENTARY MATHEMATICS CURRICULUM (3) I** Braun, Picard
Analysis of research relating to teaching and learning arithmetic, applying research findings to classroom procedures. Appraisal of recent curricular trends and critical examination of assumptions underlying proposed changes. Pre: 324 and teaching experience.
- 625 THE ELEMENTARY SOCIAL STUDIES CURRICULUM (3) II** Inn
Examination and evaluation of social science content, societal values and research findings as basis for development and revision of social studies materials, texts, curriculum guides, methodology. Pre: 322 and teaching experience.
- 626 ART IN ELEMENTARY EDUCATION (3) II** Pickens
Principles of and problems in teaching art in elementary school; curriculum development and current approaches in art education; laboratory experiences in art media. Pre: 326; Art 101.

- 629 CURRICULUM DEVELOPMENT IN CREATIVE EXPRESSION (3) II** Hayes
Leadership training for teachers of creative dramatics, rhythmic movement, related arts. Pre: 329 or consent of instructor.
- 634 EXTRACLASS ACTIVITIES IN SECONDARY SCHOOLS (2) II** Staff
Exploring potential contribution and utilization of extraclass activities: homeroom, student council, athletics, intramurals, clubs, dramatics, publications, speech activities, assemblies, etc.
- 635 JUNIOR HIGH SCHOOL CURRICULUM (3) I** Fultz, Martin
Programs for intermediate school; relationship of teachers, administrators, parents; curriculum problems; evaluation. Pre: teaching experience.
- 636 SECONDARY SCHOOL CURRICULUM (3) I, II** Martin
Principles and techniques of curriculum improvement at secondary school level. Pre: teaching experience.
- 637 ART IN SECONDARY EDUCATION (3) I** Pickens
Principles of and problems in teaching art in secondary school; current approaches in teaching art. Pre: 336 and consent of instructor.
- 640 SEMINAR IN TEACHING FIELDS (3) I, II** Staff
Study of trends, research, and problems of implementation in special areas of teaching in secondary school: (1) business, (2) English, (3) foreign language, (4) health and physical, (5) home economics, (6) industrial, (7) mathematics, (8) reading, (9) science, (10) social studies, (11) speech. Pre: undergraduate special methods course in appropriate teaching field; teaching experience. Field of study must be designated at registration. Pre: consent of instructor.
- 643 PUBLIC SCHOOL CURRICULUM FOR PHYSICAL EDUCATION (3) I, II** Little
Detailed examination of contents of adequate curriculum for physical education in public schools, K-12. Pre: 343, 636, HPE 203, or consent of instructor. (Identical with HPE 643.)
- 657 (537) COMMUNITY COLLEGE (3) II** Staff
Development of two-year comprehensive community college in U. S.; its emerging role in higher education. Functions, organization, curricular structure, achievement in relation to objectives, and crucial issues examined. Pre: consent of instructor. (Identical with Ed EF 657.)
- 667 CURRICULUM TRENDS IN EARLY CHILDHOOD EDUCATION (3) I** Reddin
Study of current issues in nursery, kindergarten, early elementary education, with emphasis on research and theory basic to curriculum development and program planning. Pre: 312 or equivalent; teaching experience.
- 699 DIRECTED READING AND/OR RESEARCH (arr.) I, II** Staff
Individual reading and/or research. Pre: consent of instructor and department chairman.
- 722 SEMINAR IN ELEMENTARY CURRICULUM FOUNDATIONS (3) II** Inn, Jenkins
Advanced study in development and improvement of curriculum of elementary schools. Pre: 622; consent of instructor. May be repeated once for credit.
- 733 SEMINAR IN CURRICULUM, SECONDARY (3) I, II** Inn, Martin
Advanced study in development and improvement of curriculum of secondary schools. Required for Plan B M.Ed. candidates in their final semester or summer session. Pre: 636; consent of instructor. May be repeated once for credit.
- 737 FOUNDATIONS IN ART EDUCATION (3) II** Pickens
Advanced study in development and growth of art in secondary education. Pre: 336; consent of instructor; Phil 500 desirable.

Industrial Education (IE)

- 101 WOOD FABRICATION AND TECHNOLOGY (3) I**
Fundamental operations and technology of wood fabrication. Design and fabrication of projects.
- 102 METAL FABRICATION AND TECHNOLOGY (3) I**
Fundamental operations in metal fabrication. Projects in benchmetal, sheetmetal, tempering, machining.
- 107 BASIC DRAFTING AND DESIGN FOR INDUSTRIAL EDUCATION (3) I**
Drafting and design as language of industry; basic drafting and design principles and techniques, perspective, orthographic isometric, development problems; contemporary design applied to fabrication.
- 108 DRAFTING AND DESIGN FOR INDUSTRIAL EDUCATION (3) II**
Continuation of 107. Machine and assembly drafting; auxiliary views and sectioning, architectural and technical illustration.
- 201 ELECTRICITY (3) I**
Series and parallel circuits, magnetism, electromagnetism, measuring instruments, generator and motor principles.
- 202 ELECTRICITY (3) II**
Circuits, coils, motors, generators, transformers; inductance; conduit wiring; radio.
- 206 POWER MECHANICS (3) I**
Basic power units: internal combustion engines. Experience with hand tools in repair of two- and four-cycle engines.
- 300 INDUSTRIAL CRAFTS—JEWELRY AND LAPIDARY PROCESSES (2) I**
Design, processes and materials of jewelry making; lapidary processes and materials for polishing semi-precious gemstones; black coral polishing and mounting.
- 301 INDUSTRIAL CRAFTS—LEATHER (2) II**
Design and fabrication of leather products. Materials and processes taught through creative projects and problems.
- 302 INDUSTRIAL CRAFTS—PLASTICS AND WOOD SCULPTURE (3) II**
Design and fabrication of plastic projects; materials and processes of metal enameling; other industrial crafts native to Hawaii.
- 303 ADVANCED WOOD FABRICATION AND TECHNOLOGY (3) I**
Nomenclature, setup and operation of power equipment. Design, patterns, jigs, templates; production procedures.
- 304 ADVANCED METAL FABRICATION AND TECHNOLOGY (3) II**
Organization, layout, equipment, management, uses of instructional material. Selected projects in benchmetal, forging, heat-treating, machine shop, oxyacetylene welding, cutting.
- 307 ADVANCED DRAFTING AND DESIGN (3) II**
Drafting and design principles in fabrication of industrial products; problems of wood, metal, other materials; architectural drafting. Application to instruction.
- 309 THE GRAPHIC ARTS (3) II**
Survey course for industrial education majors and others desiring experiences in printing and allied industrial processes. Job press, multilithography, photography as applied to printing, related technical and production processes.
- 348 INDUSTRIAL ARTS FOR ELEMENTARY TEACHERS (2) II**
Hand and simple machine tool instruction taught through selected elementary education projects and units.
- 401 PROBLEMS IN INDUSTRIAL EDUCATION (arr.) I**
Program arranged for specialization in several technical areas. May be repeated for total of 5 credits.

- 402 IMPROVEMENT OF INSTRUCTION, INDUSTRIAL EDUCATION (arr.) II** Poyzer
Consideration of problems in teaching industrial education. May be repeated for total of 5 credits.
- 764 SEMINAR IN INDUSTRIAL EDUCATION (2) II** Poyzer
Individual study of special problems. May be repeated once for credit.

Educational Administration (Ed EA)

Professors CROSSLEY, EVERLY, JACKSON; Associate Professors INGILS, JOHNSON

- 600 THEORY OF ADMINISTRATION (3) I, II** Johnson
Critical review of key current and classic writings in theory and practice of administration; development of comprehensive, integrated understanding of nature of administration. Pre: consent of instructor. (Same as Interdisciplinary Studies 600.)
- 610 SCHOOL-COMMUNITY RELATIONS (3) I** Crossley
Application of principles, techniques, policies, organization of school-community information program. Pre: consent of instructor.
- 620 SCHOOL FINANCE (3) II** Staff
School revenues, apportionments, budgetary procedures, costs, business management. Pre: consent of instructor.
- 623 ADMINISTRATIVE PROBLEMS IN PHYSICAL EDUCATION (3) I, II** Chui
Current problems and recent trends in conduct of physical education programs in educational settings. For administrators, teachers, graduate students in physical education and related fields. Pre: HPE 423 or equivalent and consent of instructor. (Identical with HPE 623.)
- 630 SCHOOL LAW (3) I** Jackson
Functions, relationships, responsibilities of school districts and school personnel with interpretations of legal status as shown by constitutions, statutes, court decisions. Pre: consent of instructor.
- 650 SCHOOL PERSONNEL PRACTICES (3) I, II** Staff
Recent theory and practices with emphasis on philosophy and democratic aims, principles, models and research in human relations, leadership, group processes taken from anthropology, psychology, sociology, educational administration.
- 660 SCHOOL PLANT (3) I** Ingils
Problems and techniques in school plant planning, operation, maintenance; working with other agencies and with classified personnel. Pre: consent of instructor.
- 670 SCHOOL SUPERVISION (3) I** Ingils
Principles of supervision and development of supervisory programs. Pre: consent of instructor.
- 680 SCHOOL ORGANIZATION (3) I, II** Johnson
Function of teacher in school administration; state organization of public education; Hawaii school law and state Department of Education regulations. Pre: teaching experience (may include student teaching) or consent of instructor.
- 685 EDUCATIONAL ADMINISTRATION: THEORY AND PRINCIPLES (3) I, II** Johnson
Theory and principles of administration. Required for M.Ed. Pre: consent of instructor.
- 699 DIRECTED READING AND/OR RESEARCH (arr.) I, II** Staff
Individual reading and/or research. Pre: consent of instructor and department chairman.

- 700 RESEARCH SEMINAR IN EDUCATIONAL ADMINISTRATION (3) I, II** Jackson
Basic concepts of research in educational administration. Study and discussion of significant topics and problems; preparation and reporting of scholarly paper. Required of Plan B M.Ed. candidates. Pre: consent of instructor.
- 720 SEMINAR AND INTERNSHIP IN ADMINISTRATIVE LEADERSHIP (arr.) I, II** Staff
School administrator as curriculum and personnel leader in school organization; techniques of administrative control; strategies in leadership functions. Intern experience in schools. Pre: admission to state Department of Education Administrative Intern Program, admission to East-West Center program, or consent of instructor.
- 770 SEMINAR IN SCHOOL SUPERVIS'ON (3) II** Crossley
Application of methods and tools of supervision; faculty meetings; classroom observation; conferences; evaluation. Pre: 670, teaching experience, or consent of instructor. May be repeated.
- 780 SEMINAR IN EDUCATIONAL ADMINISTRATION (3) I, II** Staff
Analysis of selected problems in school administration. (1) Elementary, (2) intermediate, (3) secondary, (4) adult, (5) technical and vocational, (6) community college, (7) higher education. Pre: 670, 680, 685, or consent of instructor. May be repeated.

Educational Communications (Ed EC)

Professor WITTICH; Associate Professors MCBEATH, REED, SANDERSON; Assistant Professors KUCERA, MENDELSON; Instructors WILEY, YOSHISHIGE

314, its equivalent, or consent of department chairman is prerequisite to all other courses.

- 314 AUDIO-VISUAL TECHNIQUES (2) I, II** Wiley, Yoshishige
Nature and use of educational media as they relate to pupil needs in classroom learning situations. Identification, use and evaluation of audio-visual instructional materials; application of known principles in educational media in classroom communications.
- 399 DIRECTED READING (arr.) I, II** Staff
Individual reading or research. Limited to senior majors with 2.7 grade-point ratio, or 3.0 grade-point ratio in education. Pre: consent of instructor and department chairman.
- 599 WORKSHOP IN EDUCATIONAL MEDIA (1) I, II** Sanderson
Concentrated study and practical experience in utilization of educational media through 8 hours of lecture-demonstrations and 8 laboratory hours for each 1-credit sequence. May be repeated through workshops covering different media up to maximum of 3 credits.
- 614 AUDIO-VISUAL MEDIA SYSTEMS (3) I, II** Wittich
Study of educational communications principles and their practical relationship to new educational media; techniques for design and utilization of combinations of media, both projected and non-projected, audio and visual, leading toward achievement of instructional goals; investigation of new teaching strategies: systems analysis, self-instructional, interrelated techniques. Pre: 314 or equivalent.
- 620 INTRODUCTION TO INSTRUCTIONAL MATERIALS PRODUCTION (3) I, II** Mendelson
Preparation of two- and three-dimensional instructional materials, charts, graphs, learning displays, television graphics, pictures, slides, overhead transparencies, manipulative tactile materials, audio recordings.
- 623 SURVEY AND PRODUCTION OF ASIAN STUDY MATERIALS (3) II** Mendelson
Selection, evaluation and use of instructional materials available to teachers of secondary school Asian studies subjects. Adapting existing materials or creating new materials: maps and models, audio recordings, flat pictures, slide sets, projectuals, filmstrips, realia and films.

625 PRODUCTION OF EDUCATIONAL FILM AND MULTIMEDIA PRESENTATIONS (3) II**Mendelson**

Planning and producing educational still and motion pictures and multimedia learning experiences; communication and aesthetic theories as related to planning and production. Emphasis on meeting curriculum goals through systematic development of film and multimedia presentations.

630 TELEVISION IN EDUCATION (3) I, II**Kucera, Reed**

Research backgrounds; development and utilization of television in education including fundamentals of television production and teaching with emphasis on utilization of television in school.

635 ADVANCED EDUCATIONAL TELEVISION (3) II**Kucera, Reed**

Research and study of educational development and utilization of instructional television with emphasis on ETV and systems approach to multi-media instruction in specific learning situations. Pre: 630, its equivalent, or consent of instructor.

640 PROGRAMMED LEARNING (3) II**McBeath**

Learning theory, experimental procedures and related systems and readings in study and development of programmed learning. Evaluation, selection and utilization of programs in classroom. Pre: Ed EP 672 or consent of instructor. (Identical with Ed EP 640.)

699 DIRECTED READING AND/OR RESEARCH (arr.) I, II**Staff**

Individual reading and/or research. Pre: consent of instructor and department chairman.

700 SEMINAR IN EDUCATIONAL MEDIA RESEARCH (3) I, II**Kucera, Mendelson, Wittich**

Review of general and current audio-visual research. Applications of same to problems in improvement of instruction.

710 SEMINAR IN ORGANIZATION AND ADMINISTRATION OF MEDIA PROGRAMS (3) II**Kucera, Mendelson, Wittich**

Current principles and practices in organization and administration of programs utilizing new learning media: audio-visual, automated learning, educational television, facilities for such purposes.

Educational Foundations (Ed EF)

Professors AMIOKA, ANDERSON, AUSTIN; Associate Professors BOYER, KEPPEL, POTTER, STUEBER; Assistant Professors KOBAYASHI, RUST, WALSH

310 (320) FOUNDATIONS OF AMERICAN EDUCATION (3) I, II**Staff**

Contemporary educational theory and practice as related to major historical, philosophical and social factors in American culture.

360 FUNDAMENTAL IDEAS IN EDUCATION (2) I**Stueber**

Examination of basic ideas influencing modern education; sociological, psychological and philosophical considerations. For juniors in Honors Program.

394-395 SENIOR HONORS THESIS (2-2) Yr.**Stueber**

For seniors in Honors Program.

399 DIRECTED READING (arr.) I, II**Staff**

Individual reading or research. Limited to senior majors with 2.7 grade-point ratio, or 3.0 grade-point ratio in education. Pre: consent of instructor and department chairman.

409 CULTURALLY AND ECONOMICALLY DISADVANTAGED PUPIL (3) II**Chang**

Survey of social and psychological factors related to the culturally and economically disadvantaged pupil and his education. Review of local resources and facilities to assist these pupils. Pre: consent of instructor. (Identical with Ed EP 409.)

- 445 EDUCATIONAL SOCIOLOGY (3) I, II** **Staff**
Examination of development of theoretical and practical aspects of social structure and their relationship to education. Pre: 310 or 3 hrs. of sociology; consent of instructor.
- 480 (570) ANTHROPOLOGICAL APPLICATIONS (3) II** **Staff**
Education as means of transmitting culture. Socialization in non-literate societies; universal aspects of process. Cross-cultural education. (Identical with Anth 480.)
- 650 HISTORICAL FOUNDATIONS OF WESTERN EDUCATION (3) I, II** **Keppel, Rust, Stueber**
History of European thought and practice as basis for study of modern education.
- 651 HISTORY OF AMERICAN EDUCATION (3) I, II** **Keppel, Rust, Stueber**
Introduction to history of American educational thought from 17th century to present.
- 657 (537) COMMUNITY COLLEGE (3) II** **Staff**
Development of two-year comprehensive community college in U.S.; its emerging role in higher education. Functions, organization, curricular structure, achievement in relation to objectives, crucial issues. Pre: consent of instructor. (Identical with Ed CI 657.)
- 660 PHILOSOPHY OF EDUCATION (3) I, II** **Amioka, Austin, Boyer, Kobayashi, Stueber**
Philosophical considerations essential to theories of education. Pre: student teaching.
- 670 COMPARATIVE EDUCATION: EUROPE AND AMERICA (3)** **Rust, Walsh**
Comparison of ways in which contemporary Western societies undertake to meet their educational problems.
- 671 COMPARATIVE EDUCATION: ASIA (3) I** **Anderson, Kobayashi**
Educational institutions, practices and problems in Asian countries, viewed against backdrop of their traditional cultures.
- 681 THE CHURCH AND THE SCHOOL (2)** **Staff**
Church, state and school relationships in U.S., Canada, Latin America and Europe. Pre: 660.
- 683 SOCIAL FOUNDATIONS OF EDUCATION (3) I, II** **Boyer, Keppel, Rust, Walsh**
Impact on education of major social trends and forces operating in American society; social change and education. Pre: consent of instructor.
- 685 EDUCATION IN AMERICA (3) I** **Kobayashi, Rust, Walsh**
Comprehensive overview of American educational scene from nursery schools to graduate and professional schools, public and private; problems of support, organization, curriculum, methods, teacher preparation. Open to Asian and T.I.P. students only.
- 699 DIRECTED READING AND/OR RESEARCH (arr.) I, II** **Staff**
Individual reading and/or research. Pre: consent of instructor and department chairman.
- 751 RECENT HISTORY OF AMERICAN EDUCATION (3) II** **Keppel, Stueber**
19th- and 20th-century history of American educational thought and practice. Pre: 650 or 651.
- 757 EDUCATIONAL CLASSICS (2) II** **Amioka, Austin, Keppel, Kobayashi, Stueber**
Intensive study of English translations of major contributions to Western educational thought from Plato to Dewey. Pre: 650.
- 761 HISTORY OF AMERICAN HIGHER EDUCATION (3) I, II** **Keppel**
Genesis and evolution of college and university from colonial America to present. Pre: 651 or 6 hrs. in U.S. history; consent of instructor.
- 763 SEMINAR IN EDUCATIONAL THEORY (2) I, II** **Staff**
Focus selected from among the following: (1) educational issues; (2) John Dewey; (3) contemporary educational philosophers; (4) Japanese educational philosophy; (5) history of education. Pre: 660. May be repeated.

- 765 COMPARATIVE IDEOLOGIES AND EDUCATION (3) I** **Boyer**
 Critical analyses of contemporary ideologies and social philosophies with particular reference to implications for educational policies and practices. Pre: 650, 651, or 660.
- 768 SEMINAR IN PROBLEMS IN EDUCATION (2) II** **Staff**
 Study and discussion of significant topics and problems. For Plan B M.Ed. candidates in final semester or summer session. Pre: EP 708.
- 770 SEMINAR IN COMPARATIVE EDUCATION (2) II** **Anderson, Kobayashi, Rust, Walsh**
 Focus selected from among the following: (1) East Asia; (2) South Asia; (3) Southeast Asia; (4) Latin America; (5) Africa; (6) USSR and Eastern Europe; (7) Western Europe; (8) British Commonwealth. Pre: 670 or 671. May be repeated.

Educational Psychology (Ed EP)

Professors ADKINS, R. ALM, BEYERS, CLARK, COLLINS, FULLMER, LETON, RYANS, STAATS; Associate Professors CARSE, CHANG, FUJITA, HAEHNLEN, JACKSON, T. MCINTOSH, NIYEKAWA-HOWARD, REID; Assistant Professors BALLIF, BHUSHAN, DUNN-RANKIN, KENNEDY, D. MCINTOSH, WESTCOTT; Instructor KAGAN

311 and 416 or their equivalents are prerequisites for all graduate courses in Educational Psychology.

- 311 (372) PSYCHOLOGICAL FOUNDATIONS (3) I, II** **T. McIntosh**
 Principles of learning and individual differences; relationships of these factors to classroom experience. Pre: Psy 100.
- 315 ARTS AND CRAFTS FOR MENTALLY RETARDED (2) II** **Pickens**
 Construction and use of learning aids for mentally retarded children. May be taken concurrently with 406 with consent of instructor.
- 399 DIRECTED READING (arr.) I, II** **Staff**
 Individual reading or research. Limited to senior majors with 2.7 grade-point ratio, or 3.0 grade-point ratio in education. Pre: consent of instructor and department chairman.
- 404 EDUCATION OF EXCEPTIONAL CHILDREN (3) I** **D. McIntosh**
 Survey of characteristics of children who deviate from average in mental, sensory, physical, social attributes; reviews adaptations made by schools to abilities and disabilities of exceptional children.
- 405 THE MENTALLY RETARDED (3) I** **D. McIntosh**
 Review of psychological, social, vocational problems related to mentally retarded children and their families.
- 406 CURRICULUM DEVELOPMENT FOR MENTALLY RETARDED CHILDREN (3) I** **Kagan**
 Study of curriculum and materials used in education of mentally retarded children. Pre: 405.
- 408 THE EMOTIONALLY DISTURBED CHILD (3) I** **Jackson**
 Study of behavioral characteristics, methods of identification and management of emotionally disturbed children in regular and special classes in public schools, private day schools, clinics, residential schools, hospitals.
- 409 CULTURALLY AND ECONOMICALLY DISADVANTAGED PUPIL (3) II** **Chang**
 Survey of social and psychological factors related to culturally and economically disadvantaged pupil and his education. Review of local resources and facilities to assist these pupils. Pre: consent of instructor. (Identical with Ed EF 409.)
- 410 CURRICULUM DEVELOPMENT FOR THE EMOTIONALLY DISTURBED (3) I** **Kagan**
 Study of teaching methods and materials, techniques of curriculum development, methods of classroom organization and management used in education of emotionally disturbed children. Pre: 408.

- 414 EDUCATION OF GIFTED CHILDREN (3) II** **Staff**
 Characteristics and educational provisions for gifted children. Pre: 404.
- 416 TESTS AND MEASUREMENTS (3) I, II** **Adkins**
 Theory and techniques of measurement and evaluation in education, including supervised experience in instrument development and analysis.
- 429 INTRODUCTORY STATISTICS (3) I** **Bhushan**
 Introduction to statistical methods, with laboratory applications to educational and psychological data, especially scores on educational measurement devices and other indices of learning or behavioral change. Pre: one year of high school algebra or one college course in mathematics; consent of instructor; 311 and 416 desirable.
- 450 PRACTICUM EXPERIENCE WITH THE MENTALLY RETARDED (9) II** **Staff**
 Observation and supervised student teaching with mentally retarded children at elementary and secondary levels. Includes 2-hour seminar each week. Pre: 405 and 406.
- 451 PRACTICUM FOR TEACHERS OF EMOTIONALLY DISTURBED CHILDREN (9) II** **Jackson**
 Classroom and clinical experiences to prepare teachers for work with children whose learning problems are associated with behavioral disorders. Pre: 408 or concurrent registration.
- 508 SCHOOL PROJECT DESIGN AND EVALUATION (3) I, II** **Dunn-Rankin**
 Fundamental design and evaluation procedures for school programs.
- 601 GUIDANCE IN THE SCHOOL (3) I, II** **Fullmer**
 Basic principles of guidance; consideration of techniques, organization, materials, resources.
- 602 ELEMENTARY SCHOOL GUIDANCE (3) I** **Carso**
 Principles, techniques, organization of guidance services in elementary school.
- 603 REMEDIAL READING (3) II** **R. Alm**
 Techniques for motivating and helping children whose reading skills are below capacity and needs. Pre: course in teaching of reading or consent of instructor.
- 604 OCCUPATIONAL INFORMATION IN GUIDANCE (3) I** **Staff**
 Occupational research and survey techniques; trends, sources of materials, use of occupational information in vocational guidance. Pre: 601.
- 605 PROBLEMS OF SCHOOL ADJUSTMENT (3) I** **Kennedy**
 Principles of behavior affecting human relationships in school, with emphasis upon application to actual situations.
- 606 STUDENT PERSONNEL SERVICES IN HIGHER EDUCATION (3) I** **Haehnen**
 Philosophy, history, organization and administration of student personnel services at college and university levels including admissions, housing, student activities, financial aids, placement, counseling, health services.
- 607 CLINICAL PROCEDURES IN READING (3) I, II** **R. Alm**
 Diagnosis and improvement of reading in elementary and secondary schools. Pre: course in teaching of reading; consent of instructor. May be repeated for credit.
- 609 TESTS AND INVENTORIES IN GUIDANCE (3) II** **Leton**
 Tests and inventories for measuring aptitudes, interests, modes of behavior. Pre: 416, 601.
- 615 (415) CLINICAL ASSESSMENT OF EXCEPTIONAL CHILDREN (3) I** **Staff**
 Diagnostic instruments used in clinical appraisal of exceptional children. Theoretical considerations will buttress field appraisal experience. Pre: 404, 416 and 429.
- 616 SEMINAR IN THE EDUCATION OF EXCEPTIONAL CHILDREN (3) II** **Staff**
 Study of issues, research and program development in the following areas of special education: (1) mentally retarded, (2) emotionally disturbed, (3) learning disabilities. Pre: 9 credits from 404, 405, 406, 408, 409, 410, 615.

- 629 EDUCATIONAL STATISTICS (3) I, II** **Dunn-Rankin**
 Statistical inference including applications of parametric and non-parametric methods to educational problems. Pre: 429 or equivalent.
- 640 PROGRAMMED LEARNING (3) II** **Reid**
 Learning theory, experimental procedures and related systems, readings in study and development of programmed learning. Evaluation, selection, utilization of programs in classroom. Pre: 672 or consent of instructor. (Identical with Ed EC 640.)
- 655 LEARNING, LANGUAGE, AND INTELLECTUAL FUNCTION (3) II**
 Theory, research and method in study of language acquisition; function of language in intellectual activities; application to cognitive behavior modification. Pre: Psych 430. (Identical with Psychology 655.)
- 672 ADVANCED EDUCATIONAL PSYCHOLOGY: LEARNING (3) I, II** **Staats**
 Application of experimental evidence in learning upon major educational problems; analysis of research methods in classroom learning. Pre: consent of instructor.
- 673 ADVANCED EDUCATIONAL PSYCHOLOGY: PSYCHO-SOCIAL DEVELOPMENT (3) I** **Niyekawa-Howard**
 Research methods and findings involving classroom group structures, attitude and personality development, psycholinguistic behavior. Pre: consent of instructor.
- 685 CHILD LEARNING LABORATORY (3) I** **Staats**
 Application of learning theory and procedures to individual and group work with children in controlled studies; basic to behavior modification procedures in clinical and educational psychology. Pre: consent of instructor. (Identical with Psy 685.)
- 699 DIRECTED READING AND/OR RESEARCH (arr.) I, II** **Staff**
 Individual reading and/or research. Pre: consent of instructor and department chairman.
- 701 SEMINAR IN GUIDANCE (3) I, II** **Staff**
 Current issues and problems. (1) School psychology, (2) testing, (3) counseling, (4) vocational, (5) elementary school, (6) administration, (7) group procedures. Pre: 8 credits in guidance courses; consent of instructor. May be repeated for credit.
- 702 GROUP GUIDANCE (3) II** **Carse**
 Principles, practices, materials, techniques used in group guidance in schools. Pre: 601.
- 703 GUIDANCE PRACTICUM (3) I, II** **Carse**
 Supervised experience in guidance activities in schools. Guidance majors only. Pre: consent of instructor. May be repeated for credit.
- 708 EDUCATIONAL RESEARCH METHODS (3) I, II** **Leton**
 Research techniques and thesis development. Pre: 429 or equivalent; consent of instructor.
- 709 ADVANCED PROBLEMS OF EDUCATIONAL MEASUREMENT AND EVALUATION (3) II** **Reid**
 Theory of educational measurement and evaluation; analysis of educational tests and scales emphasizing statistical and psychological analysis of teacher-made and standardized tests and scales. Pre: 416, 429. (Identical with Psy 605.)
- 729 SCALING QUALITATIVE DATA (3) II** **Dunn-Rankin**
 Theory and construction of major types of scales with examples from education, psychology, sociology. Pre: 429 or equivalent. (Identical with Psy 604.)
- 768 SEMINAR IN EDUCATIONAL PSYCHOLOGY (3) I, II** **Staff**
 Current issues and problems. (1) General, (2) learning, (3) measurement, (4) research and statistics, (5) psycho-social development. Pre: consent of instructor. May be repeated for credit.

Health and Physical Education (HPE)

Professor SAAKE; Associate Professors CHUI, GUSTUSON, O'BRIEN, VAN DEGRIFT, VASCONCELLOS; Assistant Professors ASATO, CURTIS, LITTLE, SAKAMOTO, THOMPSON, TOMINAGA; Instructors FURUKAWA, KAINA, SEICHI

Medical Clearance Requirement: To register for the following courses, a student is required to present a medical clearance issued by Student Health Service: 101-163, 232-236, 333-337, 433, 434. Students without medical clearance will not be allowed to register in these courses.

- 101 PHYSICAL FITNESS (1) I, II** Gustuson, Thompson
Conditioning exercises and activities to develop and maintain physical efficiency. Motor fitness tests administered to measure status and progress. Separate sections for men and women.
- 103 SWIMMING: BEGINNING (1) I, II** Sakamoto
Adjusting to and immersing in water, floating, sculling; correct arm stroke, leg kick, breathing techniques and their coordination.
- 104 SWIMMING: INTERMEDIATE (1) I, II** Sakamoto, Seichi
Perfecting and integrating basic strokes with added emphasis on swimming for distance and speed.
- 105 SWIMMING: ADVANCED (1) II** Sakamoto
Correct techniques used in competitive swimming, racing starts, correct turning techniques, long distance swimming.
- 107 TENNIS: BEGINNING (1) I, II** Asato, Furukawa
Rules, etiquette, grip, forehand and backhand strokes, serving, volleying; singles and doubles play.
- 108 TENNIS: ADVANCED (1) II** Asato
Improving the serve, forehand and backhand strokes, volleying, chop shot, competitive strategy, problems in rules.
- 110 GOLF: BEGINNING (1) I, II** Vasconcellos
Rules, etiquette, grip, stance, drive, normal iron shots, approach shots, putting.
- 111 GOLF: ADVANCED (1) II** Seichi
Improving drive, fairway wood shots, long iron shots, control shots, trouble shots, putting, course management, competitive strategy, problems in rules. Green fees paid by students for play on courses.
- 115 BOWLING (1) I, II** Kaina
Rules, etiquette, arm swing, approach, execution, scoring, spare pickups. Students pay charge for use of alley.
- 120 BADMINTON (1) I, II** Staff
Rules, etiquette, grip, forehand and backhand strokes, serving, smash, drive, net play, offensive and defensive strategy; singles and doubles play.
- 123 FOLK AND NATIONAL DANCES (1) I** Staff
Popular dances of various national groups, including square dances.
- 124 DANCES OF HAWAII (1) I, II** Kaina
Background and fundamentals of hula. Selected dances with and without instruments.
- 126 RHYTHMIC ACTIVITIES (1) I, II** Staff
Social dances including ballroom dances, mixers, etc.
- 135 VOLLEYBALL (1) I, II** Thompson, Seichi
Rules, serving, passing, setting-up, spiking, blocking, offensive and defensive team play strategy. Separate sections for men and women.

- 137 BASKETBALL (1) I, II** **Thompson, Seichi**
 Rules, passing, shooting, dribbling, rebounding, individual defensive and offensive maneuvers, two- and three-man plays; team offense and defense. Separate sections for men and women.
- 151 ADAPTED AND PRESCRIBED EXERCISES (1) I, II** **Staff**
 Small group and individual guidance and instruction for students recommended by Student Health Service.
- 152 WEIGHT TRAINING (1) I, II** **Gustuson**
 Kinesiology of lifting and weight training, various types of exercises and methods of training with resistance.
- 154 TUMBLING AND REBOUND TUMBLING (1) I, II** **Gustuson**
 Single and combination stunts on tumbling mats and trampoline, balancing stunts; techniques of spotting; safety procedures.
- 156 HEAVY APPARATUS (1) II** **Gustuson**
 Single and combination stunts on side horse, horizontal bar, parallel bars, still rings; techniques of spotting; safety procedures.
- 160 JUDO (1) I** **Staff**
 Rules, etiquette, method of falling and breaking the fall, simple throws and their counters, simple holds and breaking of such holds, randori. (Student must provide own gi.)
- 161 AIKIDO (1) II** **Staff**
 Rules, etiquette, basic rolls, simple holds and the breaking of such holds, specific physical conditioning exercises. (Student must provide own gi.)
- 162 KARATE (1) II** **Staff**
 Rules, etiquette, basic stances, blocks, thrusts, kicks, ippon kumite, and selected kata. (Student must provide own gi.)
- 163 T'AI CHI CH'UAN (1) I, II** **Staff**
 Analytical and laboratory study of classic forms of T'ai Chi Ch'uan (advanced form of Kung Fu).
- 190 MODERN HEALTH: PERSONAL (1) I, II** **O'Brien, Staff**
 Mental-emotional health, family-living and scientific health information for personal hygienic living.
- 195 MODERN HEALTH: PERSONAL AND COMMUNITY (2) I** **Van Degrift**
 Primarily for majors in health education, physical education and recreation. Mental-emotional health, family-living and scientific health information for personal and community health.
- Courses numbered 201 and above are not open to lower division students.*
- 201 SCHOOL HEALTH PROBLEMS: ELEMENTARY (2) I, II** **O'Brien**
 Responsibilities of elementary school teacher in recognizing and meeting pupils' needs, emphasizing teacher's role in health instruction, health services, school health policies.
- 202 SCHOOL HEALTH PROBLEMS: SECONDARY (2) I, II** **Van Degrift**
 Responsibilities of secondary school teacher in recognizing and meeting pupils' needs, emphasizing health instruction, health services, healthful school living, school health policies.
- 203 INTRODUCTION TO PHYSICAL EDUCATION (2) I, II** **Tominaga**
 Aims and objectives of physical education; basic concepts of body in movement; physical education as academic discipline; relationship to related fields such as health education, recreation, athletics.
- 204 INTRODUCTION TO COACHING ATHLETICS (2) I, II** **Asato**
 Nature, responsibilities, personal and professional requirements of coach. Scientific principles applicable to coaching methodology and athletic competition.

- 208 INTRODUCTION TO RECREATION (2) I, II** **Saake**
Aims, objectives, foundations of recreation, emphasizing historical analysis of forces and influences affecting recreation and leisure in modern society. Recreation as professional field.
- 231 METHODS AND MATERIALS IN HEALTH EDUCATION (2) II** **O'Brien**
Organization and content, methods and materials for health teaching in elementary and secondary schools. Pre: 201 or 202.
- 232 SAFETY PROCEDURES AND FIRST AID (2) I, II** **Saake**
Preventive and emergency treatment of injuries, emphasizing school, playground, athletic situations. Practical work in first aid. Red Cross certificate may be earned.
- 233 PHYSICAL EDUCATION: ELEMENTARY (3) I, II** **Curtis, Staff**
Content and methods for physical education in elementary school, emphasizing selection, planning, teaching, evaluation of movement exploration and physical activities.
- 235 TEAM SPORTS FOR SECONDARY GIRLS (2) II** **Kaina**
Fundamental skills, rules, strategy of team sports for secondary school girls. Hockey, soccer, speedball, basketball, volleyball, softball.
- 236 TEAM SPORTS FOR SECONDARY BOYS (2) II** **Asato**
Fundamental skills, rules, strategy of team sports for secondary school boys. Touch football, soccer, basketball, volleyball, softball, water polo.
- 238 OUTDOOR RECREATION (2) II** **Staff**
Objectives and values of outdoor recreation; characteristics and determinants of program; planning, organization, leadership and facilities for recreational uses of natural environment.
- 241 HEALTH EDUCATION CURRICULUM (2) I** **O'Brien**
Objectives of school health program, emphasizing scope and sequence of health instruction; critical examination of health curriculum guides from various states. Pre: 201 or 202.
- 249 SOCIAL RECREATION (2) I** **Kaina**
Objectives and values of social recreation; social club organization; selections, planning, conduct and evaluation of social activities; characteristics and responsibilities of leadership. Pre: 208.
- 271 EVALUATION IN HEALTH EDUCATION (2) I** **Chui**
Processes involved in assessing school health education program with emphasis on measurement criteria and instruments, interpretation of data and content, organization and conduct of evaluation program. Pre: 201 or 202. (Alt. yrs; offered 1969-70.)
- 301 HEALTH OF THE SCHOOL CHILD (2) I** **Van Degrift**
Health problems of school child; role of school in meeting them, with emphasis on symptoms, causes, treatment. Pre: consent of instructor; 201 or 202 desirable.
- 302 SCHOOL'S ROLE IN COMMUNITY HEALTH (2) II** **Tominaga**
Functional interrelationships between school and other community health organizations in solving community health problems. Pre: consent of instructor; 201 or 202 desirable.
- 328 COMMUNITY RECREATION (2) I** **Saake**
Organized community recreation; recreation and government; recreation and social institutions; industrial recreation; commercial recreation interests; special groups. Pre: 208 desirable.
- 329 ORGANIZATION AND SUPERVISION OF RECREATION (2) II** **Saake**
Community organization, planning, personnel, areas and facilities, programs and services, finance and business procedures related to organized recreation. Pre: 208 and 328 desirable.

- 332 PRACTICUM IN MEDICAL SELF-HELP INSTRUCTOR TRAINING (2) I, II** Seichi, Staff
Practicum in training of persons to become qualified instructors of medical self-help knowledge and skills. Pre: consent of instructor.
- 333 COACHING OF FOOTBALL AND BASKETBALL (2) I** Saake, Vasconcellos
Fundamentals, position play, team play, strategy, rules, scouting, planning and conduct of practice, specific training problems. Pre: 204.
- 334 COACHING OF BASEBALL AND VOLLEYBALL (2) II** Saake, Seichi
Fundamentals, position play, team play, strategy, rules, scouting, planning and conduct of practice, specific training problems. Pre: 204.
- 335 COACHING OF TRACK AND FIELD (2) II** Vasconcellos
Techniques and rules of sprints, distance runs, relays, hurdles, long jump, high jump, pole vault, shot put, discus and javelin throws; conduct of track and field meets; specific conditioning and training problems. Pre: 204.
- 336 COACHING OF SWIMMING (2) II** Sakamoto
Techniques and rules of free-style, breast-stroke, back-stroke, butterfly-stroke, relay racing, starting, turning, diving; conduct of swimming meet; specific conditioning and training problems. Pre: 204.
- 337 COACHING OF INDIVIDUAL AND DUAL SPORTS (2) I** Seichi, Asato
Coaching and developing players for interscholastic teams in golf, tennis, bowling. Emphasis on rules, individual play under match conditions, dual or partnership strategy. Pre: 204.
- 338 FIELD WORK IN RECREATION: BASIC (arr.) I, II** Asato, Saake
Supervised leadership experience in recreational agencies. 1 hour per week in class discussion sessions. For recreation majors only. Pre: consent of recreation adviser. May be repeated once by consent of recreation adviser.
- 348 PROGRAMS IN RECREATION (2) I** Kaina
Factors in planning recreation programs; standard classification of recreation programs with critical analysis of nature, scope, materials, resources of each classification. Pre: 208 desirable.
- 399 DIRECTED READING (arr.) I, II** Chui, Staff
Individual problems. Limited to senior majors in health education, physical education or recreation with 2.7 overall grade-point ratio in major field.
- 401 CURRENT TRENDS IN HEALTH (3) II** O'Brien
Critical analysis of current problems and trends in basic health education areas which contribute to healthful living in community, home, school. Pre: 201 or 202; consent of instructor; 302 desirable.
- 423 ORGANIZATION AND SUPERVISION OF PHYSICAL EDUCATION (3) II** Asato, Staff
Organization and supervision of physical education instructional, intramural, varsity athletic programs with emphasis on program content, policy and legal aspects, budget and finance, personnel, facilities and equipment, public relations, special problems. Pre: 203 and 233 desirable.
- 433 MUSIC AND RHYTHMS IN PHYSICAL EDUCATION (2) I, II** Kaina
Use of music in physical education program, emphasizing selection of appropriate music for specific activities as expressive or creative movement, movement exploration, rhythmic gymnastics, dancing. Pre: consent of instructor; Mus 117 and 118 desirable.
- 434 TECHNIQUES OF OFFICIATING IN ATHLETICS (2) I** Thompson, Seichi
Techniques used by officials in selected sports, emphasizing general concepts of role of official and working knowledge of basic mechanics of officiating. Primarily for physical education and recreation majors. Separate sections for men and women.
- 438 FIELD WORK IN RECREATION INTERNSHIP (arr.) II** Staff
Supervised internship in recreational agencies. One hour per week in class discussion sessions. Limited to senior or graduate majors with 2.7 grade-point ratio in recreation. Pre: consent of recreation adviser. (Not offered 1968-69.)

- 453 ANATOMY IN PHYSICAL EDUCATION (3) I** Van Degrift
Gross human anatomy, emphasizing identification and description of parts of musculo-skeletal system; selected applications to motor activity. Primarily for physical education majors but open to others with consent of instructor. Pre: 1 yr. of biology or equivalent.
- 454 PHYSIOLOGY IN PHYSICAL EDUCATION (3) I** Van Degrift
Emphasis on physiological responses to exercise and physical training as related to strength, muscular endurance, circulo-respiratory endurance. Primarily for physical education majors, but open to others with consent of instructor. Pre: 1 yr. of biology or equivalent.
- 463 KINESIOLOGY (3) II** Little
Concepts and scientific principles essential to efficient human movement; proper application of kinesiological and mechanical principles to fundamental movements and selected complex motor skills. Pre: 453.
- 574 ASSESSMENT OF PHYSICAL FITNESS (3) I, II** Bernauer
Practicum for physical education teachers dealing with current methods and techniques by which physical fitness and related aspects of physical status assessed. Separate sections: (1) elementary school teachers, (2) secondary school teachers. Appropriate section must be designated at registration. Pre: teaching experience; consent of instructor.
- 603 SCIENTIFIC FOUNDATIONS OF PHYSICAL EDUCATION (3) I, II** Chui
Scientific laws and principles relevant to man's physical and social environment as related specifically to physical fitness and human movement. Pre: 203, 453, 454 and 463, or consent of instructor.
- 623 ADMINISTRATIVE PROBLEMS IN PHYSICAL EDUCATION (3) II** Chui
Current problems and recent trends in conduct of physical education programs in educational settings. For administrators, teachers, graduate students in physical education and related fields. Pre: 423 or equivalent; consent of instructor. (Identical with Ed EA 623.)
- 634 (534) ADAPTED PHYSICAL EDUCATION (3) II** Tominaga
Factors essential to practice of adapted physical education; disabilities, problems and needs of physically handicapped pupils with emphasis on accepted procedures for meeting these. Pre: 453, 454 and 463, or consent of instructor.
- 643 PUBLIC SCHOOL CURRICULUM FOR PHYSICAL EDUCATION (3) I** Little
Detailed examination of contents of adequate curriculum for physical education in public schools, K-12. Pre: 203, Ed CI 343, Ed CI 636, or consent of instructor. (Identical with Ed CI 643.)
- 663 MECHANICAL ANALYSIS OF SPORTS ACTIVITIES (3) II** Chui
Analysis of variety of sports activities in terms of applications of fundamental principles of mechanics with consideration to teaching and research. Pre: basic background in mathematics and physics; consent of instructor.
- 673 (573) EVALUATION AND MEASUREMENTS IN PHYSICAL EDUCATION (3) I** Chui
Processes involved in assessment of physical education program with emphasis on measurement criteria and instruments, interpretation of data and content, organization and conduct of evaluation program. Pre: 203 or Ed EP 416, or consent of instructor.
- 699 DIRECTED READING AND/OR RESEARCH (arr.) I, II** Chui
Individual reading and/or research. Pre: consent of instructor and department chairman.

College of Engineering

PROFESSIONAL EDUCATION IN ENGINEERING has been a function of the University of Hawaii since its beginning in 1907. For the first fifty years of the institution civil engineering was the only engineering program offered. But in recent years other disciplines have been added. The curriculum in civil engineering was fully accredited by the Engineers' Council for Professional Development in 1951, electrical engineering in 1962, and mechanical engineering in 1967.

The program of study leading to an engineering degree provides a well-rounded university education designed to develop the general qualities of leadership and human understanding inherent to an educated person. In addition, it equips the engineering graduate with a sound theoretical background to meet the new and demanding problems of a rapidly expanding technology. Career opportunities in engineering, both in Hawaii and throughout the world, have never been brighter. The graduate of the engineering programs offered at the University of Hawaii is well-prepared to meet the challenges of our technology-oriented society.

Admission and Degree Requirements

General admission requirements of the University and recommended courses for prospective engineering students are listed on pp. 36-40. Additional screening of aptitude tests and high school records may be made for acceptance into the College of Engineering.

The average engineering student, both at the University of Hawaii and nationally, requires more than eight semesters to receive an accredited engineering degree, even though all engineering curricula are listed in this catalog for completion on an eight-semester basis. Engineering students are encouraged to investigate the possibility of summer course work, particularly after the freshman and sophomore years, both for required courses and to satisfy the general education elective requirements.

In determining a student's draft status, the normal length of time for the completion of an engineering degree, established by the University and acceptable to the Selective Service System of the State of Hawaii, is four and one-half years. Therefore, an engineering student is eligible to qualify for a II-S deferment for the entire four and a half-year period, if he is satisfactorily pursuing a full-time course of study.

To receive the bachelor of science degree in engineering a student must:

1. Complete the course work for one of the engineering curricula, which also satisfies all University requirements;
2. have a 2.0 grade-point ratio for all registered credits;
3. have a 2.0 grade-point ratio for all upper division courses in the major department.

Curricula

The College of Engineering offers accredited undergraduate programs in civil, electrical, and mechanical engineering, as well as a business-oriented curriculum in general engineering. The course work in each of these programs provides a fundamental science-oriented university education with adequate coverage of communications, the humanities and social sciences; the basic physical sciences of mathematics, physics and chemistry; the engineering sciences common to all engineering disciplines, such as thermodynamics and electricity; and engineering elective courses which introduce the student to the engineering method of design.

The first year is common to all four curricula and includes the following courses:

Common First Year

FIRST SEMESTER	CREDITS	SECOND SEMESTER	CREDITS
Eng 101 Expository Writing	3	Eng 102 Expository Writing	3
*Math 205 (135) Calculus I	4	Math 206 (136) Calculus II	4
†Chem 117 (108) Principles of Chem	4	Phys 170 General Physics	4
Chem 118 (108) Principles of Chem Lab	1	Phys 171 General Physics Lab	1
GE 107 World of Engineering	3	‡GE 109 (105) Introd Design & Graphical Analysis	3
Total	15		15

At the beginning, or during, the sophomore year the engineering student selects the field of study in which he wishes to receive his degree, and pursues one of the curricula listed on the following four pages. The course work for each of these programs of study satisfies the general educational requirements of the University.

Those engineering students who are unusually well qualified academically are encouraged to participate in the Selected Studies and Honors Program. (See "Special Programs.") There is an honors coordinator for the College of Engineering, who works with the faculty adviser of the honor student to assure that a challenging program of study is established. Upon recommendation of the coordinator, the honor student is allowed some flexibility in course selection from the curricula that follow.

* Math 134 may be required if math preparation is inadequate.

† If prerequisite for Chem 117 has not been met, 113-115 (103) and 114-116 (104) will be substituted.

‡ GE 61 is required of students who have not had one year of high school mechanical drawing.

Civil Engineering Curriculum**SECOND YEAR**

FIRST SEMESTER		SECOND SEMESTER	
	CREDITS		CREDITS
CE 211 (111) Surveying I	2	CE 212 (112) Surveying II	3
CE 270 (170) Applied Mechanics I	3	CE 271 Applied Mechanics II	3
Math 231 Advanced Calculus I	3	Math 232 Advanced Calculus II	3
Phys 272 (172) General Phys	3	Phys 274 (174) General Phys	3
Phys 273 (173) General Phys Lab	1	Hist 152 World Civilization	3
Hist 151 World Civilization	3		
Sp 145 Expository Speech	3		
	<hr/>		<hr/>
Total	18		15

THIRD YEAR

FIRST SEMESTER		SECOND SEMESTER	
	CREDITS		CREDITS
CE 320 (220) Fluid Mechanics I	3	CE 322 (222) Fluid Mechanics II	3
CE 321 (221) Hydraulic Lab	1	CE 372 (274) Mechanics of Materials II	3
CE 371 (241) Mechanics of Materials Lab	1	CE 350 (351) Soil Mechanics	3
CE 370 (273) Mechanics of Materials I	4	ME 311 (231) Thermodynamics	3
EE 303 (102) Electrical Science	3	Elective (Human. or Soc. Sciences)	6
Elective (Human. or Soc. Sciences)	3		
Econ 120 Intro. to Econ.	3		
	<hr/>		<hr/>
Total	18		18

FOURTH YEAR

FIRST SEMESTER		SECOND SEMESTER	
	CREDITS		CREDITS
CE 431 (331) Sanitary Engineering	3	GE 405 (301) Engineering Management	3
CE 461 (360) Transportation Engineering	3	CE Electives*	6 or 7
CE 485 (380) Structural Design I	4	Elective (Human. or Soc. Sciences)	3
CE 421 (321) Hydraulics or CE 481 (385) Structural Anal.	3	Elective†	3
Elective (Human. or Soc. Sciences)	3		
	<hr/>		<hr/>
Total	16		15 or 16

* CE electives: CE 424 (325), 426 (326); or CE 486 (386), 482 (388); or CE 462 (362), 450 (364) and/or 467 (311). Science electives: approved by adviser.

† Consent of adviser.

Electrical Engineering Curriculum**SECOND YEAR**

FIRST SEMESTER		SECOND SEMESTER	
	CREDITS		CREDITS
CE 270 (170) Applied Mechanics I	3	CE 271 Applied Mechanics II	3
Math 231 Advanced Calculus I	3	Math 232 Advanced Calculus II	3
Phys 272 (172) General Physics	3	Phys 274 (174) General Physics	3
Phys 273 (173) General Physics Lab	1	Phys 275 (175) General Physics Lab	1
Hist 151 World Civilization	3	Hist 152 World Civilization	3
Sp 145 Expository Speech	3	EE 311 (211) Circuit Theory	3
	<hr/>		<hr/>
Total	16	Total	16

THIRD YEAR

FIRST SEMESTER		SECOND SEMESTER	
	CREDITS		CREDITS
EE 312 Circuit and System Analysis	3	EE 325 (221) Electronics I	3
EE 313 (223) Circuits Lab	1	EE 374 (232) Traveling Waves and Networks Laboratory	1
EE 371 (273) Fields and Waves I	3	EE 331 (351) Electro-mechanical Energy Conversion	3
Phys 440 Solid State Physics	3	EE 333 (353) Energy Lab	1
Econ 120 Introduction to Economics	3	EE 372 (373) Fields and Waves II	3
Elective*	3	ME 431 (460) Electronic Proc. in Materials or ME 371 (243) Mechanics of Solids	3
	<hr/>	Elective*	3
Total	16	Total	17

FOURTH YEAR

FIRST SEMESTER		SECOND SEMESTER	
	CREDITS		CREDITS
EE 326 (321) Electronics II	3	ME 311 (231) Thermodynamics	3
EE 327 (323) Electronics Lab	1	Electives*	12
Electives*	12		<hr/>
Total	16	Total	15

* The 30 elective credits must satisfy University General Education requirements and must include 15 credits in technical electives (engineering, mathematics and physics courses 300 or above) of which at least 6 credits must be in EE.

General Engineering Curriculum**SECOND YEAR**

FIRST SEMESTER		SECOND SEMESTER	
	CREDITS		CREDITS
CE 211 (111) Surveying I	2	CE 271 Applied Mechanics II	3
CE 270 (170) Applied Mechanics I	3	Math 232 Advanced Calculus II	3
Hist 151 World Civilization	3	Phys 274 (174) General Physics	3
Math 231 Advanced Calculus I	3	Hist 152 World Civilization	3
Phys 272 (172) General Physics	3	Elective (Human. or Soc. Sciences)	3
Phys 273 (173) General Physics Lab	1		
Sp 145 Expository Speech	3		
	<hr/>		<hr/>
Total	18		15

THIRD YEAR

FIRST SEMESTER		SECOND SEMESTER	
	CREDITS		CREDITS
CE 370 (273) Mechanics of Materials I	4	CE 320 (220) Fluid Mechanics I	3
CE 371 (241) Mechanics of Materials Lab	1	CE 321 (221) Hydraulics Lab	1
ME 311 (231) Thermodynamics	3	CE 372 (274) Mechanics of Materials II	3
Econ 120 Introduction to Econ.	3	EE 303 (102) Electrical Science	3
Elective (Human. or Social Sciences)	3	ME 312 (232) Adv. Thermodynamics	3
	<hr/>	Mgt 300 Principles of Management	3
Total	14		<hr/>
			16

FOURTH YEAR

FIRST SEMESTER		SECOND SEMESTER	
	CREDITS		CREDITS
ME 331 (366) Materials Science	3	EE 305 (203) Elect. Science Lab.	1
EE 304 (301) Elect. Circuits	3	Eng 310 (210) or 315 (215) or Technical Engineering Elect.	3
Elective (Human. or Soc. Sciences)	3	GE 405 (301) Engineering Management	3
Business Elective (see list below)	3	Elective (Human. or Soc. Sciences)	3
Business Elective (see list below)	3	Elective (Human. or Soc. Sciences)	3
	<hr/>	Business Elective (see list below)	3
Total	15		<hr/>
			16

Business Electives: BEc 341 (340), BAS 302 (301), Mgt 321 (320), Mkt 300, Mgt 341 (340) or PIR 300 (350), LAW 300.

Mechanical Engineering Curriculum

SECOND YEAR

FIRST SEMESTER	CREDITS	SECOND SEMESTER	CREDITS
CE 270 (170) Applied Mechanics I	3	CE 271 Applied Mechanics II	3
Math 231 Adv. Calculus I	3	Hist 152 World Civilization	3
Phys 272 (172) General Physics	3	Math 232 Adv. Calculus II	3
Phys 273 (173) General Physics Lab	1	Phys 274 (174) General Physics	3
Hist 151 World Civ.	3	Elective (Human. or Soc. Sciences)	3
Elective (Human. or Soc. Sciences)	3	Sp 145 Expository Speech	3
Total	16		18

THIRD YEAR

FIRST SEMESTER	CREDITS	SECOND SEMESTER	CREDITS
ME 321 (230) Mechanics of Fluids	3	ME 312 (232) Applied Thermodynamics	3
ME 311 (231) Thermodynamics	3	ME 300 (234) Measurements Lab	2
ME 371 (243) Mechanics of Solids	3	ME 341 (367) Materials Processing	3
ME 331 (366) Materials Science	3	ME 375 (371) Introduction to System Dynamics	3
Econ 120 Intro. to Econ.	3	EE 303 (102) Electrical Science	3
Elective (Human. or Soc. Sciences)	3	Elective (Human. or Soc. Sciences)	3
Total	18		17

FOURTH YEAR

FIRST SEMESTER	CREDITS	SECOND SEMESTER	CREDITS
ME 400 (333) Mechanical Engr. Lab	2	ME 468 (374) Intro. to Engr. Design	4
ME 467 (373) Optimum Design of Mechanical Elements	3	EE 305 (203) Electr. Science Lab	1
ME 422 (475) Heat Transfer	3	Electives (Technical) *	9
EE 304 (301) Electronics Circuits	3	Elective†	3
Elective (Technical) *	3		
Elective (Human. or Soc. Sciences)	3		
Total	17		17

* Technical Electives: Any mathematics, physics or engineering courses numbered 300 or above approved by adviser; 6 credits must be ME courses.

† Consent of adviser.

Ocean Engineering

The University of Hawaii is one of the first schools in the United States to offer a degree in ocean engineering, which is defined as the application of engineering principles and techniques to the ocean environment. The current program is an interdisciplinary one at the Master of Science level, and involves the departments of oceanography as well as civil, electrical, and mechanical engineering. Graduate students in this program must have received a B.S. degree in engineering, or in a related science with engineering prerequisites. Specific information regarding ocean engineering and additional graduate activity to the doctoral level in other engineering disciplines may be found in the University of Hawaii *Graduate Division Bulletin*.

Center for Engineering Research

The purpose of the Center for Engineering Research is to promote and coordinate research activity within the College of Engineering. Current areas of research interests are in structural engineering, water resources, coastal engineering, waste-water treatment and disposal, theoretical mechanics, heat transfer, information theory, microwaves and atmosphere ionization. The center cooperates with other University agencies such as the Hawaii Institute of Geophysics, the Water Resources Research Center and the Pacific Biomedical Research Center, to bring the full resources of the University to bear on multidisciplinary research projects.

The James Look Laboratory of Oceanographic Engineering is one of the major research facilities of the Center for Engineering Research. This facility is the first structure of the Kewalo Oceanographic Research Center, and permits research activity that has direct bearing on many ocean-related problems occurring throughout the state of Hawaii. A partial list of current and planned research with this facility includes the following: tsunami wave action on harbor installations; undersea structures; harbor pollution studies; beach erosion; small-craft harbor design.

ENGINEERING COURSES

See pp. 4-5 for a discussion of course descriptions.

Civil Engineering (CE)

Professors CHIU, DANIEL, EVANS, GO, LAU, TINNISWOOD, SZILARD; Associate Professors HAMADA, HASELWOOD, JORDAAN, MITSUDA, MOH, TUNG, WILLIAMS, YUEN; Assistant Professors GRACE, HUMMEL, MIKASA, TAOKA

- 205-206 ARCHITECTURAL ENGINEERING (3-3) Yr.** **Powell**
 Design problems in physical systems of architecture. Including mechanics, strength of materials and design of simple beams, columns and trusses in various materials. Pre: Math 205. (Identical with Arch 205-206.)
- 211 (111) SURVEYING I (2) I (1 L, 1 lb)**
 Basic principles, computations, use of instruments involving horizontal and vertical measurements. Pre: trigonometry; GE 109.
- 212 (112) SURVEYING II (3) II (2 L, 1 lb)**
 Topographic mapping; curves; earthwork; computer applications; route problems. Pre: Math 205, CE 211 and GE 107 or GE 251.
- 270 (170) APPLIED MECHANICS I (3) I, II**
 Equilibrium of particles, rigid bodies, frames and machines; vectors centroids, friction and moments of inertia. Pre: Phys 170.
- 271 APPLIED MECHANICS II (3) I, II** **Taoka**
 Dynamics of particles and rigid bodies; force acceleration, impulse-momentum, work-energy. Pre: 270, Math 206.
- 320 (220) FLUID MECHANICS I (3) I, II** **Grace**
 Properties of fluids, fluid statics, kinematics and kinetics; principles of momentum and energy; real fluid effects. Pre: 271 or Phys 310.
- 321 (221) HYDRAULICS LABORATORY (1) I, II** **Grace**
 Experiments and demonstrations of fluid flow in open and closed conduits, fluid measurements and hydraulic machinery. Pre: credit or concurrent registration in 320.
- 322 (222) FLUID MECHANICS II (3) II** **Grace, Yuen**
 Principles of ideal and real fluid flow applied to incompressible fluids with introduction to compressible fluid motion. Pre: 320.
- 350 (351) SOIL MECHANICS (3) I, II (2 L, 1 lb)** **Evans, Hummel**
 Soil classification, elementary soil mechanics theory and practice. Pre: 370.
- 370 (273) MECHANICS OF MATERIALS I (4) I, II (3 L, 1 lb)** **Hummel**
 Elastic stress-strain relationship and behavior of members under flexural, torsional, axial loading. Pre: 270.
- 371 (241) MECHANICS OF MATERIALS LABORATORY (1) I, II (1 Lb)** **Staff**
 Introduction to experimental techniques, observation of materials under various loading conditions. Pre: credit or concurrent registration in 370.
- 372 (274) MECHANICS OF MATERIALS II (3) II**
 Inelastic behavior, unsymmetrical bending, theories of failure, curved beams, torsion, energy methods, buckling. Pre: 370.
- 411 APPLIED PROBABILITY AND STATISTICS IN ENGINEERING (3) I** **Grace**
 Basic concepts of probability and statistics; fitting data with named probability distributions; estimating statistical parameters; hypothesis testing; correlation and regression. Pre: consent of instructor.

- 421 (321) HYDRAULICS (3) I** **Grace, Yuen**
Open channel flow emphasizing backwater curves, hydraulic jump, surges, flood-routing; pipe networks; surges, water hammer in hydro systems; pumps, turbines. Pre: 320.
- 424 (325) APPLIED HYDROLOGY (3) II** **Lau**
Introduction to occurrence, distribution, circulation of surface and ground water through precipitation, streamflow, evaporation, transpiration, infiltration. Engineering applications. Pre: 320 or equivalent.
- 426 (326) HYDRAULIC DESIGN (4) II (3 L, 1 Lb)** **Yuen**
Hydraulic design projects; feasibility studies; preliminary and detail design. Dams, canals, gates, energy dissipators and culverts. Pre: 421, 485 and credit or concurrent registration in 424.
- 431 (331) SANITARY ENGINEERING (3) I** **Tinniswood**
Water resources. Fundamental aspects and design of water works. Pre: 320.
- 432 (332) SANITARY ENGINEERING (3) II** **Tinniswood**
Pollution control. Fundamental aspects and design of wastewater works. Pre: consent of instructor.
- 450 (364) SOILS AND FOUNDATION ENGINEERING (4) II (3 L, 1 Lb)** **Evans**
Application of soil mechanics to highways, airports, dams, foundations. Pre: 350.
- 461 (360) TRANSPORTATION ENGINEERING (3) I** **Haselwood**
Introduction to transportation economics, planning, administration, geometric design, system and operational characteristics. Pre: senior standing in CE, consent of instructor.
- 462 (362) ADVANCED TRANSPORTATION ENGINEERING (3) II** **Haselwood**
Traffic engineering, urban traffic analysis, mass transit, transportation technology. Pre: 461.
- 467 (311) PHOTOGRAMMETRY (3) I**
Basic principles; photographic equipment; control, method of compilation; mosaics. Pre: 212.
- *471 (571) ADVANCED DYNAMICS (3) I** **Tung**
Particle motion in three dimensions. Motion of system of particles and of rigid body. Euler's equations, generalized coordinates, Lagrange's equations. Pre: 271, Math 232, consent of instructor.
- 481 (385) STRUCTURAL ANALYSIS (3) I** **Mikasa**
Plane frameworks, graphical methods, influence lines, deflection and stress analysis of structures by classical methods. Pre: 370.
- 482 (388) ADVANCED STRUCTURAL ANALYSIS (3) II** **Hamada**
Analysis of indeterminate beams, rigid frames, trusses, arches and space frames by classical methods, moment distribution, introduction to matrix analysis. Pre: 481.
- 485 (380) STRUCTURAL DESIGN I (4) I (3 L, 1 Lb)** **Moh**
Design of elements of steel and reinforced concrete structures, with emphasis on ultimate strength theory. Pre: 370.
- 486 (386) STRUCTURAL DESIGN II (4) II (3 L, 1 Lb)** **Mikasa, Moh**
Continuation of 485. Design of structural systems in timber, steel and reinforced concrete, introduction of prestressed concrete design. Design project. Pre: 485 and credit or concurrent registration in 482.
- *487 (581) PRESTRESSED CONCRETE (3) I, II** **Go**
Analysis and design of prestressed beams, columns, slabs, composite sections. Special problems. Pre: 486 or equivalent, consent of instructor.

* May apply toward graduate program. See Graduate Division rules.

- 499 (399) SPECIAL PROBLEMS (arr.) I, II** Staff
Individual investigation in civil engineering topics as approved by instructor. Limited to seniors with 2.7 overall grade-point ratio, or 3.0 grade-point ratio in engineering.
- 621 ADVANCED FLUID MECHANICS I (3) I** Williams
Mechanics of ideal fluid, potential flow, conformal mapping, vortex motion, deep and shallow water wave theory, introduction to gas dynamics. Pre: Math 232, CE 322 or consent of instructor.
- 622 ADVANCED FLUID MECHANICS II (3) II** Williams
Mechanics of a real fluid, boundary layer and turbulence theory, drag, diffusion and other topics of advanced fluid mechanics. Pre: Math 232, CE 322 or consent of instructor.
- 624 FLOW IN POROUS MEDIA (3) II** Lau, Williams
Applications of fluid mechanics to flow of single-phase and multi-phase fluids in porous media. Pre: consent of instructor.
- 626 (623) SURFACE-WATER HYDROLOGY (3) II** Lau
Quantitative studies of water cycle and relationships among principal hydrologic elements: precipitation, runoff, infiltration and evapotranspiration with emphasis on engineering and management of surface-waters. Pre: consent of instructor.
- 627 (628) GROUND-WATER HYDROLOGY (3) I** Lau
Ground-water occurrence, movement, quality, conservation, development, management. Hydromechanics of ground-water. Pre: 424 or consent of instructor.
- 631 ENVIRONMENTAL AND SANITARY ENGINEERING THEORY I (3) I** Burbank
Study of principles and unit processes involved in water and air resources problems, including water sources purification principles, distribution, air pollution control. Pre: consent of instructor.
- 632 ENVIRONMENTAL AND SANITARY ENGINEERING THEORY II (3) II** Burbank
Principles of waste water and solids waste handling, treatment and re-use, study of factors involved in disposal of waste to natural waters. Pre: 631.
- 633 ENVIRONMENTAL AND SANITARY ENGINEERING DESIGN I (3) I (1 L, 2 Lb)** Staff
Functional design of modern water and air purification systems. Pre: consent of instructor.
- 634 ENVIRONMENTAL AND SANITARY ENGINEERING DESIGN II (3) II (1 L, 2 Lb)** Staff
Functional design of modern waste water and solids waste treatment systems. Pre: 633.
- 635 ENVIRONMENTAL AND SANITARY ENGINEERING CHEMISTRY**
(4) I (2 L, 2 Lb) Young
Chemistry of water, waste waters and air, including instrumentation and process control evaluations and interpretations of results as used in practice. Pre: consent of instructor.
- 636 ENVIRONMENTAL AND SANITARY ENGINEERING MICROBIOLOGY**
(4) (2 L, 2 Lb) Klemmer
Fundamental microbiology involved in environmental engineering processes and research with special emphasis on mixed culture systems, biochemistry, physiological chemistry. Pre: consent of instructor.
- 637 ENVIRONMENTAL AND SANITARY ENGINEERING LAB (3) II (2 L, 1 Lb)** Young
Studies of chemistry and physics of various unit processes in waste water and solids waste treatment, including laboratory work necessary for development of design criteria and operation and control of these systems. Pre: consent of instructor.
- 638 ENVIRONMENTAL AND SANITARY ENGINEERING PUBLIC HEALTH (3) II** Burbank
Characteristics of diseases, means of transmission and means of prevention through control of environment with special emphasis on public health administration, biostatistics, insect and rodent control, industrial hygiene. Pre: consent of instructor.

- 641 (625) OCEAN ENGINEERING (3) I** **Jordaan**
Principles of ocean engineering as application of knowledge of fluid mechanics and oceanography to engineering problems encountered in coastal and marine environments. Pre: consent of instructor.
- 642 (626) COASTAL AND HARBOR ENGINEERING (3) II** **Jordaan**
Solution of practical problems related to planning, design, construction, and maintenance of beaches, harbors and other coastal structures. Pre: consent of instructor.
- 644 (627) OCEAN HYDRODYNAMICS LABORATORY (2) II** **Jordaan**
Experimental studies of ocean wave, current and sediment hydrodynamics and their relation to established theory. Look Laboratory of Oceanographic Engineering and nearby ocean front will be utilized. Pre: 641 or Ocean 620.
- 651 (650) SOIL MECHANICS (3) II** **Evans, Hummel**
Theories of soil resistance, seepage, consolidation settlement analysis, bearing capacity, stability considerations. Pre: consent of instructor.
- 655 (651) APPLIED SOIL MECHANICS I (3) I (2 L, 1 Lb)** **Evans**
Foundation and stability analysis of retaining walls, footings, piles, load tests on footing and piles, mass stability, compilations and analysis of test data. Pre: 651 or consent of instructor.
- 656 (652) APPLIED SOIL MECHANICS II (3) II (2 L, 1 Lb)** **Evans**
Continuation of 655 to include seepage settlement, mass stability, sheet piling and tunnels. Pre: 655.
- 671 THEORY OF ELASTICITY I (3) I** **Tung**
Analysis of stress and strain, equilibrium and compatibility. Torsion and bending of prismatic bars. Plane stress and plane strain problems. Pre: consent of instructor.
- 672 THEORY OF ELASTICITY II (3) II** **Tung, Stuver**
Stress, strain and elasticity relations in indicial notation. Solution of two and three dimensional problems by complex variables, potential functions and transform methods. Special topics. Pre: 671.
- 673 THEORY OF PLASTICITY (3) II** **Mitsuda**
Inelastic stress-strain relationships. Yield condition and flow laws. Time-independent and time-dependent inelastic behavior. Limit analysis of members and structures. Pre: 671.
- 674 STABILITY OF STRUCTURES (3) II** **Stuver**
Elastic and inelastic buckling of columns. Lateral buckling of beams. Stability of frameworks and elastically supported columns. Pre: consent of instructor.
- 675 THEORY OF VIBRATIONS (3) I** **Taaka**
Principal modes and natural frequencies of discrete and continuous elastic systems. Approximate methods. Forced motions, damping effects, wave propagation. Pre: consent of instructor.
- 676 STRUCTURAL DYNAMICS (3) II** **Taaka**
Dynamic disturbances, free and forced vibration of structures with single-degree and multi-degree of freedom, elastic and inelastic beams, response of structures to dynamic loading. Pre: 675.
- 677 (680) ENERGY METHODS IN APPLIED MECHANICS (3) II** **Taaka**
Variational principles of mechanics and their application to engineering problems. Virtual work, minimum potential energy, minimum complementary energy. Applications to structures, solid mechanics. Pre: 671.
- 678 THEORY OF PLATES (3) II** **Tung**
Analysis of stress and deformation in thin plates bent by transverse loads under various edge conditions. Applications to circular, rectangular, other shapes. Introduction to large deflections or thick plates. Pre: 671 or consent of instructor.

- 679 THEORY OF THIN SHELLS (3) I** **Staff**
 Fundamental theories of shells with application to shell-type structures such as shell roofs, tanks, pressure vessels. Membrane theory of shells, shells of revolution, moment theory of shells, shallow shells. Pre: 671 or consent of instructor.
- 681 ADVANCED INDETERMINATE STRUCTURES (3) I** **Staff**
 Energy methods, elastic center, column analogy, indeterminate trusses, arches, influence lines, elements of matrix analysis, introduction to plastic theory. Pre: consent of instructor.
- 682 NUMERICAL METHODS OF STRUCTURAL ANALYSIS (3) II** **Staff**
 Finite difference, numerical integration, relaxation and matrix methods applied to analysis of structural systems. Computer applications. Pre: 681.
- 683 ADVANCED REINFORCED CONCRETE DES'GN I (3) I** **Go**
 Ultimate strength theory, composite beams using precast and cast-in-place concrete, rigid frames and slabs. Pre: consent of instructor.
- 684 ADVANCED REINFORCED CONCRETE DESIGN II (3) II** **Go**
 Continuation of 683. Spherical, cylindrical and hyperbolic paraboloid shells, circular and rectangular tanks, folded plates structures. Pre: 683.
- 685 PLASTIC ANALYSIS OF METAL STRUCTURES (3) I** **Taoka**
 Theory of limit design. Plastic behavior of structural materials, principles of upper and lower bound, statical method, mechanism method and semi-graphical method. Analysis of continuous beams, rigid frames, multi-story structures. Pre: 681.
- 696 SELECTED TOPICS IN CIVIL ENGINEERING (3) I or II** **Staff**
 Highly specialized topics in structural, soils, hydraulics, sanitary, ocean engineering. Pre: consent of instructor.
- 697-698 SEMINAR IN CIV'L ENGINEERING (1-1) Yr.** **Staff**
 Discussions and reports on literature, research, developments, and activities in one of these areas: (1) structural engineering; (2) environmental and sanitary engineering; (3) soil and foundation engineering; (4) hydraulic engineering. Pre: consent of instructor. Required of all graduate students.
- 699 DIRECTED READING OR RESEARCH (arr.) I, II** **Staff**
 Pre: consent of instructor.
- 800 THESIS RESEARCH (arr.)** **Staff**

Electrical Engineering (EE)

Professors ABRAMSON, KINARIWALA, KUO, LENZ, PETERSON, YUEN; Associate Professors GRANBORG, HWANG, WEAVER, WELDON; Assistant Professors FANG, LIN, NAJITA, ROELOFS; Researcher GAARDER

- 303 (102) ELECTRICAL SCIENCE (3) I, II (3 L)** **Staff**
 Development of electrical science concepts from physics of electricity and magnetism. For non-electrical engineers. Pre: Math 206; Phys 272.
- 304 (301) ELECTRONICS CIRCUITS (3) I, II (3 L)** **Staff**
 Analysis and synthesis of electrical networks and systems. For non-electrical engineers. Pre: 303.
- 305 (203) ELECTRICAL SCIENCE LABORATORY (1) I, II (1 Lb)** **Staff**
 Application of electric and magnetic field concepts to circuits, machines, electronics. For non-electrical engineers. Pre: registration in 304.

- 311 (211) CIRCUIT THEORY (3) I, II (3 L)** **Staff**
Analysis of electrical circuits. Transform methods. Topology. Pre: Phys 272; Math 231.
- 312 CIRCUIT AND SYSTEM ANALYSIS (3) I, II (3 L)** **Staff**
Laplace transform, s-plane analysis, transfer functions, Fourier analysis, sampling and correlation. Pre: 311; Math 232.
- 313 (223) CIRCUITS LABORATORY (1) I, II (1 Lb)** **Staff**
Laboratory for 312. Pre: 311; registration in 312.
- 325 (221) ELECTRONICS I (3) II (3 L)** **Staff**
Study of properties of electron tubes and semiconductor devices and their application as circuit elements. Pre: 311; Phys 440.
- 326 (321) ELECTRONICS II (3) I (3 L)** **Staff**
Theory and design of oscillators, waveforming circuits, modulators, demodulators, logic circuits. Instrumentation. Pre: 325.
- 327 (323) ELECTRONICS LABORATORY (1) I (1 Lb)** **Staff**
Laboratory for 326. Pre: 374; registration in 326.
- 331 (351) ELECTROMECHANICAL ENERGY CONVERSION (3) II (3 L)** **Staff**
Application of electric and magnetic field principles to energy flow between electrical and mechanical systems. A.c. and d.c. machines. Transformers. Pre: 311, 371.
- 333 (353) ELECTROMECHANICAL ENERGY CONVERSION LABORATORY (1) II (1 Lb)** **Staff**
Experiments on electromechanical energy conversion using generalized machine. Pre: 313; registration in 331.
- 371 (273) FIELDS AND WAVES I (3) I (3 L)** **Staff**
Stationary and traveling waves in distributed-parameter systems. Stationary electric and magnetic fields. Pre: registration in Math 232.
- 372 (373) FIELDS AND WAVES II (3) II (3 L)** **Staff**
Solution of Maxwell's equations under various boundary conditions. Introduction to microwave theory. Pre: 371.
- 374 (232) TRAVELING WAVES AND NETWORKS LABORATORY (1) II (1 Lb)** **Staff**
Experiments on properties of linear active networks and distributed-parameter systems. Pre: 313; registration in 325, 372.
- 396 PROJECT (2) I, II** **Staff**
Investigation of advanced engineering problems. Pre: senior standing.
- 399 SPECIAL PROBLEMS (arr.) I, II** **Staff**
Research or development problem. Pre: senior standing with 3.0 grade-point ratio in major field.
- 422 (431) ELECTRONIC INSTRUMENTATION (3) II (3 L)** **Staff**
Basic transducers and signal processing amplifiers for electronic control and measurements. Data acquisition and transmission circuits. Analog and digital circuits. Radioscience and oceanographic applications. Pre: 312, 325.
- 423 (433) INSTRUMENTATION LABORATORY (1) II (1 Lb)** **Staff**
Laboratory for 422. Pre: 313, registration in 422.
- 427 (485) TOPICS IN PHYSICAL ELECTRONICS (3) II (3 L)** **Fang**
Fundamental physical principles underlying phenomena and devices based on controlled motion of electric charges in solids and gases. Influence of applied electromagnetic fields, space charge, collisions and velocity distributions on motion of charge carriers. Bulk phenomena and surface effects. Transport of charges across semiconductor junctions, across metal-vacuum boundaries, through insulating layers, in gaseous plasma. Devices based on these effects. Integrated microelectronic devices. Pre: Phys 440 or consent of instructor.

- 435 (471) POWER SYSTEM ANALYSIS (3) I (3 L)** **Hwang**
 Characteristics of transmission systems. Generalized circuit constants and circle diagrams. Matrix representation of power systems. Load flow studies. Synchronous machines. Balanced and unbalanced operation. Stability. Pre: 331.
- 436 (483) DIRECT ENERGY CONVERSION (3) I (3 L)** **Hwang**
 Principles of energy conversion. Thermoelectric and thermionic generators. Photo-voltaic effect and solar cells. Magnetohydrodynamic power generators. Free energy and the fuel cell. Pre: 303 or 331; ME 311.
- 441 PRINCIPLES OF COMMUNICATIONS (3) I, II (3 L)** **Staff**
 Signal representation, modulation, communication systems, noise. Introduction to information theory. Pre: 325.
- 446 (465) INFORMATION THEORY AND CODING (3) I, II (3 L)** **Staff**
 Fundamental properties of information. Sources and channels and coding of information. Applications to communication, linguistics, music, economics, psychology. Method of study based on elementary probability theory, but emphasis on significance of results. Open to all students. Pre: Math 134; junior standing or consent of instructor.
- 451 FEEDBACK CONTROL SYSTEMS (3) I, II (3 L)** **Staff**
 Principles of linear feedback control systems with emphasis on methods, analysis and synthesis to meet prescribed performance criteria. Electronic, electromechanical, electrohydraulic components; stability criteria; root locus. Nyquist and Bode techniques; cascade and feedback compensation of control system. Pre: registration in 325, 331 or equivalent.
- 452 FEEDBACK CONTROL SYSTEMS LABORATORY (1) I, II (1 Lb)** **Staff**
 Laboratory for 451. Pre: 313 or registration in 451.
- 461 DIGITAL TECHNIQUES (3) I, II (3 L)** **Staff**
 Number systems, Boolean algebra and combinational digital circuits. Logical design. Sequential circuits. Machine language instructions. Organization of simple computer. Pre: registration in 325 or consent of instructor.
- 462 DIGITAL TECHNIQUES LABORATORY (1) I, II (1 Lb)** **Staff**
 Laboratory for 461. Pre: 313, registration in 461.
- 463 ANALOG COMPUTERS (3) II (3 L)** **Staff**
 Concepts and principles of analog computation. Scaling and programming linear and non-linear, and time-varying differential equations; direct stimulation of electrical and mechanical systems. Pre: 312, 325.
- 466 COMPUTER ORGANIZATION AND PROGRAMMING TECHNIQUES (3) II (3 L)** **Peterson**
 Organization and machine language of typical computers. Machine language programming techniques. Introduction to operating systems. Introduction to data structures, sorting, retrieving data from files of information. Pre: knowledge of FORTRAN programming or consent of instructor.
- 467 ALGORITHMIC LANGUAGES (3) I (3 L)** **Peterson**
 Introduction to algorithms, languages for describing them, associated programming techniques. Commonly used languages for numerical and non-numerical computation. Pre: knowledge of FORTRAN programming or consent of instructor.
- 473 (421) MICROWAVE THEORY AND TECHNIQUES (3) I (3 L)** **Staff**
 Theory and techniques of energy generation and transmission at microwave frequencies. Principles of operation of microwave tubes, devices, systems. Pre: 325, 372.
- 475 RADIO-WAVE PROPAGATION (3) I (3 L)** **Roelofs**
 Application of Maxwell's equations to study of radio-wave propagation in free space and ionized media. Study of formation and maintenance of earth's ionosphere. Geomagnetic and solar effects. Absorption and dispersion. Measurement techniques. Pre: 372.

491-492 (493-494) SPECIAL TOPICS IN ELECTRICAL ENGINEERING (3-3) I, II (3 L) Staff

Course content will reflect special interests of visiting and permanent faculty, and will be oriented toward juniors and seniors. In general, these will be in fields of control systems, information sciences, radioscience. Pre: consent of instructor.

495-496 SPECIAL TOPICS LABORATORY (1-1) I, II (1 Lb) Staff

Lab for 491-492. Pre: consent of instructor.

611-612 (605-606) NETWORK SYNTHESIS (3-3) Yr. (3 L) Kinariwala

Properties of driving-point and transfer immittances, lossless and lossy. Approximation techniques. Transfer function synthesis and techniques using active elements. Pre: 312 or equivalent.

613 (609) LINEAR SYSTEM ANALYSIS (3) I (3 L) Kuo

Discussion of fundamental concepts. Study of linear graphs, network equations and computational algorithms in linear algebra. Use of state-space methods, Fourier transforms, generalized functions. Study of random signals in linear systems. Pre: 312 or equivalent.

614 (608) ANALYSIS OF NONLINEAR SYSTEMS (3) II (3 L) Hwang

Properties of stability, singular points, limit cycles. Analysis techniques. Realizability of solutions. Pre: 326, 451; Math 232 or equivalent.

623 (631) ADVANCED ELECTRONIC INSTRUMENTATION (3) I (3 L) Staff

Electronic conversion transducers for control and measurements; special-purpose amplifiers; analog and digital components and circuits; applications. Pre: 422 or equivalent.

627 (685) ADVANCED TOPICS IN PHYSICAL ELECTRONICS (3) I (3 L) Fang

Recent developments in phenomena and devices of physical electronics. Pre: 427.

645 (642) INTRODUCTION TO LINEAR SYSTEMS AND NOISE (3) I (3 L) Staff

Linear systems, state space, time and amplitude discrete systems. Fourier methods. Random processes, their autocorrelations and spectral densities. Linear transformations of random processes. Gaussian random process.

646 (643) SIGNAL AND NOISE THEORY (3) II (3 L) Staff

Envelope and phase statistics of Gaussian random process. Finite time measurements of random processes. Spectral estimates. Modulation theory. Non-linear transformations of random processes. The Karhunen-Loeve expansion. Pre: 645 or equivalent.

647 (667) APPLIED STATISTICAL DECISION THEORY (3) II (3 L) Abramson

Random signals and noise; data processing and statistical decision theory. Detecting signals in presence of noise; applications to problems in communications, radar and radio astronomy. Signal processing in two dimensions with applications to tsunami detection and filtering of seismic signals. Adaptive decision making and pattern recognition. Pre: 645 or equivalent.

648 (668) ERROR-CORRECTING CODES (3) II (3 L) Weldon

Basic mathematical properties of block and convolutional codes, cyclic codes, correction of random and burst errors, implementation, use in practical error control systems. Pre: Math 311 or consent of instructor.

651 ADVANCED FEEDBACK CONTROL SYSTEMS (3) I (3 L) Staff

Analytical and numerical methods for investigation and solution of non-linear control systems, derivation of z-forms, the phase plane, describing function techniques, relay systems, sampled-data systems, non-linear compensation techniques, adaptive control systems. Pre: 451 or equivalent.

652 OPTIMIZATION TECHNIQUES IN CONTROL SYSTEMS (3) II (3 L) Staff

State-space concepts, solution of matrix-differential equations, state vectors and fundamental matrix, development of maximum principle, minimum time and minimum energy problem, generalized performance criteria, effects of inaccuracies of components, optimum design of adaptive control. Pre: 451 or equivalent.

- 653 ADAPTIVE CONTROL (3) II (3 L)** Staff
Control in a variable environment; definition of performance criteria; plant identification; time-variant control parameters; logical control processes; basic optimization processes; pertinent analog and digital control techniques; introduction to linear and dynamic programming for control; multi-dimensional control processes. Pre: 651 or consent of instructor.
- 654 CONCEPTS OF DIGITAL SYSTEM CONTROL (3) I (3 L)** Staff
Characteristics of digitized control signals; digital control components; organization, design, evaluation of digital control systems; command and interelement communication; transducers; error detection and loop compensation; actuation; reliability enhancement; automated design methodology. Pre: 451 or equivalent.
- 655 SAMPLED-DATA CONTROL SYSTEMS (3) I (3 L)** Staff
Theory and application of sampled-data control systems; sampling and filtering theorems, z-transforms, modified z-transforms, digital compensation and stability, optimization, application of state variable theory to sampled-data systems, on-line digital computer systems. Pre: 451 or equivalent.
- 656 CONCEPTS OF SYSTEMS ENGINEERING (3) II (3 L)** Lenz
Organization of large systems; system phases and evolution; planning; reliability and maintainability; system evaluation; trade-off and cost-effectiveness; concepts task automation; typical large systems. Pre: 654 or consent of instructor.
- 657 HYBRID AUTOMATIC CONTROL SYSTEMS (3) II (3 L)** Granborg
System components of hybrid computers. Automatic control system simulation, multi-point boundary-value problems, linear programming optimization problems and partial differential equations. Analog, digital and hybrid systems in process control. Pre: 451 or equivalent.
- 661 THEORY OF DIGITAL MACHINES (3) I (3 L)** Peterson
Introduction to sequential switching circuit theory, theory of automata, and to mathematical theory of linguistics as it applies to automata. Pre: consent of instructor.
- 671-672 (601-602) ELECTROMAGNETIC THEORY AND APPLICATIONS**
(3-3) Yr. (3 L) Najita
Solutions and applications of Maxwell's equations to radiation and propagation of electromagnetic waves. Pre: 372 or equivalent; Math 232 or equivalent.
- 673 (604) MAGNETO-IONIC THEORY (3) II (3 L)** Yuen
Electromagnetic waves in ionized medium with superimposed magnetic field. Applications. Pre: 475.
- 675-676 (621-622) ADVANCED MICROWAVE THEORY (3-3) Yr. (3 L)** Staff
Advanced topics in microwave theory. Pre: 473.
- 677 (675) ANTENNA THEORY (3) I (3 L)** Weaver
Principles of radiation; point sources and arrays; dipole and thin linear antennas; self- and mutual-impedances; antennas for LF, HF, VHF, UHF and microwave frequencies. Pre: 372 or equivalent.
- 693 SPECIAL TOPICS IN ELECTRICAL ENGINEERING (3) I, II (3 L)** Staff
Course content will reflect special interests of visiting and permanent faculty, generally in fields of control systems, information sciences, radiosience. Pre: consent of instructor.
- 697-698 SEMINAR IN ELECTRICAL ENGINEERING (1-1) Yr.** Staff
Pre: graduate standing, consent of instructor.
- 699 DIRECTED READING OR RESEARCH (arr.) I, II** Staff
Pre: graduate standing, consent of instructor.
- 800 THESIS RESEARCH (arr.) I, II** Staff
Pre: candidacy for M.S. or Ph.D. in E.E.

General Engineering (GE)

Associate Professor AVERY; Instructors DRAKE, POWELL, STOUTEMYER

- 61 GRAPHICAL COMMUNICATION (1) I (2 Lb) Staff**
 Orthographic and pictorial instrument drawing and sketching, dimensioning, auxiliary and section views. Intended for engineering students who have not had 1 year of high school mechanical drawing.
- 107 THE WORLD OF ENGINEERING (3) I, II (2 L, 1 Lb) Avery, Drake, Powell, Stoutemyer**
 Introduction to engineering: nature of its goals and techniques including computer programming. Pre: registration or credit in Math 205.
- 109 (105) INTRODUCTORY DESIGN AND GRAPHICAL ANALYSIS Avery, Drake, Powell, Stoutemyer**
 (3) I, II (1 L, 2 Lb)
 Use of graphical techniques for analysis of engineering problems; design project emphasizing creativity and presentation. Pre: 1 year of high school drawing or GE 61.
- 251 (110) DIGITAL COMPUTER PROGRAMMING (1) I, II Drake, Powell, Stoutemyer**
 Introductory computer programming for applied mathematics and physical science applications. Intended for students who have not taken 107.
- 405 (301) ENGINEERING MANAGEMENT (3) I, II Tinniswood**
 Business, legal, economic aspects of engineering. Pre: CE 370, ME 371 or EE 312.
- 410 PROGRAMMING SEMINAR (1) II (1 L) Stoutemyer**
 Seminar in programming for applied mathematics, physical science and engineering applications. Pre: 107, 251 or equivalent.
- 451 (401) ENGINEERING ANALYSIS (3) II (3 L) Stoutemyer**
 Modeling, numerical and digital computer analysis of fluid, electrical, thermal, mechanical and interdisciplinary systems. Emphasis on general techniques applicable to non-linear problems with irregular geometry. Pre: 107 or 251, Math 232 or equivalent, and consent of instructor.

Mechanical Engineering (ME)

Professors BURGESS, FAND, STUIVER; Associate Professors CHAI, CHOU, GABERSON, LARSEN-BADSE, MUNCHMEYER; Assistant Professors FOX, HTUN, JOHNSON

- 300 (234) MEASUREMENTS LABORATORY (2) II Staff**
 Techniques of engineering measurements. Methods, instruments, computation and procedures. Applications to typical problems. Pre: junior standing in ME.
- 311 (231) THERMODYNAMICS (3) I, II Staff**
 Basic laws. Work, heat, concept of entropy. Perfect gases, mixtures. Availability, irreversibility, efficiency. Pre: Phys 170.
- 312 (232) APPLIED THERMODYNAMICS (3) II Staff**
 Thermodynamic principles of reciprocating machines, turbomachinery, jet propulsion. Power and refrigeration cycles. Combustion. Pre: 311 (231).
- 321 (230) MECHANICS OF FLUIDS (3) I Fand**
 Incompressible and compressible ideal fluids, effects of viscosity. Similitude, boundary layer flow, elementary gas dynamics. Pre: Phys 170.
- 331 (366) MATERIALS SCIENCE (3) I Larsen-Badse**
 Behavior of materials as determined by structure and environment. Interrelationships between microscopic and macroscopic structure and phenomenological properties. Pre: Phys 274 (174).

- 341 (367) MATERIALS PROCESSING (3) II (2 L, 1 Lb)** **Htun**
Development, processing, fabrication of engineering materials. Energy requirements of various manufacturing methods and their effect upon material properties. Pre: 331 (366).
- 371 (243) MECHANICS OF SOLIDS (3) I, II** **Johnson**
Analysis of deformable bodies. Stresses, strains, criteria for yielding and fracture. Torsion, bending, buckling. Pre: CE 270 (170).
- 375 (371) INTRODUCTION TO SYSTEM DYNAMICS (3) II** **Burgess**
Linear and non-linear modeling of discrete physical elements in dynamic systems. Formulation and solution of governing differential equations by direct (classical) analysis. Transient and steady state response of first and second order single-degree-of-freedom systems. Pre: CE 271, Math 232.
- 400 (333) MECHANICAL ENGINEERING LABORATORY (2) I** **Staff**
Performance analysis and testing of machines, engines, systems. Experiments in automatic control. Special projects. Pre: 300 (234).
- 417 (342) AIR CONDITIONING AND REFRIGERATION (3) II** **Staff**
Refrigeration processes, psychrometrics, solar radiation. Applications to air conditioning design. Pre: 312 (232).
- 418 (344) TURBOMACHINERY (3) I** **Choi**
Theoretical analysis of energy transfer between fluid and rotor; principles, performance, design of compressors and turbines. Pre: 312 (232). (Not offered 1968-69.)
- 419 (382) POWER PLANTS (3) I** **Staff**
Steam generators, prime movers, piping design, plant economy. Solar energy. Introduction to non-electromechanical energy conversion. Pre: 312 (232).
- 422 (475) HEAT TRANSFER (3) I** **Fand**
Steady and transient conduction. Fundamentals of radiation and convection. Heat exchangers. Pre: 311 (231), Math 232.
- 424 (346) INTRODUCTION TO GASDYNAMICS (3) II** **Staff**
One-dimensional compressible flow involving change of area, normal shock, friction, heat transfer. Pre: 312 (232), 321 (230).
- 431 (460) ELECTRONIC PROCESSES IN MATERIALS (3) II** **Larsen-Badse**
Physical basis of electric, magnetic, optical properties of solids. Effects arising from material and processing variables and from impurities, imperfections, domains, grain boundaries. Pre: 331 (366) or Phys 440.
- 433 FAILURES IN MATERIALS (2) II** **Htun**
Imperfections. Fatigue. Fracture. Wear. Uniform, galvanic, fretting, cavitation, stress and high temperature corrosion. Bending, tensile and impact failures. Surface spalling, pitting, cracking. Selection of materials. Pre: 331 (366) or consent of instructor.
- 441 THERMAL MATERIAL PROCESSING (3) II** **Htun**
Liquid state, nucleation phenomena, solidification mechanism. Cast alloys and casting methods. Heat treating, ausforming, welding, brazing, soldering, adhesive bonding. Forgings, powder metallurgy. Plastics. Pre: 341 (367) or consent of instructor.
- 451 (343) AUTOMATIC CONTROL (3) I** **Burgess**
Fundamentals of control theory. Components and systems, response and stability. Applications to mechanical and industrial processes. Pre: 375 (371). (Not offered 1968-69.)
- 455 (335) NUCLEAR POWER ENGINEERING (3) I** **Choi**
Nuclear reactor principles: neutron mechanics, flux distribution. Reactor heat transfer: heat generation and removal, single and two phase flow. Analysis of reactor power plants. Pre: credit or registration in 422 (475).

457 (350) MARINE ENGINEERING (3) II**Munchmeyer**

Energy conversion systems for marine vehicles. System control. Propulsion devices. Pre: 311 (231). (Not offered 1968-69.)

467 (373) OPTIMUM DESIGN OF MECHANICAL ELEMENTS**(3) I (2 L, 1 Lb)****Munchmeyer**

Analysis and design of machine components for strength, rigidity, fatigue, etc. Fastenings, transmission devices, selected topics. Pre: 371 (243).

468 (374) INTRODUCTION TO ENGINEERING DESIGN (4) II (2 L, 2 Lb)**Munchmeyer**

Analysis and synthesis of integrated systems. Feasibility studies, design and decision processes. Techniques of optimization. Pre: 467 (373).

471 (477) FUNDAMENTALS OF SPACE DYNAMICS (3) II**Stuiver**

Motion of particle in central force field. Orbital mechanics. Rigid body motion. Euler equations and gyro dynamics. Satellite motion and control. Pre: 375 (371) or consent of instructor.

473 MECHANICAL VIBRATION AND SHOCK (3) II**Gaberson**

Review of single degree of freedom oscillatory system with special topics; transient excitation and shock analysis; detailed analysis of two degrees of freedom system to provide foundation for general discrete system analysis, vibration and shock of discrete multi-degree of freedom system; use of analog and digital computers; vibration and shock testing. Pre: 375 (371) and 371 (243), or consent of instructor.

474 FUNDAMENTALS OF ACOUSTICS (3) I**Burgess**

Sound generation and propagation in elastic media. Transmission between media and through pipes. Resonators, filters, radiators, microphones. The ear and hearing. Architectural acoustics. Underwater acoustics. Pre: 375 (371), EE 312, or consent of instructor.

496 MECHANICAL ENGINEERING TOPICS (arr.) I, II**Staff**

Specialized topics in thermosciences, mechanics, materials, systems or design. Pre: consent of instructor.

499 (390) PROJECT (arr.) I, II**Staff**

Investigation of advanced problems in mechanical engineering design or development. Pre: senior standing.

611 (601) CLASSICAL THERMODYNAMICS (3) I**Fox**

Generalized discussion of classical thermodynamics. Non-reacting and reacting mixtures. Development of unified theory of energy conversion from principles of irreversible thermodynamics. Pre: 312 (232).

612 (602) STATISTICAL AND NON-EQUILIBRIUM THERMODYNAMICS (3) II**Fox**

Development of techniques necessary for study of combustion reactions and behavior of solutions, films and electromagnetic systems. Introduction to statistical thermodynamics of ideal gases and solids. Pre: 611 (601).

621 (605) CONDUCTION HEAT TRANSFER (3) I**Chai**

Steady and unsteady heat conduction with and without heat source in solids. Analytical, numerical, graphical, analog methods for solving heat conduction problems. Radiation from solids and gases, heat exchange by radiation. Pre: 422 (475).

622 (606) CONVECTION HEAT TRANSFER (3) II**Fand**

Heat transfer in laminar and turbulent boundary layer including channel flow. Analogy between heat, momentum, mass transfer. Free convection, evaporation, condensation, mass transfer by diffusion. Pre: 422 (475), 626.

623 RADIATION HEAT TRANSFER (3) II**Fox**

Transmission of heat by radiation. Electromagnetic waves, Maxwell's equations, solutions for conductors and dielectrics. Radiosity methods, configuration factors, flux algebra. Radiation in gray enclosures with gases. Pre: 422 (475).

624 (610) GASDYNAMICS (3) I**Fox**

Multi-dimensional compressible flow in supersonic and subsonic regimes. Solutions by means of small perturbation theory, hodograph plane and method of characteristics. Pre: 424 (346).

626 VISCOUS AND TURBULENT FLOWS (3) I**Fand**

Navier-Stokes and energy equations, their formulation, properties and some exact solutions; laminar boundary layers; laminar stability, transition and turbulence; turbulent boundary layers; non-Newtonian fluids. Pre: 321 (230).

630 MATERIALS SCIENCE LABORATORY (2) I**Htun, Larson-Badse**

Experimental determination of thermal, mechanical, chemical, electronic properties of materials as related to structure; influence of thermal treatments and of imperfections. Pre: consent of instructor.

631 MECHANICAL PROPERTIES OF MATERIALS (3) I**Htun**

Imperfections. Dislocation theory of yielding, strain hardening, precipitation hardening, recovery and recrystallization. Creep, fatigue, impact, fracture. Pre: 331 (366).

635 CORROSION THEORY (3) I**Larsen-Badse**

Quantitative application of electrochemical theory and materials science to corrosion and oxidation reactions. Effect of environment. Cathodic protection, coatings, inhibitors, treatment of water and steam systems. Pre: 331 (366).

636 MATERIALS FOR THE OCEAN ENVIRONMENT (2) II**Larsen-Badse**

Application of materials science and corrosion theory to study of materials problems associated with ocean and to selection of materials of construction for this environment.

671 (640) MECHANICS OF CONTINUA I (3)**Johnson**

Stress and strain in continuous body. Review of vector analysis and development of Cartesian tensor calculus. Eulerian and Lagrangian descriptions of finite deformation. Equations of continuity, motion, state, energy. Applications to solids, liquids, gases. Pre: 371 (243).

672 MECHANICS OF CONTINUA II (3) II**Johnson**

Constitutive relations for elastic, visco-elastic, ideally plastic, strain hardening, strain-rate sensitive materials. Applications. Pre: 671 (640).

696 ADVANCED TOPICS IN MECHANICAL ENGINEERING (arr.) I, II**Staff**

Highly specialized topics in thermosciences, mechanics, materials, systems or design. Pre: consent of instructor.

697 SEMINAR (1) I, II**Staff**

Current problems in all branches of mechanical engineering. All M.S.M.E. candidates are normally expected to attend, and registrants are expected to present talks. Pre: graduate standing, consent of instructor. May be repeated.

699 DIRECTED READING OR RESEARCH (arr.) I, II**Staff**

Directed study for graduate students on subject of mutual interest to student and a staff member. Student must find faculty sponsor before registering. Pre: consent of department chairman. May be repeated.

800 THESIS (arr.) I, II**Staff**

Thesis for degree of M.S. in mechanical engineering. Pre: admission to candidacy and consent of thesis adviser.

Ocean Engineering (OE)

Professor BRETSCHNEIDER; Associate Professor ALLMENDINGER; Associate Researcher LEE;
Assistant Researcher SEIDL

- 603 OCEAN ENGINEERING ENVIRONMENT (3) I** Bretschneider, Lee
Evaluation of ocean environment as it affects ocean engineering operations, design, construction, maintenance problems. Pre: Ocean 620 or equivalent (OE 603 and Ocean 620 can be taken concurrently).
- 605 NAVAL ARCHITECTURE IN OCEAN ENGINEERING (3) I** Allmendinger, Seidl
Evaluation of hydrostatics and basic structural problems as they affect design and operation of floating offshore vehicles. Pre: enrollment in ocean engineering.
- 606 DYNAMICS OF FLOATING OFFSHORE STRUCTURES (3) II** Allmendinger, Seidl
Evaluation of dynamic behavior of floating structures as it affects safety and operation of such structures. Pre: 605 or equivalent.
- 608 SUBMARINE VEHICLE NAVAL ARCHITECTURE (3) II** Allmendinger
Ocean environmental aspects affecting design and operation of military and non-military submarine vehicles. Pre: 605 or equivalents.
- 697-698 SEMINAR IN OCEAN ENGINEERING (1-1) Yr.** Staff
Pre: graduate standing, consent of instructor.
- 699 DIRECTED READING OR RESEARCH (arr.) I, II** Staff
Pre: graduate standing, consent of instructor.
- 800 THESIS RESEARCH (arr.)**
Pre: candidacy for M.S. in ocean engineering.



Evening classes on the Manoa campus, at military bases, and in rural areas form part of the University's continuing education program. Both credit and non-credit courses are offered throughout the year.



College of General Studies

THE COLLEGE OF GENERAL STUDIES, established in 1956, is primarily concerned with meeting the continuing education needs of individuals and groups in the state. Programs designed for this purpose include conferences, institutes, informal courses, lyceums, lectures, and educational experiences designed for particular purposes or groups. These continuing education programs are available to all interested adults.

The College also provides educational opportunities for students who cannot because of time or distance attend courses regularly scheduled on campus. Degree credit courses for these persons are scheduled in the evening on campus and at various other places and times on Oahu and the other islands. Such courses are open to all students who have been regularly admitted to the University.

In addition the College administers the academic affairs of students who have been admitted to the University, but are not candidates for a degree at this institution. These students may attend full or part time in the day or evening. Inasmuch as they have no required program of study, such students have great latitude in the selection of their courses. They must, however, comply with other requirements and regulations of the University and must have completed any prerequisites required for the courses they choose.

Credit Courses. A group of basic courses, including the general education courses required by all degree curricula, are offered both on and off campus. Advanced courses are offered when needed by a substantial number of evening students. Admission is governed by general University requirements, and regular residence credit is given, including graduate credit where applicable.

On-campus accelerated evening courses are scheduled four times a year. Off-campus accelerated programs are also offered four times a year at Fort Shafter, Hickam Air Force Base, Kaneohe MCAS, Pearl Harbor, Schofield Centers, Tripler Army Hospital, Waipahu, Wheeler Air Force Base, and other off-campus locations. Courses are also taught on Hawaii, Maui, Kauai, Molokai, and Lanai, either by faculty members commuting from the Manoa campus or by other qualified personnel. Schedules for off-campus courses are arranged to fit the needs of students when such adjustments are academically acceptable.

In addition to its program within the state, the College operates overseas centers at Kwajalein and Midway. Selected courses for credit are given in an effort to meet the needs of personnel, both military and civilian, stationed in these areas.

Non-Credit Courses. Short courses covering selected college-level material in art, business, English, engineering, foreign languages, mathematics, general culture and other subjects are offered on and off campus. These and other special courses are offered when needed to provide training in specific professional or vocational areas, to prepare candidates for professional licensing examinations or to assist with special local problems. Non-credit courses are generally scheduled in the evening.

Sessions begin in January, April, July, and October. Any person with the equivalent of a high school education who can profit from these courses may enroll. Students who regularly attend receive certificates upon completion of their course of study.

Program for Afloat College Education. The PACE Program is currently offering Polaris submarine personnel the opportunity to further their formal education while serving aboard submarines. The program consists of lower division University courses taught by regular faculty. The program is unique in that the courses are conducted both in a classroom setting at Pearl Harbor and on submarines at sea.

Special and Professional Programs was organized in 1967 to integrate a wide range of non-credit university level continuing education programs. These include the Conference Center, Civil Defense Training, Labor-Management Education, and sequential programs for professional in-service education. Also included are experimental programs in Women's Continuing Education, Public Issues Discussions, and Education for Aging.

The Conference Center was established in the College in 1961. Its program serves the College itself as well as community groups and University departments by providing planning and administrative services for conference, institute, and workshop programs. The staff works closely with University departments and with both public and private organizations on all levels of continuing education activity in the state. In coordinating University resources with community needs, reliance is placed particularly on the advice and working cooperation of interested departments and divisions.

Institutes, workshops, and conferences are also initiated and presented where need is evident and resources are available. Such programs are developed with the advice and assistance of individuals and groups in the University and the community.

Services include assistance in planning; preparation and administration of budgets; procurement of resource persons; arrangement of travel, living accommodations and facilities, including related services; preparation of final financial and proceedings reports. Flexible scheduling of activities makes it possible to accommodate requests as they arise.

Civil Defense Training Program. Under contract with the Department of Defense, the College offers courses to train Shelter Management and Radiological Monitor instructors. Additional courses offered are Radiological Defense

Officer, Civil Defense Management, Shelter Management, and Emergency Operating Center Simulation Workshops. The program is also responsible for conducting conferences in civil defense for business and industry. Courses and conferences are offered on Oahu, Hawaii, Kauai, and Maui.

Labor-Management Education Program. The objectives of this program are to provide basic leadership training for those associated with management and labor, to the end that there shall be (1) understanding by both groups of the fundamental problems of mutual interest with which they must deal; (2) knowledge of the factors which are essential to productive relations between them; and (3) appreciation of the public's interest in the satisfactory solution of their common problems.

The program offers a number of general courses primarily designed for persons who are engaged in a leadership capacity in the unions, and in a supervisory capacity for management. Special courses are conducted for union and management personnel separately. These are planned with participating organizations and limited to the persons designated by those organizations.

The program also conducts or participates in staff training programs, conferences, and weekend institutes dealing with industrial relations and labor problems.

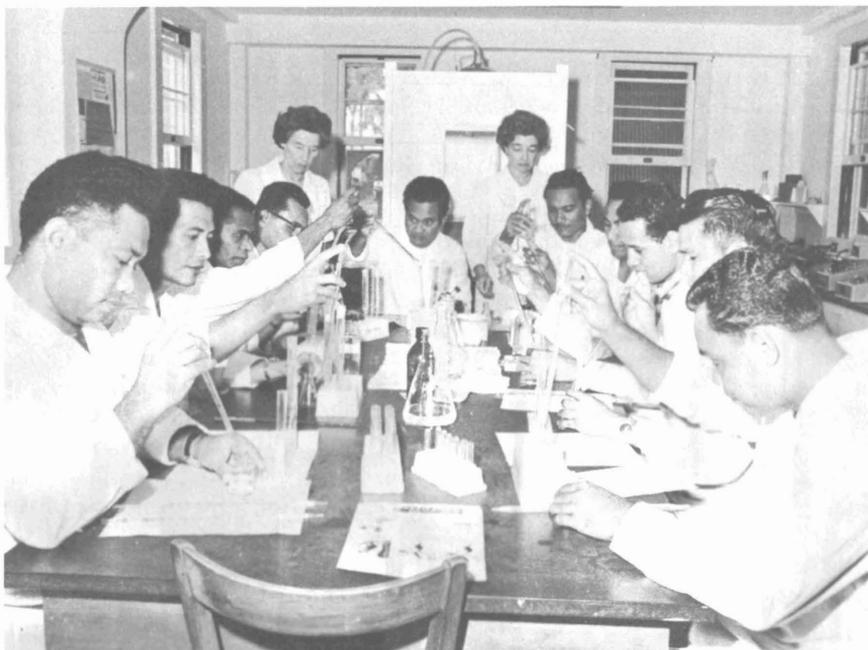
Lyceum and Speakers' Bureau. The Lyceum program of the College presents an annual series of lectures, dance, drama, literary and musical events using both local and imported talent. This series is presented throughout the state.

The Speakers' Bureau provides single lecturers and plans lecture series for both civilian and military organizations. A \$10 fee is charged for this service. A file of available lecturers is compiled yearly.

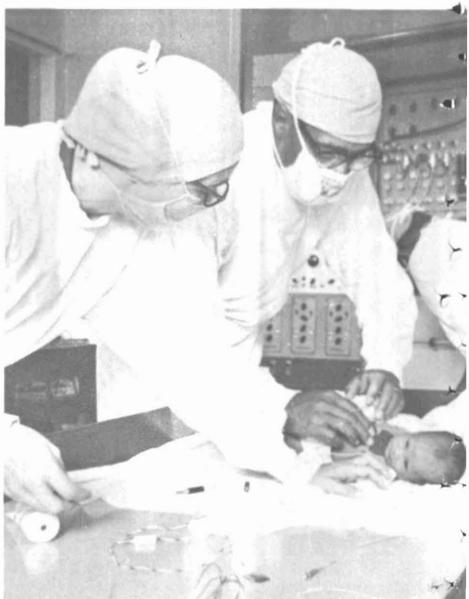
Television broadcasts are sponsored by the College as part of its on-going education responsibility to the community.

Manuscript Criticism Service. Writers of fiction, non-fiction, poetry, and drama may submit manuscripts for professional opinion and advice of qualified faculty members. Reading fees are available on request.

Announcements and other information concerning these varied programs will be made available by the College of General Studies upon request.



An international program in medical technology, the Newborn Psychology Research Laboratory, and facilities in public health illustrate some of the programs of the College of Health Sciences and Social Welfare.



College of Health Sciences and Social Welfare

THE COLLEGE OF HEALTH SCIENCES AND SOCIAL WELFARE provides educational programs and fosters research in the health fields of medicine, public health, nursing, and social work.

The School of Medicine carries students through the first two years in medicine, after which two further years in a mainland school lead to the M.D. degree; or, alternately, may lead to an advanced degree in a basic medical science, or in public health.

The School of Public Health offers programs leading to the M.P.H. or M.S. degrees.

The School of Nursing prepares students in professional nursing, technical nursing, and dental hygiene. The programs in dental hygiene and in technical nursing are lower division programs; that in professional nursing includes an upper division program leading to the B.S. degree, and a graduate program for specialization in mental health-psychiatric nursing, community health nursing, and administration of organized nursing services leading to the M.S. degree.

The School of Social Work offers a two-year graduate program leading to the M.S.W. degree. The School also offers courses on the undergraduate and preprofessional levels for juniors and seniors.

SCHOOL OF MEDICINE

The School of Medicine was created in 1965 as increased interest developed in health education and research in Hawaii and the Pacific area. Provisional accreditation was granted in 1965 and the first class of 27 students was admitted in September, 1967.

Admission and Degree Requirements

A. Medical Students

"Medicine has 1,000 doors," some for skillful clinicians, some for teachers and researchers; some for those who wish to work with people, some for those who wish to work with figures, chemicals, or animals; some for those who wish to work at home and some for those who want to work in the international scene. The School seeks students with various talents and interests, and a serious attempt is made to recognize and foster these special qualities.

Applicants to the School of Medicine for the curriculum in medicine must have completed at least three years (about 90 semester units) of college work. Preference will be given those who possess a bachelor's degree. Students at the University of Hawaii will commonly have a bachelor's degree in biological sciences, but the degree may be in any field. An effort toward breadth of learning, both in the humanities and in the sciences, should be made.

The following specific work is required for entry into the Medical School:

Special Requirements for Admission to the School of Medicine

Biology: at least 10 units; work through comparative anatomy, embryology, and the fundamentals of genetics is desirable.

Chemistry: at least 16 units, including quantitative analysis and organic chemistry. Organic chemistry laboratory and physical chemistry are desirable.

Physics: at least 8 units.

Mathematics: work through one year of calculus, and elementary statistics.

Medical College Admission Test (MCAT): required of all medical applicants.

The first year class is limited to 25 students. Preliminary applications are due October 1 and formal applications and supporting papers must be received before December 1 for consideration for admission the following September.

Correspondence regarding admission should be directed to: Admissions Office, University of Hawaii School of Medicine, 3675 Kilauea Avenue, Honolulu, Hawaii 96816.

B. Non-medical students

Applicants to the School of Medicine for B.S., M.S., or Ph.D. degrees should fulfill the requirements as noted for the specific disciplines, for instance, biochemistry, or medical technology.

Application for admission to any of the departments of the School of Medicine as a candidate for a master's degree or doctor's degree in a specific discipline should be directed to the Dean of the Graduate Division; for a bachelor's degree it should be directed to the admissions office noted above.

Curriculum for Medical Students

Medical students will follow a two-year curriculum designed to make transfer possible at the end of the second year to the junior class of any mainland medical school. Elective time is provided in both years to allow development of special interests.

Provision is made for a limited number of students who wish to take the work spread over a three-year period, or longer. For further information, see *Bulletin of the School of Medicine*.

CURRICULUM

YEAR	FIRST SEMESTER	CREDITS	SECOND SEMESTER	CREDITS	
1.	Medical Biochemistry (Biochem 605)	5	Human Physiology (Physiol)	6	
	Clinical Correlation I (Med 601)	1	Clinical Correlation (Med 602)	1	
	Functional Microscopic Anatomy (Anat 601)	4	Functional Human Anatomy (Anat 602)	5	
	Historical Introduction to Medicine I (Med 603)	1	Neuroanatomy (Anat 604)	2	
	Medical Genetics (Genet 611)	2	Historical Introduction to Medicine II (Med 604)	1	
	Medical Seminar I	1	Principles of Community Medicine (PH 697)	1	
	Principles of Community Medicine (PH 696)	1	Medical Seminar II	1	
	2.	Medical Bacteriology (Micro 606)	5	Preventive Medicine (PH 786)	1
		Patient Interviewing & Physical Examination (Med 611)	3	Pharmacology (Pharmacol 600)	5
		Clinical Conference I (Med 671)	1	Human Pathology II (Path 602)	4
		Human Pathology I (Path 601)	4	Laboratory Diagnosis II (Path 650)	2
		Laboratory Diagnosis I (Path 649)	2	Clinical Judgment (Med 612)	3
		Introduction to Human Behavior (Med 607)	2	Clinical Conference II (Med 672)	1
		Human Growth and Development (Med 615)	1	Psychopathology II (Med 616)	1

Allied Medical Sciences

Division of Speech Pathology and Audiology (SPA)

Professor ANSBERRY; Associate Professor RITTER; Assistant Professors MAY, PANG-CHING;
Associate Clinical Professor WATSON

Students who plan to obtain a B.S. degree in speech pathology and audiology should complete their University curriculum requirements in the College of Arts and Sciences during their first two years of residence. At the end of the second year, a transfer should be made to the School of Medicine, College of Health Sciences and Social Welfare.

Specialized courses in speech pathology and audiology required for the undergraduate major are: 300, 301, 302, 303, 320, 402, 410, and 411. Other specific requirements include: Linguistics 410, Psychology 110, 111, 112, and 320; at least 4 credits in physics and a minimum of 3 credits in mathematics. A minimum of 124 semester hours of credit is required.

Students in the College of Education who wish to specialize in this area will require special programs and should consult with the division of speech pathology and audiology as soon as possible after initial enrollment.

UNDERGRADUATE COURSES

- 300 (200) INTRODUCTION TO SPEECH CORRECTION (3) I** Ritter
Survey of field of speech correction; study of types of speech defects and hearing problems as they relate to speech dysfunctions.
- 301 (201) INTRODUCTION TO AUDIOLOGY (3) I** Ansberry
Basic concepts: psychoacoustics, anatomy and physiology, measurement of hearing, rehabilitation of hard-of-hearing.
- 302 (202) METHODOLOGY OF SPEECH CORRECTION (3) II** Ritter
Methods used in clinical procedures for organic and functional disorders of speech; observation of clinical procedures. Pre: 300; Ling 410.
- 303 (203) TESTING OF HEARING (3) II** Pang-Ching
Screening testing programs; conventional and special tests of hearing; interpretation of results; observations of clinical audiometry. Pre: 301.
- 320 SPEECH AND HEARING SCIENCE (3) II** Ritter
Study of science of speech and hearing including anatomy and physiology of organs involved.
- 402 (300) PATHOLOGY OF SPEECH (3) I** May
Etiology and symptomatology of speech and language disorders. Pre: 300, 302, 320.
- 410 (310) PRACTICUM IN SPEECH PATHOLOGY (3) II** Ritter, May
Clinical practice in use of diagnostic procedures and rehabilitation techniques with variety of speech disorders at various age levels. Pre: 300, 302, 320, 402.
- 411 (311) PRACTICUM IN AUDIOLOGY (3) I** Ansberry, Pang-Ching
Clinical practice in testing of hearing, hearing conservation, auditory training, speech reading, speech correction and conservation. Pre: 303.

GRADUATE COURSES

- 600 (630) RESEARCH METHODS (3) I** Ritter
Research methods applicable to field of speech pathology and audiology; analysis and reporting of data; bibliography; contemporary research. Required of all graduate students.
- 610 (600) ORGANIC DISORDERS OF SPEECH (3) I** May
Study of disorders of speech resulting from organic anomalies: cleft palate, cerebral palsy, laryngectomy, brain injury.
- 611 (601) AUDITORY TRAINING AND SPEECH READING (3) I** Pang-Ching
Principles and methods of development of maximum communication ability through training in use of residual hearing and by observation of visible bodily clues.
- 612 (602) FUNCTIONAL DISORDERS OF SPEECH (3) II** May
Diagnostic and therapeutic approaches to disorders of speech which are primarily functional in nature—articulation, voice, rhythm, language.
- 613 (603) LANGUAGE DEVELOPMENT FOR CHILDREN WITH HEARING DEFICIENCIES (3) II** Pang-Ching
Language acquisition by hard-of-hearing and deaf children; methods of stimulating growth.
- 701 (621) ADVANCED AUDIOLOGY (3) I** Ansberry
Instrumentation; selection of hearing aids; special tests of hearing; vocational problems of individuals with impaired hearing.
- 710 (610) ADVANCED PRACTICUM IN SPEECH PATHOLOGY (3-6) I, II** Ritter, May
(1) General clinical; (2) public school. Supervised clinical practice in diagnostic and therapeutic procedures.

- 711 (611) ADVANCED PRACTICUM IN AUDIOLOGY (3-6) I, II** **Ansberry, Pang-Ching**
 (1) General clinical; (2) public school. Supervised clinical practice in administering special tests; interpretation of audiograms; counseling of individuals with impaired hearing; use of varied rehabilitation techniques.
- 720 (640) SEMINAR IN SPEECH PATHOLOGY (3) I, II** **Ritter**
 (1) Diagnostic procedures; (2) functional disorders; (3) organic disorders. Section 1 1st sem.; sections 2 and 3 2nd sem. in alternate years. Section 3 not offered in 1968-69.
- 721 (641) SEMINAR IN AUDIOLOGY (3) I, II** **Ansberry**
 (1) Diagnostic procedures; (2) rehabilitation. Section 1 2nd sem.; section 2 1st sem.
- 799 (699) RESEARCH (1-4) I, II** **Ansberry, Ritter, Pang-Ching**
 (1) Speech pathology; (2) audiology. Required of all graduate students following non-thesis program (Plan B); open to other qualified graduate students.
- 800 THESIS RESEARCH (8) I, II** **Ansberry, Ritter, Pang-Ching**
 (1) Speech pathology; (2) audiology. Limited to graduate students enrolled in thesis program (Plan A).

Division of Comparative Medicine

Associate Professor PALUMBO

The division of comparative medicine participates in graduate instruction, provides materials and guidance for research with emphasis on the study of disease processes in animals which relate to human health and biomedical research.

- 451 THE USE OF ANIMALS IN RESEARCH (2) I** **Palumbo**
 To acquaint students with concepts and methods in use and care of experimental animals.

Anatomy (Anat)

Professor NOYES; Associate Professors DE FEO, DIAMOND; Assistant Professor YANAGI-MACHI; Assistant Clinical Professor GORDON

Instruction in the department of anatomy is planned primarily to meet the needs of students in medicine but, insofar as facilities permit, all of the courses are open to other properly qualified third- and fourth-year undergraduate and graduate students. Those who are not registered in medicine but wish to take work in the department should make arrangements in advance with the instructors concerned.

Facilities are available for a limited number of doctors of medicine, or others with equivalent training, who may wish to do special dissections or pursue work on problems within the scope of the department. Graduate study may be undertaken in such aspects of anatomy as are indicated by the courses listed. Programs combining work in anatomy and other fields of biology or medicine may be arranged.

- 601 FUNCTIONAL MICROSCOPIC ANATOMY (4) I** **De Feo, Staff**
Structural and functional correlates in organization of human cells and tissues as revealed through light and electron microscopy. Pre: admission to Medical School, or equivalent and consent of instructor for non-medical students.
- 602 FUNCTIONAL HUMAN ANATOMY (5) I** **Noyes, Staff**
Structure and function of various organ systems of human body. Laboratory dissection and demonstration. Pre: admission to Medical School, or equivalent and consent of instructor for non-medical students.
- 604 NEUROANATOMY (2) II** **Diamond, Staff**
Structural and functional organization of human nervous system. Pre: admission to Medical School, or equivalent and consent of instructor for non-medical students.
- 620 SUBCELLULAR-STRUCTURE AND FUNCTION (3) II** **Bhagavan, De Feo**
Correlation of ultrastructure of cells with their biochemical function. Laboratory: isolation procedures of subcellular components and demonstration of their characteristic properties. Pre: organic chemistry and/or consent of instructor.
- 630 REPRODUCTIVE BIOLOGY (3) II** **De Feo, Staff**
Comprehensive study of morphology, biochemistry, physiology of reproductive system in a number of experimental animals. Major emphasis on mammals and their regulatory mechanisms (local, endocrine, neural). Pre: 601 or equivalent and consent of instructor.
- 691 SEMINAR (1) I, II** **Staff**
Current topics of biologic structure and function; reports, discussions. May be repeated.
- 699 DIRECTED RESEARCH (arr.)** **Staff**
Each graduate student selects preceptor and a problem compatible with laboratory equipment and experimental animals required. Several students may work on various aspects of a general problem currently under study. Students learn specific techniques, methodology and pitfalls of experimental research under close guidance by faculty member. Pre: consent of instructor.

Biochemistry (Bioch) and Biophysics (Bioph)

Professors GREENWOOD, PIETTE, WINNICK, YASUNOBU, BASSHAM (Visiting); Associate Professors MANDEL, MOWER; Assistant Professor MCKAY

The biochemistry and biophysics department offers graduate programs leading to the M.S. and Ph.D. degrees, and provides the requisite courses for medical students.

561-562 (or the equivalent) is prerequisite for all graduate work in this department.

BIOCHEMISTRY

- 441 BASIC BIOCHEMISTRY (3) I** **Winnick, McKay, Yasunobu**
Lectures on function and composition of biological substances and their metabolic transformation in animals, plants, micro-organisms. Pre: Chem 113-114, 243, 244 or equivalent.
- 442 BASIC BIOCHEMISTRY LABORATORY (1) I (1 Lb)** **McKay**
Experiments working with substances discussed in 441.
- 601-602 (561-562) GENERAL BIOCHEMISTRY (3-3) Yr.** **Yasunobu, Mower**
Comprehensive survey of chemistry, structure, metabolism, physiological functions of important components of living organisms. Pre: Chem 243-244, Chem 351-352, or consent of instructor.

- 611-612 (571-572) GENERAL BIOCHEMISTRY LABORATORY (2-2) Yr. (2 Lb)** **McKay**
Selected physico-chemical and metabolic experiments to illustrate important principles of 601-602.
- 671-672 SEMINAR (1) I, II**
Weekly discussions and reports on various subjects; current advances in biochemistry and biophysics.
- 710 SPECIAL TOPICS IN ENZYMOLOGY (2)** **McKay**
Selected detailed discussions on properties and mechanism of action of several important enzymes. Pre: 601-602. (Alt. yrs., offered 1968-69.)
- 715 (615) ADVANCED CARBOHYDRATE METABOLISM (2) I*** **Barber**
Chemistry and metabolism of sugars, polysaccharides, glycolipids, and glycoproteins. Role of carbohydrates in immunology. Pre: 601-602.
- 720 BIOENERGETICS (2)** **Mower**
Current topics on mechanism of energy production and transformation in living organisms. Photosynthesis, oxidative and substrate level phosphorylation. Pre: 601-602. (Alt. yrs., offered 1968-69.)
- 730 (630) NUCLEIC ACIDS AND VIRUSES (2) II*** **Hall**
Current topics on DNA and RNA, radiation effects, cytoplasmic inheritance, mutagenesis, chemistry of the gene. Molecular biology of bacteriophages. Pre: 601-602.
- 740 ADVANCED PROTEIN CHEMISTRY (2)** **Yasunobu**
Reactions of protein with various reagents, methods of amino acid sequence determination. Discussion of protein structure and evolution of biologically active polypeptides. Pre: 601-602.
- 799 (699) DIRECTED RESEARCH**
Students may register on approval of department.
- 800 THESIS RESEARCH (arr.) I, II**
Approval of department faculty required.

* Given in alternate years.

BIOPHYSICS

- 601 SURVEY OF BIOPHYSICS (3) I** **Piette**
Theory and application of various physico-chemical techniques used in molecular biology, including optical absorption, light scattering, magnetic resonance, ultracentrifugation, viscometry, microscopy, circular dichroism and optical rotary dispersion. Pre: Chem 351-352 and Math 206.
- 602 SURVEY OF BIOPHYSICS (3) II** **Piette, Staff**
Structure and biological significance of water, physical chemistry of biopolymers and relationship of their structure to biological function. Pre: 601.
- 603 BIOPHYSICS LABORATORY (3) II** **Mandel**
Application of physio-chemical techniques to biological systems. Use of analytical ultracentrifuge absorption, optical absorption, electron spin resonance, viscometry, diffusion and light scattering. Pre: 601 and 602.
- 701 MOLECULAR STRUCTURE AND FUNCTION OF CHROMOSOME (2) I** **Mandel**
Physical properties of phage and bacterial chromosomes as determined by sedimentation velocity, buoyant density, ultraviolet absorption autoradiography, electron microscopic techniques, and their correlation with genetic structure and function. Pre: 601 and 602. (Alt. yrs.)
- 702 ELECTRON AND NUCLEAR MAGNETIC RESONANCE STUDIES IN BIOLOGICAL SYSTEMS (2) II** **Mandel, Piette**
Theory of nuclear and electron magnetic resonance. Considerations of relaxation mechanisms and applications to biological systems. (Alt. yrs.)

703 CONFORMATIONAL ANALYSIS OF BIOPOLYMERS (2) I

Discussion of applications of statistical mechanics to study of macromolecules in solution with special emphasis on biopolymers. Calculation of average dimensions of randomly coiling macromolecules, including polyelectrolytes, helix-coil transition in polypeptides and polynucleotides, discussion of protein and nucleic acid denaturation. Pre: 601 and 602.

704 THE ROLE OF FREE RADICALS IN BIOLOGICAL SYSTEMS (2) II

Piette

Discussion of univalent biological oxidation-reduction. Electron transport phenomena in enzyme systems. Experimental techniques in following fast univalent reactions. Role of free radicals in photosynthesis and other photo-biological systems.

Genetics (Genet)

Professors ASHTON, BECKMAN, MORTON; Associate Professors HIRAIZUMI, HUNT, MI;
Associate Clinical Professors HALPERIN, WAXMAN

451 PRINCIPLES OF GENETICS (3) I

Beckman

Fundamental genetic principles, with examples from microorganisms, plants, animals, man. Pre: one semester of biological science. College algebra and elementary chemistry recommended.

452 GENETICS LABORATORY (1) I

Hiraizumi

Experiments with a variety of organisms to illustrate principles of 451.

480 (518) MOLECULAR GENETICS (3) II

Hunt

Genetic principles at cellular level as related by structure of proteins and nucleic acid to genetic fine structure, mutagenesis, transfer of genetic information and control of development. Pre: 451 and one semester of biochemistry recommended.

602 TECHNIQUES IN GENETICS (2) II

Ashton, Beckman, Hiraizumi, Hunt

Modern techniques and relevant study for high school teachers of biology. Pre: consent of instructor and school teaching experience.

611 GENETICS FOR MEDICAL STUDENTS (2) I

Ashton

Principles of genetics for medical students. Pre: consent of instructor.

618 CYTOGENETICS (3) II (2 I, 1 Ib)

Sagawa

Correlation of genetic and cytological phenomena. Pre: 451, Bor 418 recommended. (Alt. yrs.; offered 1969-70.)

625 ADVANCED TOPICS IN GENETICS (2) II

Staff

Advanced treatment of frontiers in genetics. Pre: graduate standing in genetics or consent of instructor.

650 POPULATION GENETICS (3) II

Morton

Mathematical, observational, and experimental results bearing on effects of mutation, selection, and systems of mating on distribution of genes. Genetic analysis of non-experimental populations, especially man. Pre: 451; elements of calculus, probability and statistics. (Alt. yrs.; offered 1968-69.)

654 GENETICS SEMINAR (1) I, II

Ashton

Research and topical literature reports in genetics. May be repeated. Pre: graduate standing in genetics or consent of instructor.

660 STATISTICAL METHODOLOGY IN GENETICS (3) I

Mi

Application of statistics to genetics and human biology, with emphasis on high speed computing methods. Pre: 451 or equivalent, calculus, biometry or statistics. (Alt. yrs.; offered 1968-69.)

699 DIRECTED RESEARCH (arr.) I, II

Staff

Pre: graduate standing; consent of instructor.

800 THESIS RESEARCH (arr.) I, II

Staff

Pre: consent of instructor.

**GRADUATE COURSES IN GENETICS OFFERED BY
OTHER DEPARTMENTS**

- BIOCHEMISTRY 711 Nucleic Acids and Viruses**
BIOCHEMISTRY 720 Molecular Genetics and Comparative Biochemistry
HORTICULTURE 655 Radiation Biology
ANIMAL SCIENCES 645 Advanced Animal Breeding
MICROBIOLOGY 671 Microbial Genetics

Medicine (Med)

Professors BLAISDELL, GAULT, NUGENT; Associate Professors BASSETT, BUDY, S. L. GAULT (Okinawa), LEE (Okinawa), SIMPSON (Okinawa); Associate Clinical Professors ALLISON, ARNOLD, H. L. JR., BERK, GILBERT, HARTWELL, JIM, KAGAN, LEVIN, LIN, NORDYKE, ORBISON, YIM, YOKOYAMA; Assistant Clinical Professors CHEITLIN, CHESNE, CHING, G. A., CHUN, H. H., COX (Okinawa), EARLL, FONG, H. H. C., FRYER, GOSHI, GOTO, U., LEE, W. Y., MILLER, MIYAHIRA, NAY, OISHI, OSBORN, PALMER, SIEMSEN, YAMADA; Clinical Instructors BALL, BEDDOW, BIRK (Okinawa), BOTTICELLI, CHANG, W. Y. K., EITH, ENGSTROM, FONG, B. W. D., GLOBER, HASHIMOTO, HO, R., HORIO, KEENAN, KOBASHIGAWA, LAU, T. K. L., LIMBER, LUM, C. M., MAGRUDER, MORRIS, NEILSON, OKIHIRO, POPPER, RYMUT (Okinawa), SHIRASU, SUZUKI, WAKAI, WALDRON (Okinawa), YAMAMOTO

The department assumes major responsibility for assisting the student in integrating his learning in the humanities, social sciences, and the non-clinical and biological sciences by confrontation with clinical situations.

The department is also concerned with the student's acquisition of habits of continuing, critical and disciplined self-education; and of basic clinical skills in preparation for clinical courses given in the junior and senior years of 4-year medical schools.

The department also participates in internship and residency training programs in affiliated hospitals. The close association of the student with the graduate physicians in these programs also affords valuable learning experiences.

Research in clinical fields is fostered.

- 601-602 (600-601) CLINICAL CORRELATION (1-1) I, II** Mamiya, Noyes, Blaisdell, Staff
 Correlation of anatomy, biochemistry, genetics, physiology, public health with natural history of health and illness. For first-year students. Pre: consent of instructor.
- 603-604 (550) HISTORICAL INTRODUCTION TO MEDICINE (1-1) I, II** Blaisdell, Staff
 Consideration of the inter-relationships of historical, ethical, social, scientific aspects of medicine. Topics correlated with concurrent courses in first year. For first-year students. Pre: consent of instructor.
- 607 INTRODUCTION TO HUMAN BEHAVIOR (2) I** Char, Staff
 Appreciation that man, including himself, is not only physical being, but also social and psychological entity. Genetic, biological, familial, social forces and endopsychic forces that shape the personality of man. Instruction coordinated with concurrent courses in first year. For first-year students. Pre: consent of instructor.
- 611 (610) PATIENT-INTERVIEWING AND PHYSICAL EXAMINATION (3) I** Nugent, Staff
 Instruction through student participation, with clinical tutors, and use of patients in clinics and hospitals with emphasis on modern techniques, and pathophysiologic basis of symptoms and signs. For second-year students. Pre: consent of instructor.

- 612 CLINICAL JUDGMENT (3) II** **Nugent, Staff**
Clinical problem-solving beginning with collection of data; analysis of symptoms, signs, laboratory data and previous therapy; concluding with pathogenetic formulation. Instruction coordinated with concurrent courses. For second-year students. Pre: consent of instructor.
- 615 HUMAN GROWTH AND DEVELOPMENT (1) I** **Char, Noyes**
Personality development, learning, socialization, aging, major events in human life cycle, considered in relation to developmental anatomy, physiology, endocrinology, genetics, biochemistry. For second-year students. Pre: consent of instructor.
- 616 PSYCHOPATHOLOGY (1) II** **Char, Staff**
Survey of psychiatric disorders. Emphasis on genesis, psychodynamics and management of various disorders. Instruction coordinated with concurrent courses in medicine, pathology, pharmacology. For second-year students. Pre: consent of instructor.
- 649-650 CLINICAL LABORATORY EXAMINATIONS (2-2) I, II** **Jim, Staff**
Indications and significance of, clinical laboratory examinations. Instruction coordinated with concurrent courses in microbiology, pathology, pharmacology, medicine. Given jointly with department of pathology (See Path 649-650). For second-year students. Pre: consent of instructor.
- 671-672 CLINICAL CONFERENCE (1) I, II** **Mamiya, Noyes, Blaisdell, Staff**
Patient-cases and discussion in depth by specialists, including visiting professors and non-clinical scientists, with emphasis on multi-factorial determinants of illness, and importance of quantitation in diagnostic and therapeutic evaluation. For second-year students, hospital housestaff, faculty. Pre: consent of instructor.
- 681 CROSS-CULTURAL PSYCHIATRY (1)** **Levy, Collis, Pope**
Elective seminar in cultural determinants of human behavior and illness. For second-year students. Pre: consent of instructor.
- 683 PSYCHOSOMATIC MEDICINE (1)** **Pope, Neilson**
Elective clinic and seminar on coordinated clinical, psychological, physiological approaches to certain human illnesses, such as asthma, peptic ulcer, hypertension. For second-year students. Pre: consent of instructor.
- 699 RESEARCH (arr.)** **Staff**
Independent study in clinical specialties. For first and second-year students. Pre: consent of instructor.

Microbiology (Micro)

(Affiliate from the College of Arts and Sciences)

Professors **BENEDICT, BUSHNELL, CHU, FOLSOME, HERZBERG, LOH**; Associate Professors **BERGER, CONTOIS, GUNDERSEN**; Assistant Professors **HALL, SIEGEL**

*351 is prerequisite to all more advanced courses.
(See course descriptions under Arts and Sciences—Microbiology)*

- 130 GENERAL BACTERIOLOGY (3) I, II** **Chu**
- 140 MICROBIOLOGY LABORATORY (1) I (1 Lb)** **Herzberg**
- 351 PROCARYOTIC BIOLOGY (3) I, II (2 L, 2 Lb)** **Contois, Berger**
- 431 MICROBIAL BIOCHEMISTRY AND FUNCTION (4) I (3 L, 2 Lb)** **Berger, Hall**

461	IMMUNOLOGY (4) I (3 L, 2 Lb)	Benedict
463	MICROBIOLOGY OF THE PATHOGENS (4) II (3 L, 2 Lb)	Herzberg
475	MICROBIAL GENETICS (4) II (2 L, 2 Lb)	Folsome
480	MICROBIAL ECOLOGY (4) I (2 L, 2 Lb)	Gundersen
490	VIROLOGY (4) II (2 L, 2 Lb)	Loh
499	MICROBIOLOGICAL PROBLEMS (arr.) I, II	Staff
606	MEDICAL MICROBIOLOGY (5) I	Bushnell
625	IMMUNOCHEMISTRY (4) II (3 L, 2 Lb)	Benedict
632	ADVANCED MICROBIAL PHYSIOLOGY (3) II (2 L, 2 Lb)	Hall
642	MARINE MICROBIOLOGY (4) II (3 L, 2 Lb)	Gundersen
655	VIROLOGY (2) I (2 L)	Loh
657	VIRUS LABORATORY (3) I (2 Lb)	Loh
661	ULTRASTRUCTURE OF MICROORGANISMS (3) I (3 L)	Hohl
665	ELECTRON MICROSCOPY (2) II (2 Lb)	Hohl
671	MICROBIAL GENETICS (4) I (4 L)	Folsome
681	HOST-PARASITE RELATIONSHIPS (3) I (3 L)	Herzberg
690	SEMINAR (1) I, II	Folsome, Benedict
699	DIRECTED RESEARCH (arr.) I, II	Staff
795	SPECIAL TOPICS IN MICROBIOLOGY (arr.) I, II	
800	THESIS RESEARCH (arr.)	Staff

Section of Obstetrics and Gynecology (Ob-Gyn)

Professor NOYES; Associate Clinical Professors AUSTIN, MCCORRISTON, NISHIJIMA, SAKIMOTO, TERADA, TOM, WONG; Assistant Clinical Professors BERGER, GOTO, HUNTER, KRIEGER, MATSUOKA, MCCALLIN, NAKAGAWA, NAKATA, NATOLI, OGAMI, OSHIRO, ROGERS, SAIKI; Clinical Instructors ANSBACHER (Okinawa), HINDLE, LEE, LI, SETO, TSEU

The section of obstetrics and gynecology provides teaching in these disciplines for the introductory courses given by the department of medicine and assists hospitals and others in continuing medical education.

Pathology (Path)

Professors NISHIMURA, SKINSNES; Associate Professor HABER, HOKAMA, ROUNSEVILLE (Okinawa); Assistant Professor UEMURA; Associate Clinical Professors LYND, STEMMER-MANN, WILL; Assistant Clinical Professors GORDON, KELLEY; Clinical Instructor SPRAGUE

Instruction in pathology is given to second-year medical students. The emphasis in the first semester will be general pathology which underscores impor-

tant biologic events leading to reaction patterns of injury resulting from a variety of exogenous and endogenous etiologic factors. Systemic pathology, which is primarily concerned with the classification, causation and clinical correlation of diseases, will be taught in the second semester.

Elective courses in immunopathology and research are offered for advanced students and residents (M.D.) in specialty training (Pathology).

- 601 (600) HUMAN PATHOLOGY (4) I** **Nishimura**
General pathology. Biological response to injury from internal and external causes.
- 602 (601) HUMAN PATHOLOGY (4) II** **Nishimura**
Systemic pathology. Classification and clinical pathologic correlation of diseases.
- 649-650 LABORATORY DIAGNOSIS (2) I, II** **Haber, Uemura**
Lectures, demonstrations, practical work and theory in clinical pathology. (Given jointly with Med 650.)
- 670 IMMUNOPATHOLOGY SEMINAR (1) II** **Hokama**
Autoimmune diseases and transplantation immunity. Pre: Micro 361 or 625 and Path 600.
- 699 DIRECTED RESEARCH I, II**
Pre: consent of instructor.
- 700 RESEARCH IN PATHOLOGY RESIDENCY PROGRAM (arr.) I, II**
Selected topics. Pre: M.D. degree and residency in pathology in affiliated hospital.

Medical Technology Division

Assistant Professor **BHAGAVAN**; Instructors **KAGAWA, SONODA, TAYLOR, WULFF**

Two programs leading to a B.S. degree in medical technology are presently offered. *Option I*, open to students who enrolled prior to September 1967, consists of three years of a prescribed course on campus, plus one calendar year of internship in an affiliated hospital laboratory for which 28 credits is given, with the degree granted following completion of the interning year. *Option II*, required of students who enrolled as freshmen in September 1967 or after, offers four academic years on campus with the degree granted *before* internship. Internship, necessary for registration with the National Registry of Medical Technologists, follows the fourth year in *Option II* and may be taken in any approved school of medical technology but carries no University of Hawaii credit. Completion of either the 3 + 1 or the 4 + 1 program allows the student to take the examination for certification as a Registered Medical Technologist given by the National Registry of the American Society of Clinical Pathologists.

The first two years of either option are spent in the College of Arts and Sciences but since scheduling of science courses in sequence is most important, a prospective student should designate his major as Med Tech as soon as possible. The School of Medicine administers the last two years and grants the degree.

Students who registered as freshmen before Fall '67 have a choice of either *Option I* or *Option II*.

Admission and Degree Requirements

Application for admission to the Medical Technology program in the School of Medicine should be made during the early part of the second semester of the sophomore year. The student should have completed 63 to 66 credits including the following courses:

	CREDITS
English Composition	6
Speech	3
Literature	6
History of Civilization	6
Humanities elective	3
Social Science electives	6
Math (pre-calculus)	4
General Chemistry and Qual. Analysis	9
Organic Chemistry	4
General Microbiology	3
Biology	4 or 8
Introduction to Medical Technology	4
Quant Analysis	4

To be entitled to a degree of bachelor of science in medical technology, the student must:

1. Complete the course of subjects specified in the curriculum of Medical Technology, including 31 hours of the major in Option II and 39 in Option I;
2. offer at least 60 hours of credit in other than introductory courses, meeting the University core requirement;
3. acquire an aggregate of 130 semester hours of credit;
4. earn at least a 2.0 grade point ratio (C average) for all registered courses and a grade of C or higher in each major course;
5. submit an application for graduation to the office of admissions and records during the semester preceding the awarding of the degree.

OPTION I

FRESHMAN YEAR

FIRST SEMESTER		SECOND SEMESTER	
	CREDITS		CREDITS
Chemistry 113-115	4	Chemistry 114-116	4
History 151	3	Hist 152	3
Eng 101	3	Eng 102	3
Math 134 or 135	4	Speech 145	3
		Electives	3
Total	14	Total	16

An accelerated one semester course in chemistry is offered for especially well prepared students.

SOPHOMORE YEAR

Bio 220	5	Micro 351	3
Eng 151 or 153	3	Eng 152 or 154	3
MT 151	2	MT 152	2
Chem 133-134	4	Chem 241-242	4
Electives	4	Electives	6
Total	18	Total	18

JUNIOR YEAR

Micro 361	4	Micro 362	4
Physiol 301	4	Biochem 441	4
Electives	10	Zoo 410	3
		Zoo 425 or MT 464	3
		Electives	4
Total	18	Total	18

SENIOR YEAR

Summer Session	Cr.		
MT 466 Internship	4		
First Semester	Cr.	Second Semester	Cr.
MT 467 Internship	12	MT 468 Internship	12

OPTION II

FRESHMAN YEAR

FIRST SEMESTER		SECOND SEMESTER	
	CREDITS		CREDITS
Chemistry 113-115	4	Chemistry 114-116	4
History 151	3	Hist 152	3
Eng 101	3	Eng 102	3
Math 134	4	Speech 145	3
		Electives	3
Total	14	Total	16

SOPHOMORE YEAR

Bio 220	5	Bio 250	4
Eng 151 or other lit	3	Eng 152	3
MT 151	2	MT 152	2
Electives	6	Chem 241-242	4
		Electives	3
Total	16	Total	16

Electives: 3 credits in Humanities; 6 credits in Soc. Sciences.

JUNIOR YEAR

Physiology 301	4	Biochemistry	4
Micro 351	3	Physics 100	4
Chem 133-134	4	Zoo 410	3
Electives	6	Electives	6
Total	17	Total	17

SENIOR YEAR

Micro 361	4	Micro 362	4
MT 451 Hemat	3	MT 464 Immunohemat	3
MT 471-473 Clin Lab	4	MT 472-474 Clin Lab	4
Electives	6	MT 458 Clin Lab Inst	2
		Electives	3
	—		—
Total	17	Total	16

Medical Technology (MT)

- 151-152 INTRODUCTION TO MEDICAL TECHNOLOGY (2-2) I, II** **Wulff**
Designed to acquaint student with relationship of medical technology to medical field.
- 451 (350) BASIC HEMATOLOGY (3) I** **Ho, Kagawa**
Fundamental study of blood in normal and pathological states: formation, development, classification of blood cells. Pre: Micro 351, Physiol 301.
- 458 (367) CLINICAL LABORATORY INSTRUMENTS (2)** **Piette**
Principles of spectrophotometry, optics, electronic measurement. Pre: college physics, MT 471-473, concurrent registration in 472-474.
- 464 (364) IMMUNOHEMATOLOGY (3) II** **Taylor**
Antigen-antibody relationships in human blood, study of blood groups, clinical problems in transfusion. Pre: Micro 361 or consent of instructor.
- 466, 467, 468 (266, 267, 268) INTERNSHIP (4-12-12) SS, I, II** **Staff**
Internship in affiliated hospital. Pre: three years of prescribed courses and at least one semester on U. H. campus.
- 471-472 (371-372) THE CLINICAL LABORATORY, LECTURE (2-2) I, II** **Bhagavan**
- 473-474 (371-372) THE CLINICAL LABORATORY, LAB. (2-2) I, II** **Sonoda**
Pathological processes involved in organic and infectious diseases and laboratory techniques used in their clinical diagnosis and measurement. Pre: Physiol 301, Basic Biochem.
- 499 (399) DIRECTED READING AND RESEARCH (arr.)** **Staff**

Section of Pediatrics

Clinical Professor MARSHALL; Associate Professor WIESE (Okinawa); Associate Clinical Professors CHOY, CHUN, ECKLES, EWING, HASEGAWA, KOBAYASHI, KOMETANI, NANCE, PEYTON, RICHARDSON, SEXTON, SIA, WAXMAN; Assistant Clinical Professors BASS, BASSETT, GRIFFIN, HAGINO, HO, NAKAMURA, OREN, REDDY, ROTH, TOTTORI, WATT; Clinical Instructors ALLEN (Okinawa), BINTLIFF, CASHMAN, CHING, CHOAN, KAGIHARA, KAYE, MERTZ, NAGAO, NAKATA, NATINO-BADUA, NEKONISHI, SOO, STEPHENSON, TOTTORI, WONG, YAMAOKA, YEE, YIM

The section of pediatrics provides teaching in pediatrics, particularly for the introductory courses given by the department of medicine, and assists hospitals and others in continuing medical and paramedical education.

Pharmacology (Pharm)

Professors CUTTING, HALEY, NORTON; Clinical Professor ANDERSON; Associate Professors BASLOW, CASARETT, FURUSAWA, SHIBATA; Associate Pharmacologists CHOU, LENNEY, MATSUI; Assistant Professors LI, PALMER; Assistant Pharmacologist YODER; Assistant Clinical Professors LEE, ROBERTS, TABRAH; Junior Pharmacologists KASHIWAGI, KOMESU, READ; Clinical Instructor REICHERT.

The department of pharmacology offers the requisite work for medical students, and also both the M.S. and Ph.D. degrees.

Intended candidates for the M.S. or Ph.D. in pharmacology must have or acquire adequate preparation in biology, chemistry, physics and mathematics. The course work required includes basic courses in related sciences, or demonstrated competence in these fields, plus other course work adapted to the needs of the particular student as determined by the major professor and the thesis committee. Most students will be expected to take graduate courses in biochemistry, microbiology, and genetics. Courses in pathology and clinical medicine will be recommended for some students.

- | | |
|--|---------------------|
| 600 PHARMACOLOGY: ACTIONS AND USES OF DRUGS (3) II | Cutting |
| Systematic consideration of the history, chemistry, actions, dangers, fates and uses of major classes of drugs in medicine. | |
| 610 PHARMACOLOGY OF MARINE TOXINS (1) II | Baslow |
| 613-614 SEMINAR IN PHARMACOLOGY (1) I, II | Lenney |
| Reporting and discussion of current research in pharmacology. | |
| 615 CLINICAL TOXICOLOGY (2) I | Haley |
| Systematic consideration of side reactions of therapeutic agents and other chemicals and toxins, with emphasis on symptomatology and antidotal procedures. (Alt. yrs.) | |
| 616 STRUCTURE ACTION RELATIONSHIPS (3) II | Haley |
| Study of relationship between chemical structure and biological activity with emphasis on chemical group modifications which either increase or decrease biological activity or toxicity. (Alt. yrs.) | |
| 617 BIOASSAY (4) I | Haley, Staff |
| Study of biological methods utilized in estimation of endogenous and exogenous drugs and chemicals. Emphasis placed on extraction of normal body secretions, neurohormones, etc., as well as potency comparisons between synthetic chemicals with similar actions on given biological systems. Pre: 600. (Alt. yrs.) | |
| 619 EXPERIMENTAL PHARMACODYNAMICS (3) I | Haley, Staff |
| Study of procedures using isolated organs or intact preparations, utilized in evaluation of biological properties of new drugs or chemicals. Included will be estimations of potency, effectiveness and sites of action. Pre: 600. (Alt. yrs.) | |
| 699 DIRECTED RESEARCH (arr.) I, II | Staff |
| 800 THESIS RESEARCH (arr.) I, II | Staff |

Physiology (Physl)

Professors HONG, ROGERS, WHITTOV; Assistant Professors HAMPTON, MOORE, RAYNER; Junior Physiologists FINE, MACMAHON, SETLIFF; Assistants in Physiology WALSH, J. WATSON, R. WATSON; Research Associates HAYASHI, SZEKERCZES; Clinical Professor BATKIN; Assistant Clinical Professor POPE.

The department of physiology offers undergraduate courses as well as the requisite work for medical students and both the M.S. and Ph.D. degrees. Intended candidates for the M.S. or Ph.D. must have or acquire adequate preparation in biology, chemistry, physics, and mathematics. The course work required includes basic courses in related sciences, or demonstrated competence in these fields, plus other course work adapted to the needs of the particular student as determined by the major professor and the thesis committee. Most students will be expected to take graduate courses in pharmacology, biochemistry, microbiology, and genetics.

- | | |
|---|--------------|
| 89 (99) INTRODUCTION TO HUMAN PHYSIOLOGY (5) I (3 L, 2 Lb) | Staff |
| Primarily for associate degree candidates in the School of Nursing. | |
| 301 ELEMENTS OF HUMAN PHYSIOLOGY (4) I (3 L, 1 Lb) | Staff |
| Pre: 1 year of introductory zoology or biology, and introductory general and organic chemistry. | |
| 601-602 MEDICAL PHYSIOLOGY (3-3) Yr. (2 L, 1 Lb) | Staff |
| Comprehensive course for medical students and other graduate students. Pre: admission to medical school or consent of instructor. | |
| 603-604 SEMINAR IN PHYSIOLOGY (1-1) Yr. | Staff |
| Discussion of current research in one or more areas. | |
| 699 DIRECTED RESEARCH (arr.) I, II | Staff |
| 800 THESIS RESEARCH (arr.) I, II | Staff |

Section of Psychiatry

Professor CHAR; Assistant Clinical Professors CODY, COTTINGTON, HAERTIG, HANNUM, LERNER, LUM, MERTZ, POPE; Clinical Instructors COLLIS, DE TATA, ELIASHOF, HOWELL, MOULON, ROAT, SAKAMAKI, SCHRAMEL.

The section of psychiatry provides instruction and carries on research in the field, including participation in the introductory courses in the department of medicine and in house officer training.

Public Health (PH)

(Affiliate from the School of Public Health)

Professors LEE, BURBANK, CHAR, CHUNG, CONNOR, GROSSMAN, SACHS, SCHWARTZ, WORTH; Associate Professors BROWN, CLARK, DAVENPORT, FURUNO, MANOHARAN, MILHAM, MYTINGER, PARK, VOULGAROPOULOS, WOLFF; Assistant Professors BELL, HAYAKAWA, MARKHAM, RICHIE, SUEHIRO, YOUNG.

The School of Public Health provides instruction to students in the Medical School and serves the academic function of a department of public health for the Medical School. See *Bulletin of the School of Medicine* for course listings and courses required for medical students.

The following courses are part of the required curriculum for medical students:

696 (655)	PRINCIPLES OF COMMUNITY MEDICINE I (1) I	Worth, Staff
697 (656)	PRINCIPLES OF COMMUNITY MEDICINE II (1) II	Worth, Staff
786 (658)	PREVENTIVE MEDICINE (1) II	Worth, Staff

Section of Surgery

Clinical Professor PANG; Associate Professors HONG (Okinawa), KOKAME, MAMIYA, PEARSON (Okinawa); Associate Clinical Professors BATKIN, HILL, LARSEN, McDOWELL, PINKERTON, WAITE, WATSON, WHELAN; Assistant Clinical Professors FREEMAN, GORDON, GULLEDGE, HATA, IRITANI, JIM, KOIKE, LAU, LEE, LOWREY, LUM, McDOWELL, MOOKINI, PANG, PEYTON, SCULLY, SHIM, STRAEHLEY; Clinical Instructors BERGMANIS, BRAULT, CHANG, FAULKNER, FECHTMAN, FERNANDEZ, GOEBERT, HATTORI, HUGHES (Okinawa), JIM, KISTNER, MA, MASON, MORI, ODA, OMURA, OSHIRO, PANG, RICHARDSON, SIMMONS, SMITH, SPRAGUE, TOM, WONG.

The section of surgery provides teaching in surgery and the surgical specialties for the introductory courses in the department of medicine. Also, it provides surgical representation on medical school committees, facilitates research in surgery by the clinical faculty, and assists hospitals and others in programs of continuing medical and paramedical education.

Section of Tropical Medicine

Professor DESOWITZ, HALSTEAD; Clinical Professor ROSEN; Assistant Professors DIWAN, YUEN; Clinical Instructor HATHAWAY.

The section of tropical medicine provides instruction and carries on research in the field, including participation in the introductory courses in the department of medicine.

SCHOOL OF NURSING

The School of Nursing offers programs to prepare students for professional nursing, technical nursing, and dental hygiene. The baccalaureate program in nursing began in September 1952 and the technical nursing program was founded in September 1964. The present two-year program in dental hygiene was inaugurated under the School of Nursing in 1961. The nursing programs are accredited by the Hawaii State Board of Nursing and the National League for Nursing. The dental hygiene program has been granted full approval by the Council on Dental Education of the American Dental Association. A bachelor of science degree is granted for completion of the undergraduate program in professional nursing. An associate of science degree is granted for work completed in the technical nurse program and a certificate is granted for the two-year program in dental hygiene.

A program leading to the master of science in nursing prepares graduates of accredited baccalaureate nursing programs for specialization in mental health-psychiatric nursing, community health nursing, and administration of organized nursing services. (See *Graduate Bulletin* for further information.)

Admission and Degree Requirements

Applicants for all programs must meet University admission requirements. Further selection is made on the basis of scores on selected tests, quality of high school and/or previous college work and references. Specific requirements for the bachelor of science degree in nursing, associate of science degree in nursing and certificate in dental hygiene are listed below.

BACHELOR OF SCIENCE DEGREE IN NURSING. Complete curriculum requirements and earn at least 140 credits with a grade-point average of at least 2.0 (C) and a grade of C or higher in each major course.

ASSOCIATE OF SCIENCE DEGREE IN NURSING. Complete curriculum requirements and earn at least 64 credits with a grade-point ratio of at least 2.0 and C or higher in each major course.

CERTIFICATE IN DENTAL HYGIENE. Complete curriculum requirements and earn at least 70 credits with a grade-point ratio of 2.0.

Academic Advising

The instructional staff of the School of Nursing and the personnel in the office of student services, Webster 415, are readily available for students to talk about any matter impinging on educational progress.

Although faculty in each of the departments have the primary responsibility for advising students, the actual system varies with each department. In the department of technical nursing each faculty advises those students assigned to her laboratory section at least twice yearly, or as necessary. Dental hygiene freshmen are advised at least twice yearly and sophomores have at least six advisory

conferences yearly with faculty. Each faculty member in the department of professional nursing is assigned four to eight students for the entire period that the student is in the program. As the student progresses from one course to another, faculty responsible for teaching the course also provide advising in conjunction with specific course requirements. Should a student not be able to contact her departmental adviser or because of the specific nature of her problem, she may go to the office of student services, Webster 415.

Professional Nursing Curriculum Leading to Bachelor of Science in Nursing

The baccalaureate program in nursing offers a foundation in the liberal arts with a major in professional nursing. Its aims are to prepare students for beginning positions in all fields of nursing and to provide a sound basis for graduate study in nursing.

Pre-nursing students enroll in the College of Arts and Sciences and are admitted to the professional nursing curriculum at the end of the sophomore year upon completion of a minimum of 60 credits in the liberal arts, including the following:

General Requirements

English 101-102, or 105, 251-252 or 253-254, or 255-256.....	12	
Speech 145	3	
History 151-152, or 161-162 or 351-352.....	6	
Mathematics or Philosophy 210.....	3	
HPE—one activity course.....	1	25

Pre-Nursing Requirements

Humanities—one course from either sub-group.....	3	
I. Phil 100, 200	II. Art 101	
Rel 150, 151	Music 160	
Social Sciences—all courses in group I; one semester course from group II....	12	
I. Psych 100 or 111-112	II. Econ 150, 151	
Psych 320	Geog 102, 151	
Soc 151	Pol Sci 110	
Natural Sciences—all courses in group I.....	20	
I. Chem 113-114, 117	II. Physics 160-161	
Micro 130, 140		
Zool 202		
Biol 220		

35

60

The upper division curriculum in professional nursing consists of five semesters of sequential nursing courses of increasing complexity, and continuing requisite and elective courses in Arts and Sciences. Students accepted into the program will complete upper division requirements as described in the next section.

Upper Division Requirements

At least 15 credits of non-introductory courses will be selected from the area requirements (I, II, III) listed below on the bases of relevance to the nursing major and the individual interests and long-range planning needs of students. Additional courses may be selected as electives (10 units). All students will complete requirements listed under IV Medical Science and V Nursing.

Area Requirements

I. HUMANITIES	3-10	
Courses selected from: English, drama, philosophy, religion, art, music or languages in accordance with goals and interests of student.		
II. NATURAL SCIENCES	7-10	
Courses selected from: biology, botany, chemistry, foods & nutrition, geology, physics, oceanography, genetics, microbiology, physiology, zoology. Required: Foods & Nutrition 385 (3) Physiology 301 (4)		
III. SOCIAL SCIENCES	3-10	
Courses selected from: anthropology, psychology, sociology, economics, geography, political science. Psych 113 or other equivalent course		
		15
IV. MEDICAL SCIENCE	9	
Medical Science 301-302 (3-3)		
Medical Science 401 (3)		
		9
V. NURSING	46	
Nursing 305-306 (6-6)		
Nursing 415-416 (8-8)		
Nursing 425 (12)		
Nursing 450 (3)		
Nursing 451 (3)		
		46
VI. ELECTIVES		10
		—

80

Program for Registered Nurses

Registered nurses who have completed the general and pre-nursing requirements listed above with a grade-point average of 2.0 or better may enroll in the professional nurse program. No advanced standing credit will be granted for nursing courses completed in a diploma or associate degree program. However, the University of Hawaii, in common with many other universities, allows students to take the regular University department examinations in courses in which it is deemed the student has had equivalent training. If successful, credit is granted for the course. (See "Credit by Examination.")

Technical Nursing Program Leading to an Associate of Science Degree in Nursing

This program prepares nurses for staff positions in hospitals, clinics, doctors' offices, and private duty where supervision is provided. Completion of the curriculum requires four academic semesters. The graduate is granted an associate of science degree in nursing by the University and is eligible to take the state examination for licensure as a registered nurse.

FIRST YEAR			
FIRST SEMESTER	CREDITS	SECOND SEMESTER	CREDITS
Microbiology 130	3	English 101	3
Physiology 89	5	Psychology 320	3
Psychology 100	3	Sociology 151	3
Technical Nursing 53 (Basic Nursing)	5	Technical Nursing 54 (Nursing Science)	7
Total	16	Total	16
SECOND YEAR			
THIRD SEMESTER	CREDITS	FOURTH SEMESTER	CREDITS
History	3	History	3
Speech 145	3	Technical Nursing 56 (Clinical Nursing)	8
Technical Nursing 55 (Nursing Science)	7	Technical Nursing 58 (Nursing Trends)	2
Elective	3	Elective	3
Total	16	Total	16

Two-Year Program in Dental Hygiene Leading to a Certificate in Dental Hygiene

The program is planned to provide for the education and training required of the dental hygienist as a member of the dental health team for the rendering of professional preventive dental hygiene services and for educating the public in oral health.

FIRST YEAR			
FIRST SEMESTER	CREDITS	SECOND SEMESTER	CREDITS
Chemistry 113	3	Chemistry 141	3
Chemistry 115	1	Chemistry 142	1
Dental Hygiene 121	2	Dental Hygiene 140	1
Dental Hygiene 131	3	Dental Hygiene 150	1
English 101	3	Dental Hygiene 166	1
Physiology 89	5	English 102	3
Total	17	Home Economics 241	3
		Speech 145	3
		Total	16

SUMMER SESSION*

	CREDITS
HPE 190	1
Psychology 100 or Sociology 151	3
	4

SECOND YEAR

FIRST SEMESTER	CREDITS	SECOND SEMESTER	CREDITS
Microbiology 130	3	Dental Hygiene 270	3
Microbiology 140	1	Dental Hygiene 272	3
Dental Hygiene 251	2	Dental Hygiene 280	5
Dental Hygiene 266	2	Dental Hygiene 282	2
Dental Hygiene 269	2	Psychology 100 or	
Dental Hygiene 279	5	Sociology 151	3
Dental Hygiene 281	2		16
Total	17	Total	

Dental Hygiene (DH)

Associate Professors AH MOO, NOBUHARA (Supervising Dentists); Assistant Professor KOGA; Instructors FAUBION, LEE

121 and 131 prerequisite to all dental hygiene courses numbered over 131, and subsequent dental hygiene courses must be taken in sequential offering, except by special permission.

121 (120) INTRODUCTION TO DENTAL AND ORAL HYGIENE (2) I

Orientation to profession; relationship of dental hygienist to dental hygiene and dentistry; role of hygienist in preventive dentistry.

131 (130) ORAL ANATOMY AND TOOTH MORPHOLOGY (3) (3 L, 2 Lb)

Anatomy of teeth, bones of skull; muscles of mastication, tongue, face, pharynx; glands of oral cavity; 5th, 7th cranial nerves, blood vessels of head and neck; laboratory procedures in drawing and carving of anterior and posterior teeth. Pre: Chem 113, 115, Physl 89 or concurrent registration.

140 INTRODUCTION TO DENTAL PROPHYLAXIS PROCEDURES AND TECHNIQUES (1) II (1 L, 2 Lb)

Clinical instruction and practice on manikin; clinical application of operative technical procedures of instrumentation, polishing, charting on selected patients.

150 INTRODUCTION TO DENTAL HISTOLOGY AND EMBRYOLOGY (1) II

Fundamentals of dental histology and embryology. Pre: Chem 113, 115, Physl 89.

166 (165) INTRODUCTION TO HUMAN PATHOLOGY (1) II

Ah Moo

Basic causes, progress and termination of disease. Emphasis on defensive mechanisms of body. Pre: 150 or concurrent registration.

251 (151) DENTAL HISTOLOGY AND EMBRYOLOGY (2) I (2 L, 1 Lb)

Formation, structure and function of enamel, dentin, cementum, pulp, periodontium, alveolar process, gingiva. Pre: 150.

* It is required that all students in dental hygiene complete the standard Red Cross First Aid course during the first year or by the end of that summer session; or complete HPE 323. A copy of the Red Cross certificate must be filed in the office of the chairman of the department of dental hygiene.

267 (166) ORAL PATHOLOGY (2) I**Ah Moo**

Study of oral diseases of concern to dental hygienist. Pre: 166, 251 or concurrent registration.

269-270 (169-170) SURVEY OF DENTISTRY (2-2) Yr.,
(269-2 I, 1 Lb) (270-3 I, 4-hr Lb)

Principles and procedures used in dentistry. Subject areas include dental materials, operative dentistry, prosthodontics, orthodontics, periodontics, pedodontics, endodontics, oral surgery, anesthesiology, practice management, dental assisting.

272 (171, 188) DENTAL HEALTH EDUCATION AND DENTAL PUBLIC HEALTH (3) II

Principles of learning, dental health education as related to office, school, public health; methods, materials and practice in teaching; laws, ethics and economics involved; theory and practice of preventive dentistry with emphasis upon community dental health.

279-280 (179-180) DENTAL HYGIENE AND PROPHYLAXIS

(5-5) Yr. (3 I, 13-hr Lb)

Ah Moo, Nobuhara

Clinical experience in dental prophylaxis; topical application of fluorides; medical-dental history; oral inspection; charting; roentgenographs; patient education; emergency first aid.

281 (181) DENTAL ROENTGENOGRAPHY (2) I (2 I, 2 Lb)

Lecture-laboratory course in study, technique, use and application of roentgen ray to dentistry.

282 (182) PHARMACOLOGY (2) II

Principles of pharmacology; considerations of drug groups; clinical therapeutics for dental hygienist.

Nursing (N)

Professors DUNLAP, OLSON; Associate Professors BERMOSK, GROSS, PATTERSON; Assistant Professors FANCHER, IVEY, LUM (on leave), KIM, LOVE, OZAKI, REIT, WHITE; Acting Assistant Professor SCHEINER; Instructors BRODD, DECRISTOFARO, IWATA, JUNG, KUBO, LETON, NAKATSUJI, SHIMAMOTO, TILTON, WILLIAMS

Registration is restricted to students preparing for nursing except by special permission.

305-306 BASIC NURSING SCIENCE (6-6) Yr.**Brodd, Kubo, Leton, Nakatsuji**

Overview of basic concepts and theoretical basis of nursing practice. Introduction to beginning skills in communication, interviewing, role identification, observation. Synthesis of knowledge from biological, natural, social sciences and humanities in understanding bio-psycho-social man and his pattern of daily living. Variety of community resources utilized for observation and laboratory study; 3 hours lecture and 9 hours laboratory weekly. Pre: acceptance in department of professional nursing or consent of instructor.

399 DIRECTED READING OR RESEARCH (arr.) I, II

Limited to seniors and juniors in nursing.

415-416 CLINICAL NURSING SCIENCE

(8-8) Yr.

DeCristofaro, Ivey, Iwata, Shimamoto, Williams

Orientation to analytical process for understanding, identification, solution of nursing problems; 4 hours lecture and 12 hours laboratory weekly. Pre: 305-306 or consent of instructor.

425 NURSING LEADERSHIP (12) I**Patterson**

Study of theoretical concepts basic to planning, organizing, implementing, evaluating nursing care of individual and groups of patients; understanding role of professional nurse in nursing and health teams; 4 hours lecture and 24 hours laboratory weekly. Pre: 415-416 and a statistics course or consent of instructor.

- 450 NURSING IN THE CHANGING SOCIAL ORDER (3) II** **Gross, Kim**
 Study of social foundations of nursing practice. Focus on historical base, inter-personal, moral and legal ramifications of formal and informal components of social systems in which nursing is practiced.
- 451 STUDY OF THE NURSING PROFESSION (3) I** **Gross, Kim**
 Study of institutional, associational, societal aspects of professional nursing practice with emphasis on rights and obligations of professional status within nursing, between professionals and in relation to community.
- 493-494 (394-395) SENIOR HONORS THESIS (2-2) Yr.**
 Preparation of research paper under individual faculty supervision. Required for graduation with honors. Pre: 399.
- 600-601 METHODS OF RESEARCH (3-3) Yr.** **Olson, White**
 Basic knowledge of research process including formulation of meaningful problems in nursing and appropriate experimental design. Pre: statistics.
- 602 ORIENTATION TO NURSING RESEARCH (3) II** **Olson, White**
 Critique of selected nursing research literature and evaluations of problem areas directed toward understanding concepts of systematic problem exploration and research contributions to nursing practice.
- 607 NURSING PRACTICE THEORY (3) I** **Dunlap**
 Study of selected conceptual models of nursing with particular emphasis on regulatory, adaptation, supplementary and complementary models.
- 610 CURRICULUM DEVELOPMENT (3) I, II** **Dunlap**
 Development of philosophy and objectives for educational programs, curriculum design, content, teaching methods, evaluation.
- 611 SOCIO-CULTURAL COMMUNITY INFLUENCES ON NURSING SERVICES (3) I, II** **Patterson, Scheiner**
 Identification and assessment of characteristics and values in community culture and patient populations related to goals, program development, organizational structure, policy in nursing.
- 615 INTERACTION PROCESSES (3) I, II** **Bermosk, Reit**
 Interviewing, interpersonal dynamics and communication theories related to nurse-patient interactions; process recording and process analysis. Lecture-discussion, student presentations, field work.
- 617 BIO-PHYSICAL CONCEPTS OF NURSING PRACTICE (3) I, II**
 In-depth, integrated science approach to analysis of selected physiological and patho-physiological states, with emphasis on their implications to nursing observation, diagnosis, care. (Not offered until Fall 1969.)
- 621 (620) CONCEPTS OF LEADERSHIP IN NURSING (3) I, II** **Olson, Patterson**
 Concepts of behavioral sciences applicable to nursing leadership, development of leadership skills, effect of leadership styles on group development.
- 625 ADVANCED NURSING CONCEPTS I (3) I, II**
 Exploration of advanced nursing concepts as they relate to:
 (A) Mental Health—Psychiatric Nursing: One to one relationship **Bermosk, Reit**
 therapy. Pre: 607, 615, 655.
 (B) Community Health Nursing. Pre: 607, 655, PH 653. **Gross**
 (C) Administration of Organized Nursing Services: legal, administrative **Patterson**
 and economic governmental influences as change agents. Pre: 607, 611, IS 600 or consent of instructor.

- 627 ADVANCED NURSING CONCEPTS II (3) I, II**
Continuation of Advanced Nursing Concepts I.
(A) Mental Health-Psychiatric Nursing: Group therapy and family therapy. Pre: 625, 656, Psych 600. **Bermosk, Reit**
(B) Community Health Nursing. Pre: 625. **Gross**
(C) Administration of Organized Nursing Services: personnel management in nursing, organizations, contracts. Pre: 625. **Patterson**
- 630 SEMINAR: ADVANCED PSYCHIATRIC NURSING CONCEPTS (2, 2) I, II** **Bermosk, Reit**
(3) Study of concepts in group and family therapy; community psychiatric: role, relationships, functions of mental health team and levels of prevention. (Not offered after Fall 1968.)
- 630 ADVANCED NURSING SEMINAR (2) II**
Seminar in a selected area:
(A) Mental Health-Psychiatric Nursing **Bermosk, Reit**
(B) Community Health Nursing **Gross**
(C) Administration of Organized Nursing Services. **Patterson**
Pre: fulfillment of prior requirements for major.
- 640 PRACTICUM: ADVANCED PSYCHIATRIC NURSING (2, 2) I, II** **Bermosk, Reit**
(3) Experience as leader, co-leader and observer in group psychotherapy and as therapist with one family. Active participation as member of selected mental health team. (Not offered after Fall 1968.)
- 640 ADVANCED NURSING PRACTICUM (4-6) II**
Concentrated study and field work in selected area:
(A) Mental Health-Psychiatric Nursing **Bermosk, Reit**
(B) Community Health Nursing **Gross**
(C) Administration of Organized Nursing Services **Patterson**
Pre: fulfillment of prior requirements for major.
- 655-656 ADVANCED PSYCHIATRIC CONCEPTS (3-3) Yr.** **Cody**
Theories of modern dynamic psychiatry related to personality development and functioning. Lecture, student presentations, participant observation. Principles of psychopathology, major mental illness and methods of treatment. Lecture, student presentations, participant observation.
- 699 DIRECTED STUDY OR RESEARCH (arr.) I, II** **Olson, White**
Directed study of problem related to nursing theory and practice. Open only to 2nd-year graduate students.

Medical Science (MS)

- 301-302 THE INDIVIDUAL AND ILLNESS (3-3) Yr.** **Fancher, Tilton**
Broad overview of major functional and structural changes which occur in health and illness; 2 hours lecture and 3 hours laboratory experience weekly.
- 401 (303) THE INDIVIDUAL AND ILLNESS (3) I** **Fancher, Tilton**
Broad overview of major functional and structural changes which occur in health and illness; lectures and seminars weekly. Pre: 302 or consent of instructor.

Summer Work Experience

During the summer an opportunity is provided for one or two second-year graduate students to participate in the Rural Community Mental Health Demonstration Project on the island of Maui as mental health-psychiatric nursing clinical specialists. Other opportunities for independent study and/or course work are provided in Honolulu as deemed appropriate for an area of concentration.

Technical Nursing (TN)

Associate Professor AIU; Assistant Professors BOYS, JOHNSON; Instructors BISHOP, BLANCHARD, BRIGGS, FITZGERALD, GOO, HORTON, MOELLER, SAVAGE, UPADHYA, WESTON

53 (108) BASIC NURSING (5) I

Basic principles of nursing and fundamental skills in patient care. Guided independent study and clinical experience; 3 hours lecture and 6 hours laboratory per week.

54-55 (109, 114) NURSING SCIENCE (7-7) Yr.

Man as a system of bio-psycho-social behaviors. Planning and giving nursing care in situations where there are disruptions of behavior in specific subsystems; 3 hours lecture and 12 hours laboratory per week in health agencies. Pre: 53 and Physl 89.

56 (119) CLINICAL NURSING (8) II

Synthesis and application of knowledge of behavioral subsystems of man in planning and giving nursing care. Opportunities provided in health agencies for students to identify patient problems and use appropriate nursing intervention; 4 hours lecture and 12 hours laboratory per week. Pre: 55.

58 (120) NURSING TRENDS (2) II

Aiu, Johnson

Development of nursing and future trends, including socio-economic influences. To be taken concurrently with 56; 2 hours lecture per week.

114 MATERNAL-CHILD NURSING (8) I

Study of child-bearing and child-rearing periods of life cycle utilizing family-centered approach. Guided clinical experience; 3 hours lecture and 15 hours laboratory per week. (Content incorporated into other nursing courses. Not offered after Fall 1968.)

119 MEDICAL-SURGICAL NURSING (8) II

Study of major health problems of adults in different age cycles. Guided clinical experience; 3 hours lecture and 15 hours laboratory per week. Pre: 114 or equivalent. (Content incorporated into other nursing courses. Not offered after Spring 1969.)

120 NURSING TRENDS (2) II

Aiu, Johnson

Development of nursing and future trends, including socio-economical influences; 2 hours lecture per week. Pre: 119. (Content incorporated into other nursing courses. Not offered after Spring 1969.)

SCHOOL OF PUBLIC HEALTH

The School of Public Health, one of 15 accredited schools of public health in the United States, received its accreditation in October 1965. It was established in July 1962 as a department of public health within the Graduate School (now Graduate Division). The School of Public Health is concerned primarily with maintaining and improving the general health of the community, and accordingly, offers graduate programs designed to prepare individuals who will (1) contribute to knowledge in the sciences pertinent to public health, or (2) actually perform public health services in the community, or (3) do both. Courses which give the student an appreciation of the broad field of public health are required, but each student's program may be tailored to emphasize an aspect of public health. Areas of emphasis include biostatistics, comprehensive health planning, environmental sanitation, epidemiology, health services administration, international health, maternal and child health, mental health, mental retardation, population and family planning studies, public health administration, public health education, public health engineering, public health laboratory and public health nutrition. All programs leading to degrees require the following courses: 600 Public Health Organization and Administration I, 601 Public Health Organization and Administration II, 655 Public Health Statistics, 681 Environmental Health I, and 663 Principles of Epidemiology.

Admission and Degree Requirements Leading to the Master of Public Health (M.P.H.) Degree

The M.P.H. degree program is designed to train persons for a variety of careers in the broad field of public health at local, state, national and international levels. In addition to meeting the admission requirements of the Graduate Division, candidates must have earned at least a bachelor's degree in a discipline appropriate to his chosen area of public health in which he plans to be employed. Depending on the candidate's background and interest, an appropriate course of study is prescribed, including courses in related fields, and incorporating the student's selected area of emphasis. Candidates must complete 30 or more semester hours, an essay or report, and suitable field training approved by his program committee. A student must pass a general diagnostic examination on public health before formal admission to candidacy and must pass a final seminar appearance near the completion of his program.

Traditionally, M.P.H. candidates have been largely physicians, dentists, veterinarians or other personnel in the health or related professions with at least three years of experience; for these, the program may be completed in 12 months. The M.P.H. program at the University of Hawaii's School of Public Health is open not only to such experienced personnel but also to students who hold at least a bachelor's degree with a minimum of 18 credit hours in the natural, social and behavioral sciences and who meet the academic requirements of the Graduate Division; for these, the program usually requires up to two years for completion. For further information, see the *Bulletin of the School of Public Health*.

Admission and Degree Requirements Leading to the Master of Science (M.S.) Degree

The M.S. program (Plan A and Plan B) is open to persons who meet the admission requirements of the Graduate Division, present at least a minimum of 18 credit hours in the natural, social and behavioral sciences in their undergraduate work, and desire research training in some specific aspect of public health (see above for areas of emphasis in public health). The Plan A program requires 30 or more semester hours including thesis research and, if appropriate, some form of appropriate short-term field work. Plan B requires 30 or more semester hours, an essay or report and field training approved by the program committee and a final seminar appearance. Both programs usually require two years to complete. For complete information, see the *Bulletin of the School of Public Health*.

Public Health (PH)

Professors BURBANK, CHAR, CHUNG, CONNOR, GROSSMAN, JENNEY, LEE, SACHS, SCHWARTZ, WORTH; Associate Professors BASSETT, BROWN, CLARK, DAVENPORT, FURUNO, MANOHARAN, MATSUMOTO, MYTINGER, PARK, RIZOS, VOULGARPOULOS, WOLFF; Assistant Professors BELL, HAYAKAWA, MARKHAM, RICHIE, SUEHIRO, YOUNG; Lecturers ALEXANDER, GOTO, KAU, TOKUYAMA, WIEDERHOLT
Associate Professor MASUDA

- 600 (601) PUBLIC HEALTH ORGANIZATION AND ADMINISTRATION I (2) I** Sachs
Development of modern health movement; current organizational patterns and programs at all levels, with special emphasis on public health functions in health education, maternal and child health, nutrition, nursing, mental health.
- 601 (602) PUBLIC HEALTH ORGANIZATION AND ADMINISTRATION II (2) I** Mytinger
Administrative problems associated with delivery of public health services at all levels; management techniques in program planning, staffing, budgeting, operating public health services; legal aspects of public health. Pre: 600.
- 602 (613) SEMINAR IN MEDICAL CARE ORGANIZATION (2) II** Mytinger
Survey of medical care field, including considerations of needs, costs and organization in medical care; comparative medical care systems.
- 603 ORGANIZATION OF MEDICAL CARE SYSTEMS (3) I** Mytinger
Introduction to organization of medical care services; need and demand for medical care and methods of financing medical care; national plans for medical care.
- 604 INSTITUTIONAL HEALTH CARE FACILITIES (3) II**
Principles and practices relating to organization and function of general and special hospitals and extended care facilities. Pre: concurrent enrollment in 605.
- 605 NON-INSTITUTIONAL HEALTH CARE FACILITIES (2) II** Mytinger
Organization and function of ambulatory care services including clinics, group practices, home care services, disease detection programs, laboratory and pharmaceutical services. Pre: concurrent enrollment in 604.
- 606 (612) ECONOMICS FOR HEALTH ADMINISTRATORS (3) II**
Economic analysis as basis for individual and social decision-making; supply and demand aspects of health and medical activities; health aspects of economic development. Pre: consent of instructor.

- 607 (609) SEMINAR IN HEALTH SERVICES ADMINISTRATION (1) I, II** **Mytinger**
Advanced study of current issues and problems. (1) Social and bureaucratic organization of medical care systems, (2) direction of health programs, (3) planning and integration of health services. May be repeated for credit. Pre: concurrent enrollment in courses pertinent to seminar emphasis.
- 611 INFORMATION SYSTEMS FOR COMPREHENSIVE HEALTH PLANNING (2) II** **Wiederholt, Staff**
Study of type and significance of methods used for measurement, analysis, evaluation of health conditions; measurement of need, demand, use; problem identification; prediction; anticipation and accommodation of change; evaluation of alternates; measurement and evaluation of results. Pre: consent of instructor.
- 612 HEALTH ASPECTS OF PHYSICAL PLANNING AND COMMUNITY DESIGN (2) II** **Wiederholt, Staff**
Environmental alteration and control; community response to environmental design; environmental stress; accident patterns; resources and environmental quality; housing; slums; urbanization; recreational spaces; aesthetics. Pre: consent of instructor.
- 613 SEMINAR IN COMPREHENSIVE HEALTH PLANNING (2) I, II** **Wiederholt**
Advanced study of health system as community sub-system. (1) Examination of goals and objectives, measurement and evaluation of results, priority determination in programming, policy formulation, resource allocation. (2) Examination of relationship of health system to total community systems. Pre: consent of instructor. May be repeated for credit.
- 616 (695) BASIC CONCEPTS OF INTERNATIONAL HEALTH (2) I, II** **Voulgaropoulos, Staff**
Brief description of international health and health issues. Three main areas are covered in broad perspective: (1) development of international health and agencies; (2) socio-cultural, economic, political determinants of health; (3) health problems of developing nations of Asia and Pacific.
- 617 COMPARATIVE PUBLIC HEALTH SYSTEMS (3) II** **Voulgaropoulos, Staff**
Review of health systems in selected countries and communities of Asia and Pacific. Emphasis on historical development and relevant socio-cultural, economic, political factors influencing development.
- 618 (696) SEMINAR IN INTERNATIONAL HEALTH (2) II** **Voulgaropoulos, Staff**
Studies in health programming with emphasis on practical aspects of developing health programs and projects. Students assigned to on-going international program for in-depth study and field training.
- 624 (660) COMMUNITY MENTAL HEALTH (2) II** **Schwartz**
Review of nature of community and individual mental health and of social and cultural forces influential in the incidence, prevention, or alleviation of community and individual mental illness.
- 629 (633) DENTAL PUBLIC HEALTH (2) II** **Kau**
Principles of conservation of oral structures and prevention of dental diseases through dental health programs. Pre: consent of instructor.
- 631 (630) PUBLIC HEALTH NUTRITION I (2) I** **Brown**
Principles of human nutrition underlying organization and administration of nutritional services in public health agencies.
- 632 (631) PUBLIC HEALTH NUTRITION II (2) II** **Brown**
Extension of 631. Organizing for and evaluating community nutrition programs.
- 633 (632) SEMINAR IN PUBLIC HEALTH NUTRITION (1) I, II** **Brown**
Specific nutrition problems in preventive medicine and public health. Pre: 631 or consent of instructor.
- 636 (670) MEDICAL ASPECTS OF DISABILITY (3) I**
Systematic presentation of medical conditions causing disability. Pre: consent of instructor. (Alt. yrs.)

- 642 (680) **MATERNAL AND CHILD HEALTH I (2) I** Connor
Basic principles and practices in maternal and child health programs.
- 643 (681) **MATERNAL AND CHILD HEALTH II (2) II** Furuno
Advanced course in maternal and child health. Pre: 642.
- 644 (682) **THE HANDICAPPED CHILD (2) II** Connor
Problems and programs relative to children with handicapping conditions.
- 645 (683) **PRINCIPLES OF COMPREHENSIVE MATERNITY CARE (1) I, II 55** Richie
Objectives and organization of comprehensive maternity care from public health viewpoint. Pre: 642 or consent of instructor.
- 646 (684) **HEALTH SERVICES FOR THE MENTALLY RETARDED (2) I** Furuno
Etiology, prevention, management, community programs for mentally retarded. Pre: consent of instructor.
- 649 **FAMILY PLANNING IN THEORY AND PRACTICE (2) I, II, 55** Jenney
Philosophy, techniques, organization of domestic and foreign family planning programs with concentration on practical problems of medical nature.
- 650 (685) **DEMOGRAPHY AND WORLD POPULATION PROBLEMS (3) II** Matsumoto
Introduction to study and description of human populations, including recent trends in world populations, analysis of projected trends. Pre: consent of instructor.
- 651 (687) **FERTILITY AND REPRODUCTION (2) II** Goto
Historical and contemporary methods of control of fertility. Pre: consent of instructor.
- 652 (686) **STAFF SEMINAR IN POPULATION DYNAMICS (2) I, II** Matsumoto
Ecological considerations of factors involved in human population dynamics. Pre: consent of instructor.
- 655 (620) **PUBLIC HEALTH STATISTICS (3) I** Park
Analysis, evaluation, interpretation, uses of statistics as related to public health problems. Pre: college algebra or equivalent or consent of instructor.
- 656 (621) **BIostatISTICS (3) I** Park
More theoretical treatment than 655 of elementary statistical concepts and methods of analysis of vital and health statistics. Pre: Math 134 or equivalent or consent of instructor.
- 657 (622) **STATISTICAL ANALYSIS (3) II** Chung
Extension of 655 and 656. Further treatment of estimation and tests of hypothesis, analysis of variance and covariance, multiple regression and correlation as related to public health problems. Pre: 655 or 656 or consent of instructor.
- 658 (625) **SEMINAR IN BIostatISTICS (1) I, II**
Discussion of specific problems in biostatistics as related to public health.
- 663 (651) **PRINCIPLES OF EPIDEMIOLOGY (2) II** Worth, Staff
Basic epidemiologic principles, methods, their application with particular reference to geographic patterns of diseases in Pacific area. Pre: 655 or 656.
- 664 (650) **INFECTIOUS DISEASES OF MAN IN THE PACIFIC AREA (3) I** Worth, Staff
Systematic presentation of existing knowledge of important infectious diseases in Pacific area. Emphasis on public health rather than clinical aspects of each disease.
- 665 (652) **PUBLIC HEALTH ASPECTS OF CHRONIC DISEASES (2) II** Bassett
Discussion of major chronic diseases and application of epidemiologic and administrative principles to chronic disease screening, case-finding, control programs. Pre: 600 and 663.
- 670 (665) **SOCIO-CULTURAL ASPECTS OF HEALTH AND ILLNESS (3) I, II** Wolff
Public health practices and orientation in socio-cultural perspective. Pre: consent of instructor.

- 673 (640) EDUCATIONAL APPROACH TO PUBLIC HEALTH (2) I** **Clark**
 Consideration of socio-cultural and psychological factors involved in health education of the public; role of health worker as agent of planned change; principles, concepts, methods of public health education; theoretical considerations in development of educational activity.
- 674 (642) COMMUNITY HEALTH EDUCATION LABORATORY I (2) I** **Hayakawa**
 Field laboratory experiences correlated with content of 673. Emphasis on community study and analysis, particular attention to diagnosis of community health education problems, opportunities.
- 675 (644) GROUP METHODS IN PUBLIC HEALTH (2) I** **Grossman**
 Consideration of theory and practice of group development as educational component of community public health efforts. Lectures on theory of group processes and relevance to public health. Laboratory on group process analysis and application of theory to group problem solving.
- 676 (645) HEALTH INFORMATION PROCESSES IN PUBLIC HEALTH—
 THEORY AND PRACTICE (2) II** **Clark**
 Philosophy and practices in health information aspects of public health program development; theoretical considerations from communication theory and research. Analysis and field testing of information media.
- 677 (646) EDUCATIONAL PROGRAM EVALUATION IN PUBLIC HEALTH (2) I** **Davenport**
 Unique aspects of educational evaluation in public health; consideration of evaluation as educational process; development of procedures for adequate educational data collection; function of evaluative efforts in program development.
- 678 (647) IN-SERVICE TRAINING AND STAFF DEVELOPMENT
 IN PUBLIC HEALTH (2) I** **Grossman**
 Theory and practice of training program development in health fields; analysis of training needs and methodologies; consideration of new approaches to manpower development in public health; design and testing of training materials and programs, special emphasis on public health and medical care settings.
- 681 (636) ENVIRONMENTAL HEALTH (2) I** **Burbank**
 Characteristics of disease associated with environmental factors, means of transmission, principles of control of such communicable disease.
- 682 (638) VECTOR CONTROL IN ENVIRONMENTAL HEALTH (3) II** **Masuda**
 Organization, administration, application of vector control methods in the control of diseases of environmental significance. Pre: 681 and consent of instructor.
- 683 OCCUPATIONAL HEALTH I (2) II** **Manoharan**
 Historical development of occupational health; occupational diseases and accidents; control of hazards in occupational environment; study of selected occupations and specific problems. Pre: consent of instructor.
- 700 (606) MANAGEMENT OF HEALTH SERVICES (3) II** **Mytinger**
 Principles and practices of managing health and medical institutions and programs. Pre: 603, 604 and 605.
- 701 (607) PLANNING AND CONTROL OF HEALTH SERVICES (4) I** **Mytinger, Wiederholt**
 Principles and methods of appraising, developing, allocating, financing, controlling medical resources, including area-wide and comprehensive planning. Pre: 700.
- 736 (692) SEMINAR ON HEALTH OF THE SCHOOL-AGE CHILD (2) II**
 Health needs of school-age child with particular emphasis on health problems which may present obstacles to learning process; role and responsibility of health personnel in working with these problems.
- 746 (623) TECHNIQUES IN DEMOGRAPHIC ANALYSIS (2) II** **Park**
 Statistical methods of analysis of population data including construction of life tables, adjustment of rates, evaluation of census and vital statistics data, migrations, population projections, survey methods. Concurrent registration in 650 recommended. Pre: 655 or 656.

- 747 (624) STATISTICAL METHODS IN EPIDEMIOLOGICAL RESEARCH (3) II** **Chung**
Introduction to design, data processing, analysis of epidemiological studies of non-infectious diseases with emphasis of computer applications.
- 763 (641) ADVANCED COMMUNITY HEALTH EDUCATION (2) II** **Grossman**
Program planning and development in community health education; theoretical considerations; current studies and research; educational dimensions of selected programs; local, state, national, international trends in planning and development.
- 764 (643) ADVANCED COMMUNITY HEALTH EDUCATION LABORATORY II (2) II** **Hayakawa, Davenport**
Field laboratory correlated with content of 763. Students participate in problem-solving activities related to planning, development, evaluation of educational components of community health action programs.
- 765 (648) ADVANCED SEMINAR IN SPECIAL PUBLIC HEALTH EDUCATION PROBLEMS (2) I**
Current research implications for educational activity in newly emerging fields of public health interest such as family planning, community mental health, accidental injury prevention, home care. Content varies with students' needs and interests and status of available literature. May be repeated for credit.
- 771 (637) ENVIRONMENTAL CONTROL OF DISEASE THROUGH FOOD PROTECTION (2) II** **Masuda**
Organization, administration, application of sanitary methods used to investigate and control food-borne diseases of environmental significance.
- 772 (675) ENVIRONMENTAL FACTORS IN HEALTH PROBLEMS (3) II** **Young**
Introduction to air pollution, occupational disease, industrial hygiene; particular reference to common industrial processes, presence and recognition of hazards associated with them, evaluation of hazards; methods of determination of effectiveness of control measures. Pre: 681 and consent of instructor.
- 773 MEASUREMENT OF ENVIRONMENTAL FACTORS (3) II** **Young**
Use of instrumentation for collection, identification and measurement of air pollutants and environmental hazards. Techniques for sampling and analysis of industrial atmosphere for dusts, mists, gases, fumes; interpretation of other physical measurements such as radiation, light, sound, noise. Pre: completion of or concurrent registration in 772 and consent of instructor.
- 791 (710) ADVANCED PUBLIC HEALTH PRACTICE IN (AREA OF EMPHASIS) (3) I, II, SS**
Observation, study and additional practical work in student's area of emphasis. (1) Biostatistics. (2) Environmental Sanitation. (3) Epidemiology. (4) Maternal and Child Health. (5) Public Health Administration. (6) Public Health Education. (7) Public Health Laboratory. (8) Public Health Nutrition. (9) Public Health Engineering. (10) Health Services Administration. (11) International Health. (12) Mental Health. (13) Mental Retardation. (14) Population and Family Planning Studies. (15) Comprehensive Health Planning. Pre: consent of instructor.
- 792 (711) SEMINAR IN PUBLIC HEALTH (1-5) I, II**
Advanced seminar in selected public health topics. (1) Biostatistics. (2) Environmental Sanitation. (3) Epidemiology. (4) Maternal and Child Health. (5) Public Health Administration. (6) Public Health Education. (7) Public Health Laboratory. (8) Public Health Nutrition. (9) Public Health Engineering. (10) Health Services Administration. (11) International Health. (12) Mental Health. (13) Mental Retardation. (14) Population and Family Planning Studies. (15) Comprehensive Health Planning. Pre: consent of instructor. May be repeated for credit.
- 799 (699) DIRECTED RESEARCH (arr.) I, II, SS**
Pre: consent of instructor.
- 800 THESIS RESEARCH (arr.) I, II, SS**
Pre: consent of instructor.

SCHOOL OF SOCIAL WORK

The School of Social Work offers a two-year graduate program leading to the M.S.W. degree. It also offers courses on the undergraduate and preprofessional levels for juniors and seniors. The School operates the Social Welfare Development Center (see "Research and Service Operations"). The School was started in 1940 and received accreditation from the Commission on Accreditation of the Council on Social Work Education in 1950. For specific information on admission and degree requirements write: School of Social Work, 1395 Lower Campus Rd., Honolulu, Hawaii 96822.

Social Work (SW)

Professors DELLIQUADRI, FISHER, JAMBOR, POLEMIS, SIKKEMA, SCHWARTZ, TAKASAKI; Associate Professors MERRITT, NAGOSHI, TAM; Assistant Professors ASATO, CAULFIELD, HARTMAN, HOOVER, ISHIMOTO, KUMABE, TAKASE, TYSON; Lecturers GOTANDA, MORRIS, UNO, SCHNACK, STEVENSON

GRADUATE PROGRAM

- | | | |
|----------------|--|-------------------------|
| 605 | SOCIAL CASEWORK (2) I
Introduction to basic principles and processes of social casework. | Hartman, Kumabe |
| 606 | SOCIAL CASEWORK (2) II
Continuation of 605. Emphasis upon diagnosis and skill in treatment of casework problems. Concurrent with 660-661. Pre: 605. | Hartman, Kumabe |
| 608 | SOCIAL GROUP WORK (2) I
Introduction to basic principles and processes of group work. | Fisher |
| 609 | SOCIAL GROUP WORK (2) II
Continuation of 608. Emphasis upon understanding individual in groups and skill in use of helping process. Concurrent with 660-661. Pre: 608. | Asato |
| 610-611 | HUMAN BEHAVIOR AND THE SOCIAL ENVIRONMENT (3-3) Yr.
Designed to provide synthesized understanding of physical, mental, emotional growth; due regard to social and cultural influences on individual development. | Walsh |
| 612 | GROUP WORK PROGRAM ACTIVITIES (1-1) Yr.
The program as tool in meeting individual and group needs. To be taken concurrently with 660-661. | Ishimoto |
| 615 | COMMUNITY ORGANIZATION (2) II
Methods and processes of community organization in social work. | Jambor |
| 626 | TREATMENT OF JUVENILE DELINQUENCY (2) II
Social work practice in relation to problems of juvenile delinquency. | |
| 627 | SOCIAL SERVICES (2) I
Income maintenance programs in public and private social welfare fields. | Sikkema |
| 628 | SOCIAL SERVICES (2) II
Social services (other than income maintenance) with emphasis on selected programs such as those in children's field, health field, corrections, etc. | Morris |
| 652 | SOCIAL RESEARCH AND STATISTICS (2) II
Problems and procedures in research related to social work. | Gotanda, Polemis |

- 653 LEGAL ASPECTS OF SOCIAL WORK (2) I** **Jambor**
Problems in judicial administration and substantive law in relation to human problems and social welfare programs.
- 656 SOCIAL WELFARE—ITS ORGANIZATION AND ADMINISTRATION (2) I**
Principles and problems of social agencies with respect to structure and operation.
- 660–661 SUPERVISED FIELD WORK (3–3) Yr.**
University units in public and private agencies. Concurrent with method course (casework, group work, or community organization). Limited to full-time students.
- 760–761 ADVANCED SUPERVISED FIELD WORK (4–4) Yr.**
To be taken concurrently with advanced course in social work method (casework, group work, or community organization). Limited to full-time students.
- 764 THE SOCIAL CASEWORKER AND THE USE OF GROUP IN TREATMENT (2) II**
Guidelines for caseworker with client groups. Consideration of similarities and differences in casework and group work methods. Pre: 3 semesters of work in School of Social Work leading to M.S.W. degree. Consent of instructor.
- 765 ADVANCED SOCIAL CASEWORK (2) I** **Walsh**
Case discussion of generic casework concepts as applied in work with emotionally disturbed individuals. Concurrent with 760.
- 766 SEMINAR IN SOCIAL CASEWORK (2) II** **Walsh**
Analysis and evaluation of case material contributed from student's experience and selected records.
- 767 CASEWORK WITH CHILDREN (2) I**
Casework concepts in care of children. Pre: 765, consent of instructor.
- 768 SEMINAR IN REHABILITATION (2) II**
Problems of rehabilitation and role of social work in this area.
- 770 ADVANCED SOCIAL GROUP WORK (2) I** **Fisher**
Analysis of use of volunteers in group work; their recruitment, selection, placement, training, supervision. Concurrent with 760.
- 771 SEMINAR IN SOCIAL GROUP WORK (2) I** **Fisher**
Analysis and evaluation of case material contributed from student's experience and selected records.
- 775 ADVANCED SOCIAL PSYCHIATRY (2) I** **Schnack**
Dynamics of behavior in neuroses and in functional and organic psychoses, with emphasis on current treatment processes.
- 777 COMMUNITY DEVELOPMENT AND SOCIAL WORK (2) II**
Organized efforts to improve conditions in community life; capacity for community integration and self-direction. Principles and practice of community development in newly developing countries; particular reference to contributions and relationships of social work to these programs.
- 780 ADMINISTRATIVE METHODS IN SOCIAL WORK (2) I** **Takasaki**
Administration of social welfare agencies with emphasis upon relationship between structure and function.
- 781 SEMINAR IN SOCIAL WELFARE
POLICY WORK (2) II** **DelliQuadri, Jambor, Schwartz**
Basic problems and policies in major fields of social welfare.
- 785 METHODS OF SUPERVISION IN SOCIAL WORK (2) II** **Fisher**
Supervision in social work as it relates to casework and group work. Open to agency workers who are potential or actual supervisors. Pre: consent of instructor.

- 787 CURRENT PRACTICE IN COMMUNITY ORGANIZATION (2) II**
 Consideration will be given to recent trends toward citizens' councils, health committees, and regional councils in both public and private welfare fields. Pre: 615.
- 790 CULTURAL FACTORS IN SOCIAL WORK PRACTICE (2) II** Merritt, Sikkema
 Significance of psychocultural factors in personality development and behavior. Pre: 611.
- 791 INTERNATIONAL SOCIAL WORK (2) II**
 Present trends in international social welfare programs of selected countries. Given occasionally.
- 798-799 SEMINAR IN RESEARCH (3-3) Yr.** Jambor, Merritt, Polemis, Uno
 Principles of objective fact-finding, primary and secondary sources of social data; preparation of a report or thesis.

UNDERGRADUATE PROGRAM

The School of Social Work offers the following courses on the undergraduate level (Pre: junior standing).

- 300 THE FIELD OF SOCIAL WORK (3) I** Ishimoto, Tam
 Non-professional orientation course intended to acquaint student with philosophy, scope, aims of social work. Pre: junior standing.
- 301 SOCIAL WELFARE AS A SOCIAL INSTITUTION (3) II** Ishimoto, Tam
 Purpose and philosophy governing establishment and operation of social welfare programs. Interrelationship of social, cultural, political, economic factors in development of social welfare. Open to seniors.
- 305 COMMUNITY PLANNING AND DEVELOPMENT IN SOCIAL WELFARE (3) II** Nagoshi
 Current trends in community welfare planning programs. Material from fields of social work, sociology, social psychology, others. Pre: 300-301 (interdisciplinary course).
- 315 SOCIAL WORK METHODS (3) I** Ishimoto
 Analysis of techniques most commonly used in social work practice. Casework, group work, community organization, administration, research. Open to seniors. Pre: 300-301.
- 320 SOCIAL WORK WITH JUVENILE AND ADULT OFFENDERS (3) I** Nagoshi
 Study of social welfare resources and institutions for treatment of offenders. Pre: 300-301.
- 335 SEMINAR IN SOCIAL WELFARE (3) II** Ishimoto
 Designed to coordinate and integrate social welfare concepts with practice. To be taken concurrently with 340. Pre: 315.
- 340 FIELD EXPERIENCE (2) II** Ishimoto
 Short-term experience in a social agency with opportunity to observe and participate in agency service at appropriate level. Limited to social work majors. To be taken concurrently with 335.

College of Tropical Agriculture

THE COLLEGE OF TROPICAL AGRICULTURE prepares students for professional work in the fields of agriculture and home economics. There are three curricula in agriculture: agricultural technology, agricultural economics, and agricultural science. Agricultural technology has two options—general and tropical crop production. Agricultural science has four options—entomology, animal sciences, soil science, and tropical horticulture. Agricultural economics has two options—agricultural economics and agricultural business.

Six curricula are offered in home economics: fashion design and merchandising, general home economics, home economics education, food and nutritional sciences, food service administration, and human development.

All curricula lead to the bachelor of science degree.

The establishment of the College of Agriculture was approved in principle by the board of regents on December 7, 1944. Its name was changed to the College of Tropical Agriculture in February 1960.

The College also includes the Hawaii Agricultural Experiment Station and the Cooperative Extension Service in Agriculture and Home Economics.

Admission and Degree Requirements

The requirements for admission are the same as those for the University. Students who lack some of this required preparation are unable to follow the regular programs and may need more than four years to complete the degree requirements.

To be eligible for the degree a student must:

1. Complete the general requirements prescribed by the University (pp. 49–51);
2. complete the course requirements of a curriculum;
3. have a 2.0 grade-point ratio for all registered credits.

Curricula in Agriculture

The program is designed to give a knowledge of the fundamental principles underlying agriculture as a science, and to prepare for effective service in research, teaching, business, and industry, as well as in practical farming.

In addition to the general University requirements in communications, quantitative reasoning, world civilization, humanities, natural sciences and social sciences the College requirements include a basic core consisting of Ag 100, AS 141, Chem 113-115, 114-116, Hort 262, Ag Econ 120, Ent 161 and Soils 481. Curricular requirements are:

AGRICULTURAL TECHNOLOGY: Ag Eng 331, Agron 501, Ent 372, Hort 361, PPath 410, Soils 482 and

(a) in the *General Agriculture option*: 18 credits from agronomy, agriculture, ag engineering, animal sciences, botany, plant sciences; 18 credits from humanities, social sciences, HPE.

(b) in the *Tropical Crops Production option*: Phys 160, 161, AE 431, 435, Ag Econ 327, Botany 470, and 15 credits from agronomy, horticulture, botany and ag engineering.

AGRICULTURAL SCIENCE: Chem 243, 245; Chem 244, 246 or Ag Biochem 402; Genet 451; Phys 160, 161; Micro 151 and

(a) in the *Animal Science option*: AS 241, 341; 9 credits from AS 342, 343, 344, 345, 346; Zool 320; 16 credits from Ag Biochem 402; Ag Econ 327; Ag Eng 331; Agron 201, 413; AS 442, 443, 444, 445, 446; Chem 133; Econ 150; Ent 372; Zool 340, 416, 417, 430.

(b) in the *Entomology option*: Ent 361, 362, 372; one year of a foreign language: German, French, Spanish, Japanese or Russian; 15 credits from Agr Eng 331; Bor 105, 353, 360, 470; Chem 331; Geog 420; Hort 392, 453, 462, 463; Phil 200; PPath 410; Soils 482, 483; Zool 345, 401, 410, 416, 425, 431.

(c) in the *Soil Science option*: Chem 331; Soils 399, 482, 483, and 18 credits from Agro 502; Ag Eng 435; Bor 160, 201, 353, 470, 673; Chem 432, 451-452, 551-552; Geog 101, 420, 430; Geol 101, 102, 424; Hort 392, 462, 463; Math 136, 315; Phil 200; Soils 484; Zool 431, 432.

(d) in the *Tropical Horticulture option*: 25 credits from the following: Ag Biochem 402; Ag Eng 331, 435; Bor 105, 160, 201, 353, 360, 410, 412, 418, 454, 461, 470, 480; Chem 331; Ent 161, 372; Ger 101-102; Hort 361, 462, 369, 392, 453, 463, 471, 481, 494; Math 135, 136, 231; PPath 410; Soils 482, 483; Zool 431, 432.

AGRICULTURAL ECONOMICS: Econ 150, 151, 300, 340; Acc 201; PolSc 110; Ag Econ 321, 322, 327, 428, 434 and

(a) in *Agricultural Business options*: Management 300; marketing & foreign trade elective; Law 300; Ag Econ 423, 430 and two electives from econ, business, ag engineering.

(b) *Agricultural Economics option*: seven electives from agronomy, economics, business, ag engineering.

AGRICULTURE COURSES

See pp. 4-5 for a discussion of course descriptions.

Agriculture (Ag)

Associate Professors CHUN, S. GOTO

- 100 AGRICULTURE ORIENTATION (1) I** **Goto**
Lectures and field trips to acquaint student with background of agriculture and to help him select major.
- 299 AGRICULTURAL PRACTICE (2) I, II, SS** **Goto**
Agricultural practice on projects at Pearl City facility. May be repeated.
- 310 COMMUNITY ACTION PROGRAM (3) evenings** **Sussman**
Dynamics and structure of community action; case studies of international and Hawaiian programs.
- 399 AGRICULTURAL THESIS (arr.) I, II, SS** **Staff**
Advanced individual work in field, laboratory, library. Limited to senior majors with 2.7 grade-point ratio, or 3.0 grade-point ratio in agriculture.
- 401 INTRODUCTION TO COOPERATIVE EXTENSION WORK (3) II** **Chun**
Objectives and organization. Methods, selection, training of voluntary leaders; basic principles in program development and appraisal.

Agricultural Biochemistry (AgBio)

Professor MATSUMOTO; Assistant Professor HYLIN

- 402 PRINCIPLES OF METABOLISM (3) I**
Study of fundamental processes common to all living organisms. Pre: Chem 117-118 or 113-115, 114-116 and 241-242, or consent of instructor. Approved for graduate credit.
- 402 L PRINCIPLES OF METABOLISM—LABORATORY (1) I**
This laboratory course may *not* be taken without lectures (402).

Agricultural Economics (AgEc)

Professors DAVIDSON, HUGHES, PAUL, PHILIPP, SCOTT; Associate Professors ISHIDA, KEELER, LARSON, SPIELMANN; Assistant Professors BOYER, COLLIER; Lecturers BAKER, GERTEL, LUCAS, WALLRABENSTEIN

- 120 AGRICULTURAL ECONOMICS (3) I** **Hughes**
Introduction to economics of agricultural production, marketing, prices, income, policy. Includes government policy and program related to agriculture, land use, farm tenancy, socio-economic problems of farmers in nation and world.
- 321 AGRICULTURAL PRICES (3) II (2 L, 1 Lb)** **Spielmann**
Factors affecting prices of agricultural products; evaluation of governmental price policy. Pre: course in economics.
- 322 MARKETING AGRICULTURAL PRODUCTS (3) II (2 L, 1 Lb)** **Paul**
Problems, agencies, functions, costs, prices, regulations affecting marketing; proposed improvements. Pre: introductory course in economics or consent of instructor.

- 327 FARM AND RANCH MANAGEMENT (3) I (2 L, 1 Lb)** Lucas
Principles of organization and management of individual farms and ranches; choice of enterprises; farm planning; budgeting; business aspects; records; farm and plantation visits.
- 399 DIRECTED STUDY (arr.) I, II** Staff
Limited to exceptional undergraduate students qualified to carry on advanced study. Pre: consent of instructor.
- 410 INTRODUCTION TO QUANTITATIVE METHODS IN AGRICULTURAL ECONOMICS (3) I** Larson
Mathematics applied to economics. College algebra, analytical geometry, calculus; introduction to matrix algebra. Examples drawn from agricultural economics. Pre: Math 134 or consent of instructor.
- 423 AGRICULTURAL COOPERATIVES (3) II** Ishida
History; appraisal of methods and operations; problems of management, membership relations, accounting. Pre: 322 or consent of instructor. (Alt. yrs.; not offered 1968-69.)
- 424 MARKETING OF TROPICAL AND SUBTROPICAL AGR. PRODUCTS (3) II** Scott
Marketing system and market analysis for sugar, rice, pineapple, coffee, citrus, other tropical and subtropical crops. Pre: 322 or consent of instructor. (Alt. yrs.; not offered 1968-69.)
- 425 MARKETING OF LIVESTOCK, POULTRY AND DAIRY PRODUCTS (3) II** Staff
Marketing systems and market analysis for livestock, poultry and dairy products. Pre: 322 or consent of instructor. (Alt. yrs.; not offered 1968-69.)
- 426 AGRICULTURAL ECONOMICS EXTENSION (3) I** Ishida
Disseminating agricultural economic information to extension agents, producers, manufacturers, distributors, retailers. Methods of developing price and outlook reports and economic techniques in applied farm management. (Alt. yrs.; not offered 1968-69.)
- 428 PRODUCTION ECONOMICS (3) I** Philipp
Economic analysis of agricultural production, including theory of firm, resource allocation, production and cost functions, input-output analysis, farm size, enterprise combinations, tenure arrangements, risk, decision making. Pre: 327 or consent of instructor.
- 429 AGRICULTURAL POLICY AND PLANNING (3) II** Spielmann
Roles of government and private enterprise in agriculture. Pre: Econ 150-151, or consent of instructor. (Alt. yrs.; not offered 1968-69.)
- 430 AGRICULTURAL FINANCE (3) II** Lucas
Financing of agricultural production and marketing enterprises, operation of agricultural credit systems. Pre: 327 or consent of instructor. (Alt. yrs.; not offered 1968-69.)
- 431 FOREST ECONOMICS (3) II** Baker
Economic principles involved in utilization of forest land and timber, distribution of forest products. Pre: consent of instructor. (Alt. yrs.; offered 1968-69.)
- 433 ADVANCED MANAGEMENT AND PLANTATION ECONOMICS (3) II (2 L, 1 Lb)** Keeler
Advanced work in management and organization of commercial farms; farm business analysis; plantation economics. Pre: 327 or consent of instructor. (Alt. yrs.; offered 1968-69.)
- 434 STATISTICAL METHODS (3) I** Larson
Principles and methods of statistical analysis. Frequency distributions, probability, tests of significance, confidence intervals, regression and correlation, analysis of variance. Applications to agricultural economic research.
- 435 CONSUMER ECONOMICS AND FOOD DISTRIBUTION (3) I** Boyer
Consumer buying, store layout, organization, management, procurement. Pre: 322 or consent of instructor. (Alt. yrs.; not offered 1968-69.)

- 480 COMPUTER PROGRAMMING IN AGRICULTURAL ECONOMICS RESEARCH (3) II** Collier
Computer programming: Fortran. Prepared programs. Basic concepts of matrix algebra, regression analysis, linear programming. No prerequisite.
- 624 RESEARCH METHODOLOGY (3) II** Davidson
Philosophical setting for scientific inquiry, scientific method and its antecedents, application in agricultural economics research. Original research project required. Pre: 321, 322 or consent of instructor. (Alt. yrs.; offered 1968-69.)
- 625 ECONOMICS OF AGRICULTURE: TROPICAL COUNTRIES AND ASIA (3) I** Philipp
Agricultural development, economics of agricultural technology, resource utilization, comparative advantage, international and intra-country marketing problems, institutions affecting agricultural economy.
- 626 COLLECTION OF ECONOMIC DATA IN AGRICULTURE (3) II** Wallrabenstein
Methods of collection of agricultural data for regular programs and for special purposes. Pre: 434 or consent of instructor.
- 629 ADVANCED PRODUCTION ECONOMICS (3) II** Davidson
Economics of resource allocation at firm and industry levels. Advanced analytical techniques of analysis: linear programming; synthesis; budgeting; statistical analysis. Pre: 428 or consent of instructor.
- 630 MARKET DEVELOPMENT FOR AGRICULTURAL PRODUCTS (3) II** Scott
Methodology for determining market potentials; methods and costs of market development for products of agricultural origin. Pre: 322 or consent of instructor. (Alt. yrs; not offered 1968-69.)
- 632 ECONOMICS OF AGRICULTURAL PROCESSING INDUSTRIES (3) II** Paul
Economic studies of processing efficiency, economic feasibility of new processing methods, and role of processing in marketing agricultural products. Pre: 322 or consent of instructor. (Alt. yrs.; offered 1968-69.)
- 634 ADVANCED AGRICULTURAL PRICES AND STATISTICAL ANALYSIS (3) II** Larson
Research methodology in analysis of agricultural prices and other statistical data in agriculture, including techniques for estimating prices and determination of factors affecting prices. Pre: basic courses in prices and statistics.
- 635 SEMINAR: AGRICULTURAL PRICE ANALYSIS AND STATISTICS (3) I** Larson
Selected topics in application of statistics to research in agricultural production and marketing. Pre: 634 or consent of instructor.
- 636 SEMINAR: AGRICULTURAL POLICY (3) II** Spielmann
Economic analysis of agricultural policy at state, national, international levels; particular reference to influence of policy on economic development in agriculture. Pre: 429 or consent of instructor. (Alt. yrs.; offered 1968-69.)
- 637 RESOURCE ECONOMICS (3) II** Gertel
Analysis of problems of development and management of natural resources with emphasis on resources in agriculture and role in economic development. Pre: 428 or consent of instructor. (Alt. yrs.; not offered 1968-69.)
- 638 SEMINAR: LAND USE IN DEVELOPING COUNTRIES (3) I** Gertel
Role of land use pattern on agricultural economic development and welfare of rural people in emerging agricultural nations. Pre: 428 or consent of instructor.
- 639 AGRICULTURAL DEVELOPMENT ECONOMICS AND DEVELOPMENT PLANNING (3) I** Hughes
Theories of agricultural development, agriculture in total development process; formulation of agricultural development plans and policies.
- 699 DIRECTED RESEARCH (arr.) I, II** Staff
Pre: consent of instructor.

- 701 SEMINAR IN AGRICULTURAL ECONOMICS (arr.)** **Staff**
 Topics of current interest and current research related to agricultural production, marketing, statistics, rural sociology, development and policy.

Agricultural Engineering (AgEng)

Professor KINCH; Associate Professors GITLIN, WANG; Assistant Professors LIANG, WU;
 Instructor SHELLENBERGER

- 331 (231) MECHANIZING AGRICULTURAL PRODUCTION (4)** **Shellenberger**
 Theory and practices of mechanized production and processing of food and fiber crops.
- 431 AGRICULTURAL POWER AND EQUIPMENT (3)** **Kinch**
 Integration of power and equipment on plantation, ranch, farm; methods of evaluating capacity, efficiency, cost. Pre: 331 or consent of instructor.
- 435 IRRIGATION PRINCIPLES AND PRACTICES (3)** **Wu**
 Basic principles of irrigation science with applications to irrigation methods; water conveyance, distribution, measurement; water requirements of crops; irrigation efficiency and cost. Pre: 331 or consent of instructor.
- 631 ANALYSIS OF IMPLEMENT DESIGN (3)** **Kinch**
 Application of machine design principles and basic soil, crop requirements in solving typical equipment design problems. Pre: ME 468 or equivalent.
- 635 FARM IRRIGATION SYSTEM DESIGN (3)** **Wu**
 Design based on water requirements; design of water conveyance and diversion structures and of application methods. Irrigation economics. Pre: CE 421 or equivalent.
- 647 METHODS OF AGRICULTURAL ENGINEERING (3)** **Wang**
 Study of mathematical tools of agricultural engineering, including dimensional analysis, model studies, queuing theory, boundary value problems and application to theory of drying and vibrations of elastic bodies. Pre: Math 402.
- 648 POST-HARVEST PROCESS ENGINEERING (3)** **Wang**
 Advanced topics in heat transfer; forced convection, condensing vapor, boiling liquid; physical properties of agricultural products; design of pre-cooling systems. Pre: ME 422, Math 402.
- 699 DIRECTED RESEARCH (arr.) I, II** **Staff**
- 700 SEMINAR (1)** **Wang**
 Review of recent literature. Pre: consent of instructor. May be repeated once.

Agronomy and Soil Science

Senior Professor G. D. SIEMAN; Professors EKERN, FOX, SANFORD, SWINDALE; Associate Professors GREEN, KANEHIRO, ROTAR, UEHARA, YOUNG; Assistant Professors BARTHOLOMEW, EL SWAIFY, IKAWA, JONES, SILVA, URATA

Agronomy (Agron)

- 201 (502) PRINCIPLES OF TROPICAL AGRONOMY (3) II (2 L, 1 Lb)** **Bartholomew**
 Relation of plants, nutrients, environment, cultural practices to field crop production. Emphasis on tropics. Pre: Bot 101, Chem 114.
- 310 (501) TROPICAL CROP PRODUCTION (3) I** **Rotar**
 Current agricultural practices in production of sugar cane, pineapple, vegetables, fruits, forage in tropics. Pre: 201 or equivalent.

- 411 (510) SUGAR CANE AGRONOMY (3) I** **Fox**
Cane plant; breeding, physiology, culture, growth, harvesting, milling, marketing; field practices and management; international agreements.
- 412 (511) PINEAPPLE CULTURE (2) I, II** **Sanford**
Historical development of pineapple culture around world. Morphological and physiological peculiarities of pineapple plant. Agronomic practices used in pineapple culture in Hawaii.
- 413 (503) PASTURE MANAGEMENT (3) II** **Rotar**
Origin, establishment, inventory, utilization, management of pasture and range forage. Emphasis on applications in tropics. Pre: Bot 101. (Alt. yrs.; offered 1968-69.)
- 610 (601) PHYSIOLOGY OF CROP PRODUCTION (3) I** **Bartholomew**
Physiological principles underlying development and production of crop communities. Topics include establishment of crop, population and distribution effects, energy and nutrient supply, energy transport and storage and aspects of regrowth. Pre: Bot 470 or consent of instructor.
- 621 (612) BREEDING OF ASEXUALLY PROPAGATED CROPS (2) II** **Urata**
Breeding of asexually propagated perennial species, including sugar cane, pineapple, tropical forage grasses, with special emphasis on genetical, cytological, evolutionary principles involved.
- 699 DIRECTED RESEARCH (arr.) I, II**
Pre: candidacy for M.S. degree.
- 701 (605) SEMINAR IN ADVANCED AGRONOMY (1) I**
Review of recent research findings in tropical agronomy. Pre: graduate standing.
- 710 (701) MINERAL NUTRITION OF TROPICAL CROPS (2) I (2 L)** **Sanford**
Mineral nutrition of plants in relation to mechanisms of ion transport, salt absorption, plant metabolism. Special emphasis on problems associated with tropical crops. Pre: Bot 470; Soils 350.

Soil Science (Soils)

- 304 (481) TROPICAL SOILS (4) (3 L, 1 Lb)** **Ikawa**
Origin, development, properties, management of tropical soils; classification of Hawaiian soils. Pre: Chem 114.
- 340 (483) SOIL CHEMISTRY (3) II (2 L, 1 Lb)** **Silva**
Study of soil reaction, availability of plant nutrients, chemical analyses of soils. Pre: 304.
- 350 (482) SOIL FERTILITY (3) II** **McCall**
Nutrient availability in relation to chemical and physical properties of soil; fertility evaluation by plant response and soil tests. Pre: 304.
- 460 (484) SOIL PHYSICS (3) II (2 L, 1 Lb)** **Uehara**
Physical properties of soils; structure and moisture relationships. Pre: Phys 161 or 171; Soils 304.
- 461 (486) SOIL EROSION: CAUSES AND CONTROLS (3) I** **Ekern**
Physical properties of soil which influence erodibility; energy sources and mechanics of water and wind erosion; principles of vegetative and mechanical controls; survey of development and spread of conservation movement.
- 470 (510) TROPICAL SOIL SURVEY AND INTERPRETATION (2) II** **Giese**
Field study of tropical soils, soil mapping, correlation, classification, interpretation by standard U.S. methods. Field practice in preparation of soil maps and reports. Pre: 304.
- 499 (399) AGRICULTURAL THESIS (arr.) I, II** **Uehara**

- 640 (690) ADVANCED SOIL CHEMISTRY (3) II (2 L, 1 Lb)** El-Swaify
 Physico-chemical properties of soils and soil solution with emphasis on colloidal, surface, ionic equilibrium relationships. Pre: 340; Chem 351 recommended.
- 650 (689) ADVANCED SOIL FERTILITY (4) I (2 L, 2 Lb)** Fox
 Ion exchange, organic matter transformations, solubilization of compounds related to crop growth and composition. Use of soil and plant tissue tests for estimating fertilizer requirements. Pre: consent of instructor.
- 661 (487) METEOROLOGY IN AGRICULTURE (3) II** Ekern
 Elements and mechanics of weather; response of plants to weather elements; manipulation of microclimate; weather requirements of major crops; weather and plant disease and insects; weather and warm-blooded animals, including man.
- 670 (685) SOIL FORMATION AND CLASSIFICATION (4) I** Ikawa
 Weathering and alteration of rocks and sediments; formation of soils; comprehensive review of effects of climate, vegetation, drainage, topography and time on formation of soils and sediments; comparative survey of soil classification systems. Emphasis on tropical soils. Pre: consent of instructor.
- 671 (688) SOIL AND CLAY MINERALOGY (3) II (2 L, 1 Lb)** Jones
 Identification of soil secondary minerals with emphasis on clay. Pre: Geol 410 or consent of instructor.
- 699 DIRECTED RESEARCH (arr.) I, II**
 Pre: candidacy for M.S. degree; consent of instructor.
- 704 (687) SOIL SCIENCE SEMINAR (1) I, II** Ekern
 Review of recent findings in soil science research in fields of soil chemistry, physics, classification, fertility, bacteriology, technology. Pre: graduate standing.
- 799 DIRECTED RESEARCH (arr.) I, II**
 Pre: candidacy for Ph.D. degree; consent of instructor.

Animal Sciences (AnSc)

Professors BROOKS, COBB, KOSHI, ROSS, WAYMAN; Associate Professors FURUMOTO, HERRICK, HUGH, STANLEY; Assistant Professor IWANAGA; Lecturers MIYAHARA, SMITH

- 141 ANIMALS AND MAN (3) II** Herrick, Iwanaga
 Study of major farm animals and poultry and their contribution to man, origin of species, distribution and economic importance.
- 241 FEEDS AND FEEDING (3) I (2 L, 1 Lb)** Stanley
 Basic principles of feeding farm animals; composition and nutritional value of feeds; nutritional requirements of beef cattle, dairy cattle, horses, poultry, swine; balancing rations for specific productive purposes. Pre: Chem 114, 116.
- 341 LIVESTOCK MANAGEMENT LABORATORY (3) SS (5 L, Lb for 6 weeks)** Staff
 Assigned problems and practical experience in management of livestock; evaluating, feeding, housing beef cattle, dairy cattle, poultry, swine. Recommended for Animal Sciences majors during summer between junior and senior years. May be taken by other students with adequate background. Pre: consent of chairman.
- 342 BEEF PRODUCTION (3) II** Wayman
 World beef production problems, resources and opportunities; selection of breeding stock, principles of handling and feeding on range and in feedlot. Pre: 141. (Alt. yrs.; offered 1968-69.)

- 343 TROPICAL DAIRYING (3) II** **Koshi**
Principles involved in economical milk production in the tropics; breeds of dairy cattle, selection, raising young animals; care, housing, management of milking herd; factors affecting quantity and quality of milk produced. Pre: 141. (Alt. yrs.; not offered 1968-69.)
- 344 SWINE PRODUCTION (3) I** **Hugh**
Principles of efficient pork production including breeds, breeding, feeding, management, marketing. Pre: 141. (Alt. yrs.; offered 1968-69.)
- 345 POULTRY PRODUCTION (2) II** **Herrick**
Principles involved in economical production of poultry meat and eggs; breeding, feeding, housing, management of different types of poultry. Problems associated with tropical environment emphasized. Pre: 141, 241 or consent of instructor. (Alt. yrs.; not offered 1968-69.)
- 346 HORSES AND HORSEMANSHIP (3) I (2 L, 1 Lb)** **Smith**
Origin of species, breeds, nutrition, care, management. Laboratory on management practices with work on light horses.
- 442-443 PHYSIOLOGY OF DOMESTIC ANIMALS (4-4) Yr. (3 L, 1 Lb)** **Wayman**
Organ systems of body, their anatomical arrangement, structure, function. Emphasis on most important species. (Alt. yrs.; not offered 1968-69.)
- 444 ANIMAL NUTRITION (4) II (3 L, 1 Lb)** **Brooks**
Sources, digestion, metabolism, functions, requirements and inter-relationships of nutrients for maintenance and production of domestic animals. Pre: 241, AgBio 402. (Alt. yrs.; offered 1968-69.)
- 445 ANIMAL BREEDING (3) I** **Cobb**
Application of genetic principles to improvement of livestock, including poultry. Pre: Genet 451 or consent of instructor. (Alt. yrs.; not offered 1968-69.)
- 446 ANIMAL DISEASES AND THEIR CONTROL (3) I (2 L, 1 Lb)** **Miyahara**
Disease problems of livestock and poultry; prevention, control, eradication. Pre: 141, and consent of instructor.
- 499 DIRECTED STUDY OR RESEARCH (arr.) I, II** **Staff**
Limited to exceptional undergraduate students, generally with a 2.7 overall grade-point ratio or 3.0 in major. Exceptions may be granted students with high achievement in last 3 semesters. Pre: consent of instructor.
- 641 SEMINAR IN ANIMAL SCIENCE (1) I, II** **Staff**
Topics of current interest and current research related to nutrition, genetics, physiology. Pre: consent of instructor.
- 642 RUMINANT NUTRITION (2) II** **Stanley**
Physiology and nutrition of ruminant, including microbiology of rumen, carbohydrate utilization, production of volatile fatty acids, protein metabolism, absorption of nutrients, metabolic processes, normal and abnormal functions within rumen. Pre: 442-443, 444; AB 402. (Alt. yrs.; offered 1968-69.)
- 643 PHYSIOLOGY OF REPRODUCTION (3) I** **Wayman**
Comparative differentiation, development, growth, function of the reproductive systems of mammals and birds; external factors which influence response; artificial insemination. Pre: 442-443 or equivalent. (Alt. yrs.; offered 1968-69.)
- 645 QUANTITATIVE GENETICS (3) II (2 L, 1 Lb)** **Cobb**
Concepts relating to genetic properties of populations and to inheritance of quantitative traits. Pre: Genet 451. (Alt. yrs.; offered 1968-69.)
- 699 DIRECTED RESEARCH (arr.) I, II, SS**
(1) Genetics—Cobb; (2) Nutrition—Brooks, Ross, Stanley, Palafox; (3) Physiology—Wayman, Herrick; (4) Pathology—Furumoto; (5) Management—Staff.
- 800 THESIS RESEARCH (arr.)** **Staff**

Entomology (Ento)

Senior Professors BESS, HARDY; Professors NISHIDA, M. SHERMAN; Associate Professors
BEARDSLEY, MITCHELL, NAMBA; Assistant Professors HARAMOTO, TAMASHIRO

- 161 GENERAL ENTOMOLOGY (4) I, II (2 L, 2 Lb)** Hardy, Mitchell
Structure, habits, biology, classification of insects; insects characteristic of Hawaii.
Pre: Zool 101 or Bot 101.
- 361 INSECT MORPHOLOGY (3) I (2 L-Lb)** Namba
Comparative and gross morphology; homologies of structures; anatomy; development
in representative groups. Pre: 161.
- 362 SYSTEMATIC ENTOMOLOGY (3) II (2 L-Lb)** Hardy
Classification of insects; orders and families. Use of taxonomic tools. Pre: 361.
- 372 ECONOMIC ENTOMOLOGY (4) II (2 L, 2 Lb)** Sherman
Insect pests; principles of chemical, biological, cultural control. Laboratories on
Hawaiian insects of households, plants, animals. Pre: 161; Chem 113-114.
- 399 DIRECTED RESEARCH (arr.) I, II** Staff
Limited to exceptional undergraduate students qualified to carry on research problems.
- 661 MEDICAL AND VETERINARY ENTOMOLOGY (3) I (2 L, 2 Lb)** Hardy
Insects and other arthropods in relation to causation of human and animal diseases.
Pre: 161, desirable Zool 410 and Micro 151.
- 662 ADVANCED SYSTEMATIC ENTOMOLOGY (3) II (2 L-Lb)**
Classification of special groups. Nomenclatorial problems; international code. Pre:
362.
- 663 SCALE INSECTS (3) I (2 L-Lb)** Beardsley
Coccids of Hawaii. Taxonomy, techniques, economic importance, control. Pre: 161;
Bot 461 desirable.
- 664 IMMATURE INSECTS (3) II (2 L, 2 Lb)** Beardsley
Identification, structure, literature, economic significance, emphasis on Holometa-
bola. Pre: 362.
- 671 INSECT ECOLOGY (3) II (2 L, 1 Lb)** Bess, Nishida
Insects as living units in an environment of physical and biotic factors. Pre: 362,
372; Zool 631, 632 desirable. (Alt. yrs.; not offered 1968-69.)
- 672 ACAROLOGY (3) II (2 L, 2 Lb)** Haramoto
Taxonomy, biology, ecology of mites. Emphasis on medically and agriculturally
important species. Pre: 362. (Alt. yrs.; not offered 1968-69.)
- 673 INSECT PATHOLOGY (3) I (2 L, 1 Lb)** Tamashiro
Diseases of insects; histopathology; microbe agents and biological control. Pre: 372.
- 675 BIOLOGICAL CONTROL OF PESTS (3) I (2 L, 1 Lb)** Bess, Nishida
Fundamental concepts. Critical study of major biological control projects. Pre: 362
and 372; desirable Zool 431, 432. (Alt. yrs.; offered 1968-69.)
- 680 INSECT TOXICOLOGY (4) I (2 L, 2 Lb)** Sherman
Mode of action of insecticides. Relationship of toxicology and physiology to use of
insecticides. Pre: 372; Chem 141. (Alt. yrs.; not offered 1968-69.)
- 686 INSECT TRANSMISSION OF PLANT PATHOGENS (3) II (2 L-Lb)** Namba
Problems of insect transmission of plant pathogens. Pre: 161 and PPath 310. (Alt.
yrs., offered 1968-69.)

- 697 ENTOMOLOGY SEMINAR (1) I, II** **Staff**
Current entomological literature. Reviews and reports. Required of graduate students in entomology.
- 699 DIRECTED RESEARCH (arr.) I, II** **Staff**
Directed research and critical reviews in various fields of entomology.
- 800 THESIS RESEARCH (arr.)** **Staff**

Food Science and Technology (FdSc)

Professor ROSS; Associate Professors FRANK, YAMAMOTO; Assistant Professor MOY

- 301 FOOD TECHNOLOGY (2) I** **Ross**
Introduction to field of food technology and survey of commercial food processing. Special tropical and Asian food products. Lectures and field trips to local processors (Alt. yrs.: not offered 1968–69.)
- 601 PRINCIPLES IN FOOD SCIENCE AND TECHNOLOGY (3) II** **Ross**
Integration of physical, chemical, biological concepts to formulate basic principles in food science and technology; scientific basis of food preservation. Pre: general physics, biochemistry, microbiology. (Alt. yrs.; offered 1968–69.)
- 603 MICROBIOLOGY OF FOODS (3) I** **Frank**
Description of micro-organisms encountered in foods; different types of food spoilage; various methods used for food preservation. Pre: Micro 351 and consent of instructor. (Alt. yrs.; not offered 1968–69.)
- 604 LABORATORY METHODS FOR FOOD MICROBIOLOGY (2) I (2 Lb)** **Frank**
Laboratory methods for studying food spoilage, its control and prevention. Pre: Micro 351 and consent of instructor. (Alt. yrs.; offered 1968–69.)
- 610 (510) PRINCIPLES OF TROPICAL FOOD PROCESSING AND PRESERVATION (3) I (2 L, 1 3-Hr Lb)** **Moy**
Engineering principles of processing and preservation; unit operations in dehydration, freezing, freeze-drying, irradiation, thermal processing, chemical preservation of tropical foods; review of fluid mechanics, heat transfer, psychrometry. Pre: 1 year each of general physics, general chemistry, algebra.
- 611 (511) CHEMISTRY AND TECHNOLOGY OF TROPICAL FOOD PRODUCTS (3) II (2 L, 1 3-Hr Lb)** **Moy**
Physical chemistry of food texture, color, flavor; instrumentation and chemical analysis of tropical food products; food packaging and quality control. Experimental test methods in new product development. Pre: consent of instructor.
- 620 SEMINAR IN FOOD SCIENCE (1) I** **Frank**
Special topics, reports, informal discussion of graduate student research. Pre: consent of instructor.
- 699 DIRECTED RESEARCH (arr.) I, II** **Staff**
Pre: consent of department chairman.
- 701 SEMINAR IN RECENT ADVANCES IN FOOD RESEARCH (1) II** **Frank**
Reports and discussions from current literature in food science and technology.
- 730 (630) BIOCHEMICAL ASPECTS OF FOOD SCIENCE (3) II** **Yamamoto**
Properties of natural compounds of importance to food processing including application and control for selected enzyme systems. Pre: biochemistry. Consent of instructor.
- 799 DIRECTED RESEARCH (arr.) I, II** **Staff**
Pre: Consent of adviser.
- 800 THESIS RESEARCH (arr.) I, II** **Staff**

Horticulture (Hort)

Professors BREWBAKER, GILBERT, HAMILTON, KAMEMOTO, SAGAWA, WARNER, WATSON;
Associate Professors NAKASONE, ROMANOWSKI, SHEEHAN; Assistant Professors HART-
MANN, MCLAIN, POOLE

- 101 PLANTS ARE FOR PEOPLE (2) I (2 L)** Watson
Impact of Hawaiian flowers, fruits, trees, shrubs, vegetables to life in tropics and subtropics. (Not open to agricultural majors.)
- 262 PRINCIPLES OF HORTICULTURE (3) I (2 L, 1 Lb)** Romanowski
Relationships of plant structures, nutrients, environment, cultural methods to plant growth. Pre: Bot 101; credit or concurrent registration in Chem 114.
- 305 TROPICAL LANDSCAPE DESIGN AND CONSTRUCTION**
(4) II (2 L, 2 Lb) McLain
Planning, building, planting functional and beautiful outdoor space for living.
- 310 TROPICAL NURSERY MANAGEMENT (3) I (2 L, 1 Lb)** McLain
Cultural techniques and business methods necessary for management of nursery operations.
- 320 TROPICAL LANDSCAPE MAINTENANCE (3) I (1 L, 2 Lb)** McLain
Management methods and procedures for maintaining public, industrial, institutional grounds.
- 361 PRINCIPLES OF PLANT PROPAGATION (3) I (2 L, 1 Lb)** Nakasone
Theory and practical methods of plant propagation. Pre: Bot 101. (Alt. yrs.; offered 1968-69.)
- 369 ORNAMENTAL PLANT MATERIALS (3) II (2 L, 1 Lb)** Hartmann
Lawns, ground covers, vines, shrubs, herbaceous plants, trees in Hawaii. Pre: 262; Bot 360; or consent of instructor.
- 392 COMMERCIAL VEGETABLE PRODUCTION (3) I (2 L, 1 Lb)** Gilbert
Production methods and current problems from choosing seed to marketing. Emphasizes top ten Hawaiian vegetables. Pre: 262; credit or concurrent registration in Ento 161.
- 453 PRINCIPLES OF PLANT BREEDING (3) I** Hartmann
Cytogenetics, hybridization, selection in improvement of plants. Pre: Genet 451.
- 462 TROPICAL FRUIT CROPS (3) II (2 L, 1 Lb)** Nakasone
Botany, distribution, influence of physical and biotic factors upon growth, flowering, fruiting. Pre: Bot 101, Chem 113-114, Hort 262.
- 463 FLORICULTURE (3) I (2 L, 1 Lb)** Kamemoto
Fundamentals and practices of producing floricultural crops in Hawaii. Pre: 262; Bot 101.
- 471 POST-HARVEST HANDLING (3) II (2 L, 1 Lb)** Akamine
Handling and storage of horticultural crops. Pre: 262 or consent of instructor. (Alt. yrs.; not offered 1968-69.)
- 481 WEED SCIENCE (3) I (2 L, 1 Lb)** Romanowski
Weed classification and principles of control. Pre: 262 or Agron 201. (Alt. yrs.; offered 1968-69.)
- 494 SYSTEMATIC VEGETABLE CROPS (3) II (2 L, 1 Lb)** Gilbert
Adaptation, qualities, disease and insect resistance, taxonomic comparison of types grown in Hawaii; pedigrees and breeding of major varieties. Pre: 262. (Alt. yrs.; offered 1968-69.)

- 603 EXPERIMENTAL DESIGN (3) I (2 L, 1 Lb)** **Brewbaker**
Design of experiments and variance analyses in biological and agricultural research. Pre: Zool 431 or Ag Econ 434 or equivalent. Desirable: Zool 432.
- 611 ADVANCED PLANT BREEDING (3) II (2 L, 1 Lb)** **Gilbert**
Breeding systems and methods, current practices and problems in plant improvement. Pre: 453. (Alt. yrs.; not offered 1968–69.)
- 618 CYTOGENETICS (3) II (2 L, 1 Lb)** **Sagawa**
Correlation of genetic and cytological phenomena. Pre: Genet 451, Bot 618. (Alt. yrs.; not offered 1968–69.)
- 662 ADVANCED TROPICAL FRUIT SCIENCE (3) II (2 L, 1 Lb)** **Hamilton**
Origin, taxonomic relationships, genetics, breeding, technical aspects of culture of fruit and nut crops commercially important in Hawaii. Pre: 462. (Alt. yrs.; not offered 1968–69.)
- 664 ORCHIDOLOGY (3) II (2 L, 1 Lb)** **Kamemoto**
Classification, culture, cytogenetics, breeding of orchids. Pre: Bot 101; Genet 451. (Alt. yrs.; offered 1968–69.)
- 666 RADIATION BIOLOGY (3) II (2 L, 1 Lb)** **Brewbaker**
Types and sources of radiation; effects of irradiation on living organisms; applications in agricultural research. Pre: consent of instructor. (Alt. yrs.; offered 1968–69.)
- 667 HORTICULTURE SEMINAR (1) I, II** **Staff**
Presentation of research reports; reviews of current literature in horticulture.
- 668 GROWTH REGULATORS IN HORTICULTURE (2) II** **Poole**
Concepts of plant growth regulation and application in agriculture. Pre: Bot 470.
- 691 CROP ECOLOGY (3) I (2 L, 1 Lb)** **Warner**
Climatic, edaphic, and biotic factors influencing tropical and subtropical crops; instrumentation and data interpretation. Pre: 262 or consent of instructor. (Alt. yrs.; not offered 1968–69.)
- 699 DIRECTED RESEARCH (arr.) I, II** **Staff**
Pre: consent of instructor.
- 711 SPECIAL TOPICS IN EXPERIMENTAL HORTICULTURE (arr.)** **Staff**
Discussion of recent advances in horticultural research with detailed study of specific areas in this field. Pre: consent of instructor.
- 800 THESIS RESEARCH (arr.) I, II** **Staff**

Plant Pathology (PPath)

Professor BUDDENHAGEN; Associate Professors ARAGAKI, HOLTZMANN, ISHII;
MCCAIN, MEREDITH; Assistant Professors HUNTER, TRUJILLO

- 410 (310) PRINCIPLES OF PLANT PATHOLOGY (4) I (2 L, 2 Lb)** **Holtzmann**
Disease in plants, emphasis upon infection and development in relation to environment; epidemiology; methods of appraisal; control. Pre: Bot 101.
- 605 CLINICAL PLANT PATHOLOGY (2) Summer (2 Lb)** **Staff**
- 610 PRINCIPLES OF PLANT DISEASE CONTROL (3) II (2 L, 1 Lb)** **Araçaki**
Methodology and application of plant disease control. Pre: 310. (Alt. yrs.; not offered 1968–69.)
- 615 PLANT NEMATOLOGY (3) II (2 L-Lb)** **Holtzmann**
Collection, classification, morphology, biology, control of nematodes which attack economic crops. Pre: 410; Zool 101, or consent of instructor. (Alt. yrs.; offered 1968–69.)

- 620 PLANT PATHOLOGY TECHNIQUES (3) I (2 L-Lb)** Trujillo
 Laboratory and greenhouse methods for study of plant diseases; isolation, culture, inoculation; pathological histology, photography. Pre: 410, Micro 351; or consent of instructor.
- 625 ADVANCED PLANT PATHOLOGY (2) II** Buddenhagen
 Analysis of basic concepts of plant diseases; emphasis on physiology of parasitism, etiology, epidemiological principles. Pre: 410, 610; or consent of instructor. (Alt. yrs.; offered 1968-69.)
- 630 PLANT VIROLOGY (3) I (2 L, 1 Lb)** Ishii
 Plant viruses: diseases caused in economic plants, biological and physical properties. Pre: 410, or consent of instructor. (Alt. yrs.; not offered 1968-69.)
- 635 EPIDEMIOLOGY OF PLANT DISEASES (3) I (3 L)** Meredith
- 660 SEMINAR (1) I, II** Staff
 Seminars in contemporary research. Reviews and reports.
- 699 DIRECTED RESEARCH (arr.) I, II** Staff
 Pre: candidacy for M.S. degree; consent of instructor.

Plant Physiology

Professors COOIL, KEFFORD, SIEGEL; Associate Professors FRIEND, PUTMAN

For course descriptions, see the following listings under the department of botany.

BOTANY

- 440 ENVIRONMENTAL AND SPACE BIOLOGY I (2) I (2 L) Alt. Yrs.**
- 470 PRINCIPLES OF PLANT PHYSIOLOGY (4) II (3 L, 1 Lb)**
- 612 ADVANCED BOTANICAL PROBLEMS (arr.) I, II**
- 640 ENVIRONMENTAL AND SPACE BIOLOGY II (2) I (1 L, 1 Lb) Alt. Yrs.**
- 670 INORGANIC PHYSIOLOGY AND WATER RELATIONS (3) I (3 L)**
- 671 ENERGETICS AND BIOSYNTHESIS IN THE PLANT KINGDOM (3) II (3 L)**
- 672 TECHNIQUES IN PHYSIOLOGY (2) I (2 Lb)**
- 673 TECHNIQUES IN PHYSIOLOGY-BIOCHEMISTRY (2) II (2 Lb)**
- 675 PHYSIOLOGY SEMINAR (1) I, II**
- 699 DIRECTED RESEARCH (arr.) I, II**

Curricula in Home Economics

The home economics program is designed to provide, through the facilities of the department and the University, a liberal education integrating the social and natural sciences, the humanities and the arts, and to provide specialized instruction based upon these disciplines as preparation for professional careers in which the interest and well-being of the individual, the family, and the community are paramount.

As the functions of the family are being shifted increasingly to the larger community, there are expanded opportunities for home economics careers in educational and social agencies, government, business and industry, research laboratories, public and private institutions and services.

In addition, the department offers interdisciplinary courses designed to serve other professional schools and as electives for the general student body.

Admission and Degree Requirements

Admission requirements are the same as those for the University. To be entitled to a bachelor's degree in home economics, a student must:

1. Complete the University's general education requirements;
2. complete, in addition to the general education requirements, 60 hours or more of non-introductory courses;
3. offer the prescribed requirement for home economics courses and courses from related fields under one of the specialized home economics major sequences (may overlap 1 and 2);
4. earn at least a 2.0 grade-point ratio (C average) for all registered credits. Students may not register in the junior year as a major in Home Economics Education with a grade-point ratio under 2.5.

Graduate work leading to the master's degree is offered in the field of nutrition. Intended candidates must present the following undergraduate preparation: general chemistry, qualitative analysis, quantitative analysis, organic chemistry, biology, general physics, college algebra, trigonometry and an adequate undergraduate preparation in nutrition.

Specialized Home Economics Major Sequences

FASHION DESIGN, TEXTILES & MERCHANDISING. *Option in Fashion Design:* FDM 111, 113, 125, 213, 215, 216, 315, 316, 415, 417, 418, 419, 420, 422, 424; HE 357; Art 101, 3 studio courses, 230, 1 art elective course; Eng 209 or 215. *Option in Fashion Merchandising:* FDM 111, 113, 125, 213, 215, 216, 325, 417, 418, 427, 428; Art 101, 2 studio courses; Econ 150-151; Acc 100-101; Mkt 300, 315, 340; HE 255, 357; Eng 209 or 215; Psy 426.

FOOD AND NUTRITIONAL SCIENCES. FN 275, 376, 385, 476, 477, 485, 486, 488, 492, 499; HE 357; Chem 103, 106, 141; Ag Biochem 402; Math 134, 135; Micro 151; Physiology 301; Zool 201, 202.

FOOD SERVICE ADMINISTRATION. *Option in Therapeutic Dietetics:* FSA 281, 383, 384, 482, 483; FN 275, 376, 385, 476, 485-486, 490; HD 343; Math 134; Chem 103, 106, 141; Biochem 441; Zool 201, 202; Micro 151; Acc 100, 101; Mgmt 300; PIR 350; Ed Psy 372; Physiology 301. *Option in Industrial Management:* FSA 181, 281, 283, 381, 383, 384, 482, 483; FN 376, 385, 476; Chem 103, 106, 141; Math 134; Food Tech 301; Micro 151; Zool 201, 202; Acc 100, 101, 200; Bus Econ 340; Bus Fin 300; Bus Law 300; Bus Stat 300; Mgmt 300; PIR 350.

HOME ECONOMICS EDUCATION. FDM 113, 213; FN 275, 375, 385; HD 231, 341; HE 251, 253, 255, 371, 357, 359, 471; Chem 103, 104; Zool 201, 202; Micro 151; Psy 350; followed by the professional sequence in education.

HUMAN DEVELOPMENT. *Option in Child Development:* HD 231, 232, 332, 334, 341, 342, 343, 345, 430, 431, 432, 444; Psy 113, 214, 321, 424, 427; Anthro 200; Soc 324; FN 285. *Option in Family and Community Service:* HD 231-232, 341, 342, 343, 345, 441, 442, 444, 449; Psy 214, 321, 322; Ed Psy 429; Anthro 200; Soc 324, 472.

FASHION DESIGN (FDM)

The option in fashion design offers qualified students the opportunity to prepare for ultimate positions as designers, assistant designers, stylists, or fashion executives. Starting positions are sample makers, graders, and pattern makers.

FIRST YEAR

FIRST SEMESTER		SECOND SEMESTER	
	CREDITS		CREDITS
Eng 101	3	Eng 102	3
*Psy 100	3	*Natural Science	3
HE 101 (100)	1	HPE	1
Art (Studio A,B,C, or D)	3	*Art 101	3
FDM 125	3	Art (Studio A,B,C, or D)	3
FDM 111 (110)	3	FDM 113 (112)	3
Total	16	Total	16

SECOND YEAR

History 151	3	History 152	3
*Natural Science	3	*Natural Science	3
*Econ 150	3	*Econ 151	3
FDM 215	3	FDM 216	3
*Humanities	3	FDM 213 (214)	3
Art (Studio A,B,C, or D)	3	Speech 145	3
Total	18	Total	18

* See "B.A. Requirements"—60 credits in non-introductory courses required for graduation.

THIRD YEAR

*Quantitative Reasoning	3	*Humanities	3
FDM 315	3	FDM 316	3
FDM 417	3	FDM 418	3
Art 230	3	Art elective	3
Elective	3	FDM 415	1
		FDM 424 or elective	2
	<hr/>		<hr/>
Total	15	Total	15

FOURTH YEAR

FDM 419	5	FDM 420	3
HE 357 (356)	3	FDM 422	2
HE elective	3	HE elective	3
Electives	4	Eng 209 or 215	3
	<hr/>	Elective	6
Total	15	Total	17

FASHION MERCHANDISING (FDM)

The option in fashion buying and merchandising offers qualified students the opportunity to prepare for fashion careers with retail and wholesale organizations in buying, merchandising, fashion coordination, publicity, sales or marketing.

FIRST YEAR

FIRST SEMESTER	CREDITS	SECOND SEMESTER	CREDITS
Eng 101	3	Eng 102	3
Psy 100	3	*Natural Science	3
HE 101 (100)	1	HPE	1
Art (Studio A,B,C, or D)	3	Art 101	3
FDM 125	3	Art (Studio A,B,C, or D)	3
FDM 111 (110)	3	FDM 113 (112)	3
	<hr/>		<hr/>
Total	16	Total	16

SECOND YEAR

History 151	3	History 152	3
*Natural Science	3	*Natural Science	3
Econ 150	3	Econ 151	3
FDM 215	2	FDM 216	3
*Humanities	3	FDM 213 (214)	3
Speech 145	3	*Humanities	3
	<hr/>		<hr/>
Total	17	Total	18

THIRD YEAR

*Quantitative Reasoning	3	Eng 209 or 215	3
Acc 100	3	Acc 101	3
Mkt 300	3	Mkt 315	3
FDM 325	3	HE elective	3
HE 255 (252)	3	Elective	2
	<hr/>		<hr/>
Total	15	Total	15

* See "B.A. Requirements"—60 credits in non-introductory courses required for graduation.

SUMMER

FDM 424

2 cr

FOURTH YEAR

Mkt 340	3	Psy 426	3
FDM 427	3	FDM 428	3
FDM 417	3	FDM 418	3
HE 357 (356)	3	HE elective	3
Elective	3	Elective	4
Total	15	Total	16

**FOOD AND NUTRITIONAL SCIENCES (FN) and
FOOD SERVICE ADMINISTRATION (FSA)**

The curricula in foods and nutrition and in food service administration lead to careers in teaching, nutrition research, public health, industry, dietetics, institutional management and business. Curricula have been designed to satisfy the requirements of a liberal education along with a core of specialized subjects that provide students with professional knowledge and competence. Liberal subjects enable the individual to understand himself, his environment and the society within which he functions. Specialized subjects provide the tools and measures to improve and create standards and to pursue a meaningful career in the field of his choice.

FOOD AND NUTRITIONAL SCIENCES

FIRST YEAR

FIRST SEMESTER		SECOND SEMESTER	
	CREDITS		CREDITS
Math 134	4	Speech 145	3
Chem 103	5	Chem 106	5
Eng 101	3	Eng 102	3
HE 101 (HE 100)	1	Anthro 150	3
Psy 100	3	Humanities	3
H.P.E.	1		
Total	17	Total	17

SECOND YEAR

Zool 201	4	Zool 202	4
World Civilization	3	World Civilization	3
Math 135	4	Chem 141	4
FN 275 (HE 120)	3	FN 285 (HE 126) or FN 385 (HE 240)	3
Anthro 250	3	Humanities	3
Total	17	Total	17

THIRD YEAR

Ag Biochem 402	4	Micro 151	4
Physiology 301	4	Soc 201	3
FN 376 (HE 223)	3	HE 357 (HE 356)	3
Econ 150	3	Humanities	3
Electives	3	Electives	2-4
Total	17	Total	15-17

FOURTH YEAR

FN 485 (HE 401)	3	FN 486 (HE 402)	3
FN 477	3	FN 476 (HE 441)	3
FN 499 (HE 399)	4	FN 488 (404)	2
Ag Econ 434	3	FN 492	3
Electives	3	Electives	4
Total	16	Total	15

FOOD SERVICE ADMINISTRATION

Emphasis A—Therapeutic Dietetics

FIRST YEAR

FIRST SEMESTER		SECOND SEMESTER	
	CREDITS		CREDITS
HE 101 (HE 100)	1	Humanities (Art 101)	3
Eng 101	3	Eng 102	3
Math 134	4	Speech 145	3
Chem 103	5	Chem 106	5
Psy 100	3	Econ 150	3
HPE	1		
Total	17	Total	17

SECOND YEAR

FN 275 (HE 120)	3	Acc 101	3
Zool 201	4	Zool 202	4
Micro 151	4	Chem 141	4
Humanities (Eng 154)	3	FSA 281 (HE 234)	3
Acc 100	3	Humanities (Eng 155)	3
Total	17	Total	17

THIRD YEAR

Physiology 301	4	FSA 384 (HE 339)	3
FSA 383 (HE 338)	3	FN 376 (HE 223)	3
FN 385 (HE 240)	3	Hist 342 or Asian St 302	3
Hist 341 or Asian St 301	3	Ed Psy 372	3
Mgmt 300	3	Elective (FSA 483) (HE 440) (Summer)	3
Total	16	Total	15

FOURTH YEAR

FN 485 (HE 401)	3	FN 486 (HE 402)	3
HD 343 (HE 330) or HD 345 (HE 351)	3	FSA 482 (HE 436)	3
PIR 350	3	FN 476 (HE 441)	3
Biochem 441 or Ag Biochem 402	4	FN 490 (HE 445)	3
Elective	3	Electives	4
Total	16	Total	16

FOOD SERVICE ADMINISTRATION
Emphasis B—Industrial Management

FIRST YEAR

FIRST SEMESTER		CREDITS	SECOND SEMESTER		CREDITS
HE 101 (HE 100)		1	Humanities (Art 101)		3
Eng 101		3	Eng 102		3
Math 134		4	Speech 145		3
Chem 103		5	Chem 106		5
Psy 100		3	FSA 181 (HE 123)		3
HPE		1			
		<hr/>			<hr/>
Total		17	Total		17

SECOND YEAR

Zool 201		4	Zool 202		4
Micro 151		4	Chem 141		4
Humanities (Eng 154)		3	Acc 101		3
Acc 100		3	Econ 150		3
FSA 281 (HE 234)		3	Humanities (Eng 155)		3
		<hr/>			<hr/>
Total		17	Total		17

THIRD YEAR

FSA 383 (HE 338)		3	FN 376 (HE 223)		3
FN 385 (HE 240)		3	FSA 283 (HE 235)		3
Hist 341 or Asian St 301		3	Hist 341 or Asian St 302		3
Mgmt 300		3	FSA 384 (HE 339)		3
Acc 200		3	Elective (FSA 483) (HE		
Food Tech 301		2	440) (Summer)		3
		<hr/>			<hr/>
Total		17	Total		15

FOURTH YEAR

Bus Econ 340 or Mgmt 340		3	FN 476 (HE 441)		3
Bus Stat 300		3	Bus Law 300		3
PIR 350		3	FSA 482 (436)		3
FSA 381 (HE 320)		2	Bus Finance 300		3
Electives		4	Electives		3
		<hr/>			<hr/>
Total		15	Total		15

HOME ECONOMICS EDUCATION (HE)

Students who select an option in this major may choose one of several educational approaches in which a knowledge of family life in our society prepares them for teaching persons of various age levels in different organizations and agencies.

Option I. Preparation to meet certification requirements for teaching home economics in the secondary school.

Option II. Preparation for home economics positions with the cooperative extension service.

Option III. Preparation for positions in consumer services in equipment and foods. Such positions are available in a wide variety of companies. Home economists are employed as representatives for consumer relations and promotion of utilities and manufacturer's products in both foods and home equipment.

Option IV. Preparation for positions in community service organizations.

FIRST YEAR

FIRST SEMESTER		SECOND SEMESTER	
	CREDITS		CREDITS
*Math 100	3	*Art 101	3
*Chem 103	4	*Chem 104	4
*Eng 101	3	*Eng 102	3
FDM 113 (HE 112) <i>or</i>		FDM 113 (HE 112) <i>or</i>	
FN 275 (HE 120)	3	FN 275 (HE 120)	3
*Sp 145	3	*Psy 100 or 200	3
Total	<u>16</u>	Total	<u>16</u>

SECOND YEAR

*Zool 201	4	*Zool 202	4
*Eng 150 or 152 or 154	3	*Eng 151 or 153 or 155	3
*Hist 151 or 161 or 251	3	*Hist 152 or 162 or 252	3
*Anthro 150 or 200	3	*Soc 151 or 201	3
FN 375 (HE 222)	4	HD 231 (HE 103)	3
		Elective	1
Total	<u>17</u>	Total	<u>17</u>

THIRD YEAR

*Econ 150	3	*Psy 320	3
HE 255 (HE (252))	3	HE 253 (HE 250)	3
FDM 213 (HE 214)	3	HE 251	3
*Micro 151	4	FN 385 (HE 240)	3
Ed Ef 320	3	HE 371 (HE 270)	3
Elective	1	Elective	3
Total	<u>17</u>	Total	<u>18</u>

FOURTH YEAR

Ed CI 390 <i>or</i>		Ed CI 390 <i>or</i>	
HE 359 (HE 358)	12 or 3	HE 359 (HE 358)	12 or 3
Ed CI 341	3	Ed CI 341	3
Ed EP 372	3	Ed EP 372	3
HD 341 (HE 262)	3	HD 341 (HE 262)	3
HE 357 (HE 356)	3	HE 357 (HE 356)	3
HE 471 (HE 470)	2	HE 471 (HE 470)	3
Total	<u>12 or 17</u>	Total	<u>12 or 17</u>

* UH Core.

HUMAN DEVELOPMENT (HD)

Human development is the study of human behavior over the life span in existing life situations. The focus is upon three interrelated types of phenomena: the physical and psychological changes of the human organism, the interpersonal roles and relationships within the family and the operation of the family within the larger social structure. The processes and consequences of the interaction among these components make up the major foci of the field. Students may satisfy degree requirements in human development with emphasis on Child Development and Family and Community Service. The child development option orients the students toward work with preschool children and their parents in group centers. Family and community service orients the students toward adult education, college student personnel, business, and work in various types of community agencies.

CHILD DEVELOPMENT

Option I

FIRST YEAR

FIRST SEMESTER	CREDITS	SECOND SEMESTER	CREDITS
Eng 101	3	Eng 102	3
Sp 145	3	Rel 150 <i>or</i> IS 132 (4)	3
Math (any) <i>or</i> Phil 200	3	Geog 101 <i>or</i> Geo Sci 101	3
Psy 111	3	Sp 135 <i>or</i> Mus 117-118	3
Psy 112	3	Soc 151	3
HE 101 (HE 100)	1		
	—		—
Total	16	Total	15

SECOND YEAR

Eng 150-155	3	Zool 101	3
Gen Sci 121	4	Geog 102 <i>or</i> Pol Sci 110	3
Hist 251	3	Psy 113	3
Art 101	3	Hist 252	3
HD 231 (HE 103)	3	HD 232 (HE 103)	3
	—		—
Total	16	Total	15

THIRD YEAR

HD 341 (HE 262)	3	HD 342 (HE 262)	3
HD 345 (HE 351)	3	HD 334	3
Anthro 200	3	HD 332 (HE 350)	3
FN 285 (HE 126)	3	HD 343 (HE 330)	3
Psy 214	3	Psy 321	3
	—		—
Total	15	Total	15

FOURTH YEAR

Drama 410	3	HD 430 (HE 422)	3
Soc 324	3	HD 444 (450)	3
HD 431 (430)	4	HD 432 (HE 431)	4
Electives	6	Psy 427 <i>or</i> Soc 410	3
	—	Psy 424	3
	—		—
Total	16	Total	16

FAMILY AND COMMUNITY SERVICE

Option II

FIRST YEAR

FIRST SEMESTER		SECOND SEMESTER	
	CREDITS		CREDITS
Eng 101	3	Eng 102	3
HD 231 (HE 103)	3	HD 232 (HE 103)	3
Psy 100	3	Math 100 or 111 or Phil 200	3
Art 101 or Drama 140 or Mus 160, 165-166, 170	3	Sp 145	3
HE 101 (HE 100)	1	Gen Sci 120	4
Pol Sci 110	3		
	<hr/>		<hr/>
Total	16	Total	16

SECOND YEAR

Eng 150-155	3	Eng 150-155	3
Anthro 150 or 200	3	Soc 151	3
Hist 251	3	Hist 252	3
Psy 214	3	Zool 101	3
Nat Sci	3	Elective	3
	<hr/>		<hr/>
Total	15	Total	15

THIRD YEAR

HD 341 (HE 262)	3	HD 342 (HE 262)	3
HD 343 (HE 330)	3	HD 345 (HE 351)	3
Psy 322	3	Soc 324	3
Ed Ep 429	3	Psy 321	3
Elective	3	Elective	3
	<hr/>		<hr/>
Total	15	Total	15

FOURTH YEAR

HD 441	3	HD 442	3
HD 444 (HE 450)	3	HD 449	3
Soc 472	3	Electives	9
Electives	6		
	<hr/>		<hr/>
Total	15	Total	15

HOME ECONOMICS COURSES

See pp. 4-5 for a discussion of course descriptions.

HOME ECONOMICS (HE)

HE 101 ORIENTATION (1) I

Kraemer

Nature of higher education and role of University in personal development. Home economics as field of study and as professional preparation. Open to freshmen only.

FASHION DESIGN, TEXTILES & MERCHANDISING (FDM)

Associate Professors **TROXELL, UMBEL**; Assistant Professors **FURER, HERRICK**; Instructor **TAKAHASHI**; Lecturer **MELIN**

- 111 (HE 110) ESTHETICS OF CLOTHING (3) I, II, (2 L, 1 Lb)** **Herrick**
 Factors involved in clothing selection. Principles of line, color, design for individual figures. Consumer buying of wardrobes. Open to freshmen and sophomore women.
- 113 (HE 112) BASIC CLOTHING CONSTRUCTION (3) I, II (1 L, 2 Lb)** **Takahashi**
 Selection and use of equipment and commercial patterns. Basic principles of construction and fitting. Lectures introduce psychological and socio-economic aspects of clothing.
- 125 (HE 125) FASHION ANALYSIS (3) I, II** **Troxell**
 Dynamics of fashion and analysis of trends. History, structure, terminology of fashion industry. Fashion merchandise resources—mainland, Hawaiian, import markets.
- 213 (HE 214) TEXTILES (3) I, II (2 L, 1 Lb)** **Herrick**
 Fibers, yarns, fabric construction, finishes related to selection, use, care of textiles.
- 215 (HE 215) BLOCK PATTERN DESIGNING**
 (2) or (3) I (2 L or 2 L, 1 Lb) **Umbel, Furer**
 Principles of pattern making for women's apparel through manipulation of quarter-size master pattern blocks; ready-to-wear construction techniques. Pre: 113. F.D. majors must register for 3 credits.
- 216 (HE 216) FASHION DESIGN & SKETCHING (3) II (2 L, 1 Lb)** **Furer**
 Development of apparel design through sketching fashion figure. Sources of design inspiration. Pre: 111, 125, 215.
- 315 (HE 315) DRAPING (3) I (1 L, 2 Lb)** **Umbel**
 Principles of pattern making through draping muslin models to standard measurements. Pre: 215, 216.
- 316 (HE 316) ADVANCED PATTERN DESIGN (3) II (1 L, 2 Lb)** **Furer**
 Fashion designs made by flat pattern method. Muslin proofs constructed and patterns graded to standard measurements. Pre: 315.
- 325 (HE 325) FASHION SALES PROMOTION (3) I** **Melin**
 Consumer buying motivation. Analysis of selling techniques and procedures. Promotion of fashion merchandise through variety of media. Pre: 125.
- 415 (HE 416) CREATIVE CLOTHING CONSTRUCTION**
 (1 or 3) I, II (2 L or 2 L, 2 Lb) **Umbel**
 (Lecture-Demonstrations = 1 credit; plus two laboratories = 3 credits)
 Clothing construction as creative expression. Construction techniques that contribute to individuality in dress. Pre: 113.
- 417 (HE 417) COSTUMES OF THE WESTERN WORLD (3) I** **Furer**
 Chronological study of costume as related to culture and customs from ancient through modern times. Pre: Hist 151-152.
- 418 (HE 418) COSTUMES OF ASIA (3) II** **Umbel**
 Development and characteristics of costumes and fabrics of China, Japan, Korea, Philippines, India, Southeast Asia; relation to customs and culture. Pre: Hist 151-152.
- 419 (HE 419) APPAREL DESIGN STUDIO (5) I (4 Lb)** **Furer**
 Designing, executing patterns, muslin proofs, grading, completion and showing of ready-to-wear collection by seniors. Pre: 316, 417, 418.
- 420 (HE 420) APPAREL DESIGN STUDIO (3) II (2 Lb)** **Furer**
 Interpreting fashion sketches and developing muslin proofs; continuation of grading. Pre: 419.

- 422 (HE 422) ADVANCED SKETCHING (2) II** **Furer**
Development of original designs for wearing apparel presented in portfolio form. Concurrent with 420. Pre: 216.
- 424 (HE 421) FIELD EXPERIENCE (2) II** **Furer & Troxell**
Field experience in fashion industry including weekly discussion period. Concurrent with 420. Pre: 3.0 GPR for fashion design courses; consent of instructor.
- 427 (HE 427) FASHION MERCHANDISING (3) I** **Troxell**
Buying and selling fashion merchandise. Organization and types of outlets, sources of buying information, resident and central buying offices, value determinants in selection of merchandise. Pre: 325.
- 428 (HE 428) FASHION MERCHANDISE PLANNING AND CONTROL (3) II** **Troxell**
Theories and procedures in purchase planning and inventory methods involved in operation of a fashion department or shop. Pre: 427, Acct 100-101.
- 499 (HE 399) DIRECTED READING & RESEARCH (var) I, II** **Staff**
- 699 (HE 699) DIRECTED READING & RESEARCH (var) I, II** **Staff**

FOOD & NUTRITIONAL SCIENCE (FN)

Professor BEATON; Associate Professors LICHTON, YOUNG; Assistant Professors CHING, HILKER, HOTCHKIN, MARETZKI, STANDAL, STONER, WEDDLE, WENKAM; Lecturer MIHM

- 275 (HE 120) FOOD PREPARATION (3) I, II (2 L, 2 Lb)** **Weddle**
Scientific principles underlying preparation of foods to yield products of standard quality.
- 285 (HE 126) INTRODUCTION TO HUMAN NUTRITION (3) I, II (3 L)** **Maretzki**
Basic principles and application of nutrition, including nutrients, food sources, essentials of adequate diet.
- 375 (HE 222) MEAL MANAGEMENT (4) I, II (2 L, 2 Lb)** **Weddle**
Management of time, energy, money in relation to feeding family. Consideration of nutritional needs and food patterns. Advance registration required. Pre: 275.
- 376 (HE 223) ADVANCED FOODS (3) II (1 L, 2 Lb)** **Weddle**
Comparative food studies with emphasis on physical and chemical variables. Pre: 275, Chem 104 or 106.
- 385 (HE 240) PRINCIPLES OF HUMAN NUTRITION (3) I (3 L)** **Maretzki**
Application of nutrition principles to human dietary requirements with emphasis on physiological and metabolic aspects. Open to students of nursing, and others with consent of instructor. Pre: Chem 103-104 or 106; Zool 201-202.
- 476 (441) CULTURAL ASPECTS OF FOOD (3) II (3 L)** **Wenkam**
International and regional influences on meal patterns. Cultural and esthetic values of food.
- 477 FOOD COMPOSITION (3) I (1 L, 2 Lb)** **Staff**
Proximate analyses of foods and their interpretation. Pre: Math 134 and Chem 331 or equivalent; consent of instructor.
- 485-486 (HE 401-402) ADVANCED HUMAN NUTRITION (3-3) I, II (3 L)** **Beaton**
Biochemistry and physiology of nutrition; fundamental concepts of human nutrition. Pre: Ag Biochem 402 or Biochem 441; FN 285 or 385; or equivalents.
- 488 (HE 404) HUMAN NUTRITION LAB (2) II (2 Lb)** **Staff**
Laboratory and animal experimentation to demonstrate principles of human nutrition. Pre: consent of instructor.

- 490 (HE 445) DIET AND DISEASE (3) II (3 L)** **Stoner**
 Modifications of normal diet for use in therapeutic conditions. Physiological bases for modifications. Pre: 385.
- 492 PRODUCT EVALUATION (3) II (1 L, 2 Lb)** **Maretzki**
 Product evaluation as essential phase of research and development in food industry. Training in such techniques as triangle tests, profile panels, preference tests, rating scales, concept tests, home use tests. Pre: Psy 100; Ag Econ 434 or equivalent; 477; consent of instructor.
- 499 (HE 399) DIRECTED READING & RESEARCH (arr.) I, II** **Staff**

GRADUATE COURSES IN NUTRITION (Nutr)

- 676 (622) NUTRITIONAL AND METABOLIC DISEASES (2) II (2 L)** **Lichten**
 Survey of disease mechanisms in undernutrition, overnutrition, malabsorption, fluid imbalances; selected examples of disorders, or inborn errors of metabolism. Pre: 485-486 or consent of instructor. (Alt. yrs., offered 1968-69.)
- 677 NUTRITION IN REPRODUCTION, GROWTH AND DEVELOPMENT**
 (3) I (3 L) **Standal**
 Nutritional requirements as altered by physiological stresses of pregnancy and periods of growth; emphasis on mechanisms. Pre: 485-486 or equivalent. (Alt. yrs., offered 1968-69.)
- 678 NUTRITION IN AGING (2) II (2 L)** **Hilker**
 Special nutritional considerations respecting geriatric population; nutrition and longevity. Pre: 485-486 or equivalent. (Alt. yrs., offered 1968-69.)
- 680 RESEARCH METHODS IN NUTRITION (3) II** **Young**
 Lecture-laboratory demonstrating principles and applications of instrumentation and animal-handling techniques in nutrition research. Pre: consent of instructor.
- 681 (701) SEMINAR (1) I** **Hilker**
 Student presentations of literature reviews and research. Pre: consent of instructor. May be repeated.
- 682 (651) NUTRITION STATUS (3) II (3 L)** **Beaton & Standal**
 Nutrition survey techniques including biochemical assessment of nutritional status in man. Pre: 485-486 or consent of instructor. (Alt. yrs., offered 1968-69.)
- 684 LIPIDS IN HEALTH & DISEASE (2) II (2 L)** **Young**
 Lipid metabolism and nutrition with particular emphasis on cardiovascular diseases. Pre: 485-486 or consent of instructor. (Alt. yrs., offered 1968-69.)
- 685-686 ADVANCED HUMAN NUTRITION (1-1) I, II (Yr)** **Beaton**
 Biochemistry and physiology of nutrition in relation to metabolism and function; fundamental concepts and applications of nutrition. Lecture-conference for graduate students registered concurrently in 485-486.
- 699 DIRECTED READING & RESEARCH (arr.) I, II** **Staff**
- 801 (800) THESIS (arr.) I, II** **Staff**

FOOD SERVICE ADMINISTRATION (FSA)

- 181 (HE 123) BASIC PRINCIPLES OF QUANTITY FOOD SERVICE MANAGEMENT**
 (3) I, II (1 L, 2 Lb) **Ching**
 Introduction to fundamentals of basic food preparation, stressing interrelationship of physical, biological, chemical changes in food caused by heat application.

- 281 (HE 234) QUANTITY FOOD PRODUCTION (3) I, II** Hotchkin
Principles of menu planning, production control, work methods analysis, employee training, preparation techniques, elementary food cost controls, quality analysis of food processed in quantity. Pre: 181.
- 283 (HE 235) CLASSICAL FOOD & BEVERAGE MANAGEMENT (3) I, II** Hotchkin
Study of classical beverages; production characteristics in relation to food service planning and classical cuisine. Lab experience with gourmet and ethnic cookery. Pre: 281.
- 381 (HE 320) FOOD COST ACCOUNTING (2) I** Staff
Accounting principles applied to food service operations, systems and controls, with emphasis on interpretation of financial statements. Budgeting and control of food beverage and labor costs. Pre: Acc 100-101.
- 383 (HE 338) SELECTION AND PROCUREMENT OF FOOD AND SUPPLIES (3) I, II** Staff
Principles of procurement; its relationship to purchasing ethics, policies, specifications. Quality standards for equipment and supplies. Field experience required. Pre: 281.
- 384 (HE 339) FOOD FACILITIES SYSTEM PLANNING (3) II** Hotchkin
Analysis of work methods using time and motion study. Layout, design, procurement of furnishings for dining and kitchen facilities and auxiliary space. Pre: 383.
- 482 (HE 436) SEMINAR IN FOOD SERVICE OPERATION PROBLEMS (3) II** Staff
Scientific methods of problem-solving and decision-making in analysis of case problems in public food service organizations. Senior standing in major field or consent of instructor.
- 483 (HE 440) FIELD EXPERIENCE IN INSTITUTIONAL MANAGEMENT (0-3) I, II** Staff
Organized on-the-job learning experience in institutional food service supervised by employer and coordinating instructor.
- 499 (HE 399) DIRECTED READING & RESEARCH (arr.) I, II** Staff
- 699 DIRECTED READING & RESEARCH (arr.) I, II** Staff

HOME ECONOMICS EDUCATION (HE)

Associate Professor TULL

- 371 (270) HOME ECONOMICS EDUCATION (3) I, II** Tull
Curriculum design. Current educational philosophies and practices in home economics education. Teaching materials and techniques.
- 471 (470) SPECIAL PROBLEMS IN HOME ECONOMICS EDUCATION (2) I, II** Tull
Individual and group problems selected according to interests and needs of fourth- and fifth-year students in home economics education. Development of teaching materials.
- 475 (480) FIELD EXPERIENCE IN HOME ECONOMICS EDUCATION (3) I, II** Tull
Field experience carried out in connection with Cooperative Extension Service and other community projects dealing with family living. Readings, conferences, reports required. Pre: consent of instructor.

HOME MANAGEMENT AND FAMILY ECONOMICS (HE)

- 251 HOUSEHOLD EQUIPMENT (3) I, II** Staff
Selection, optimum use, upkeep of household equipment. Emphasis on design, construction, materials, consumer use.
- 253 (250) MANAGEMENT OF FAMILY RESOURCES (3) I, II** Staff
Identification of resources; application of management to resources to reach family goals; role of decision-making in management.

- 255 (252) FAMILY HOUSING AND HOME FURNISHINGS (3) I, II** **Staff**
Evaluation of housing for family living. Selection, use, arrangement of furnishings and accessories in the home. Pre: Art 101.
- 357 (356) FAMILY ECONOMICS (3) I, II** **Staff**
Role of family as consumer unit in the economy. Pre: Econ 150.
- 359 (358) HOME MANAGEMENT LAB (3) I, II** **Staff**
Option I—Unmarried students
Supervised residence laboratory in home living. Application of management concepts and decision-making. Group communication and relationships. Students share subsistence cost. Pre: senior standing; 253 and FN 375.
Option II—Married students
Readings, group discussions and home projects involving management concepts and decision-making. Pre: senior standing; 253 and FN 375.
- 461 (560) MANAGEMENT OF PERSONAL & FAMILY FINANCES (3) I** **Staff**
Application of management principles to major financial alternatives. Role of decision-making in financial management. Relationship of financial decisions to life cycle of individual and family.
- 499 (HE 399) DIRECTED READING & RESEARCH (arr.) I, II** **Staff**
- 699 DIRECTED READING & RESEARCH (arr.) I, II** **Staff**

HUMAN DEVELOPMENT (HD)

Professors CHANTINY, KRAEMER, LAMPARD; Associate Professor ALLEN; Instructors BROWN, SCHWITTERS; Lecturer BRANDON

- 231-232 (HE 103) INTRODUCTION TO HUMAN DEVELOPMENT (3-3) I, II (yr)** **Schwitters**
Principles of development from birth to puberty. Emphasis on impact of family interaction; practical and social implications of existing knowledge from behavioral sciences. Observation of situations involving children. Pre: Psy 100 or 111-112.
- 332 (HE 350) CULTURAL ASPECTS OF CHILD REARING (3) II** **Staff**
Cultural context of socialization: class and ethnic differentials. Cultural influences on individual and family, on child rearing practices and personality development. Pre: Psy 350 and Anthro 200.
- 333 (HE 361) INTERPRETATION OF BEHAVIOR (2) I** **Schwitters**
Interpretation of behavior and development during preschool years through directed observation in laboratory and selected readings. Pre: Psy 350 and consent of instructor.
- 334 GROUP WORK WITH CHILDREN (3) II** **Schwitters**
Principles underlying group work with children. Understanding human growth and interpersonal relationship and maximizing use of environment. Major focus: analysis and program planning. Pre: 231-232; consent of instructor.
- 341-342 (HE 262) FAMILY RELATIONSHIPS (3-3) I, II (yr)** **Lampard**
Study of interrelationships of individual and family involving various stages of life cycle through courtship and early marriage (341). Marriage and later stages of life cycle, emphasizing middle years and aging family (342). Pre: Psy 100 and Soc 151 or 201.
- 343 (HE 330) HUMAN NEEDS AND COMMUNITY RESOURCES (3) I, II** **Brown**
Cross-cultural and historical study of organization and implementation of community-wide programs for meeting family needs. Role of individual and family in coordination of home and community resources. Pre: Soc 151 or 201.

- 345 (HE 351) GROUP LEADERSHIP (3) I, II** **Allen**
Sociological and psychological concepts pertaining to individual motivation and internal and external group forces. Application of group techniques to planning and conducting activities related to human resources development.
- 430 (HE 422) WORK WITH PARENTS (3) II** **Chantiny**
Study of parental behavior as function of individual personality and cultural and social context. Interpretation of research in behavioral sciences with view to policy and practices of working with parents. Field experience with parent groups in local community. Pre: senior standing and consent of instructor.
- 431-432 (HE 430-431) PRESCHOOL PRACTICUM (4-4) I, II (yr)** **Staff**
Application of theory and early childhood education to experience in preschool. Students will arrange morning hours 2 days each week for participation in preschool. Pre: 333 and consent of instructor.
- 441 THE ADOLESCENT IN THE FAMILY AND COMMUNITY (3) I** **Staff**
Multidisciplinary study of adolescence as stage of development within family life cycle.
- 442 COMMUNITY ACTION (3) II** **Allen**
Community analysis, mobilization, organization of human and community resources for social action. Focus on improvement of family living. Field studies. Pre: 343, 345.
- 444 (HE 450) MALE-FEMALE SUBCULTURES (2) II** **Kraemer**
Interdisciplinary approach to study of male and female roles in family and society. Consideration given to cross cultural variation and to impact of social change.
- 449 FIELD EXPERIENCE IN HUMAN DEVELOPMENT (0-3) I, II** **Staff**
Application of human development theory emphasizing group participation and leadership development. Students required to obtain work during summer or other suitable time which provides group experience such as developing and implementing program or serving in leadership capacity.
- 641 (HE 650) SEMINAR IN HUMAN DEVELOPMENT, FAMILY RELATIONSHIPS (3) I, II** **Chantiny**
Review and analysis of literature related to human development and interpersonal relationships within family. Projects carried out according to group interests.
- 646 (Ed EF 684) INTERPERSONAL RELATIONSHIPS (3) II** **Lampard**
- 499 (HE 399) DIRECTED READING & RESEARCH (arr.) I, II** **Staff**
- 699 DIRECTED READING & RESEARCH (arr.) I, II** **Staff**

Hawaii Agricultural Experiment Station

The facilities of the station, including the research staff, the field laboratory, and the Agricultural Engineering Institute, are available in part for undergraduate and graduate instruction. Students are able to study the latest methods and results of agricultural research. Close collaboration is maintained with the stations of the Hawaiian Sugar Planters' Association and the Pineapple Research Institute of Hawaii.

The function of the station is "to promote scientific investigation and experiments respecting the principles and applications of agricultural science" (Hatch Act of 1887). Investigations cover the physiology of plants and animals;

diseases, insects, and parasites; agronomy, soils, food science, food processing, agricultural engineering, biochemistry, human and animal nutrition; breeding and genetics; as well as other research in culture, production, and marketing.

Facilities for carrying on this work are provided by the headquarters offices and laboratories located on the University campus; by research farms at Poamoho and Waimanalo, Oahu; and by branch stations on the neighbor islands with attached laboratories and experimental farms. These include the Kona Branch Station; the East Hawaii Branch Station with farms at Malama-Ki, Waiakea, Volcano, and Hamakua and Waimea; the Maui Branch Station with the Haleakala Station; the Kauai Branch Station. Modern research facilities for poultry and animals are available at the Animal Research Center at Waialeale, Oahu.

Cooperative Extension Service in Agriculture and Home Economics

This program, conducted jointly by the College and the United States Department of Agriculture, is devoted to the advancement of agriculture in Hawaii and to the improvement of family living.

The Cooperative Extension Service maintains personal contacts with the rural population through its field staff of county extension agents and county home economists, with the help of the specialists at the state headquarters on the University campus. The county staff operates out of offices located as follows:

Oahu: Honolulu, Kaneohe, Wahiawa, Waianae; Kauai: Lihue; Hawaii: Hilo, Naalehu, Kealahou, Honokaa, Kohala; Maui: Wailuku, Kula; Molokai: Kaunakakai.

Improved farm and home practices are taught by means of practical demonstrations before University extension clubs of men and women, commodity groups, special interest groups, and 4-H clubs of boys and girls. This group instruction is supplemented by farm and home visits and mass media communications. Each year various extension short courses and 4-H events are held on the University campus.

An important phase of extension work is to demonstrate in a practical manner the results of scientific experiments conducted by the Hawaii Agricultural Experiment Station, by state stations, and by the USDA.

Graduate Division

THE GRADUATE DIVISION provides opportunities for further study, research, and professional training to students who have earned a bachelor's degree from an accredited institution of higher learning. The graduate program is not, however, merely an extension of work at the undergraduate level. More rigorous academic standards are applied and a greater degree of independence in the pursuit of knowledge is required. Special emphasis is placed on the cultivation of scholarly attitudes and methods of research.

The University offers graduate work leading to:

- 1) The doctor of philosophy in agricultural economics, anthropology, astronomy, biochemistry, biophysics, botany, chemistry, drama and theatre, educational psychology, electrical engineering, entomology, genetics, geography, geosciences, history, horticulture, linguistics, microbiology, oceanography, pharmacology, philosophy (Western, Asian, and comparative), physics, physiology, political science, psychology, soil science, and zoology.
- 2) The master's degree in agricultural economics, agricultural engineering, agronomy, American studies, animal sciences, anthropology, art, Asian studies, astronomy, biochemistry, biophysics, botany, business administration, chemistry, Chinese, civil engineering, drama and theatre, economics, educational administration, educational communications, educational foundations, educational psychology, electrical engineering, elementary education, English, entomology, food science, French, genetics, geography, geosciences, German, history, horticulture, Japanese, library science, linguistics, mathematics, mechanical engineering, microbiology, music, nursing, nutrition, ocean engineering, oceanography, Pacific islands studies, pharmacology, philosophy, physics, physiology, plant pathology, political science, psychology, public health,* secondary education, social work,* sociology, soil science, Spanish, speech, speech pathology and audiology, teaching of English as a second language, zoology, and architecture.
- 3) The professional certificate for teachers in the employ of the state Department of Education. (See "College of Education.")

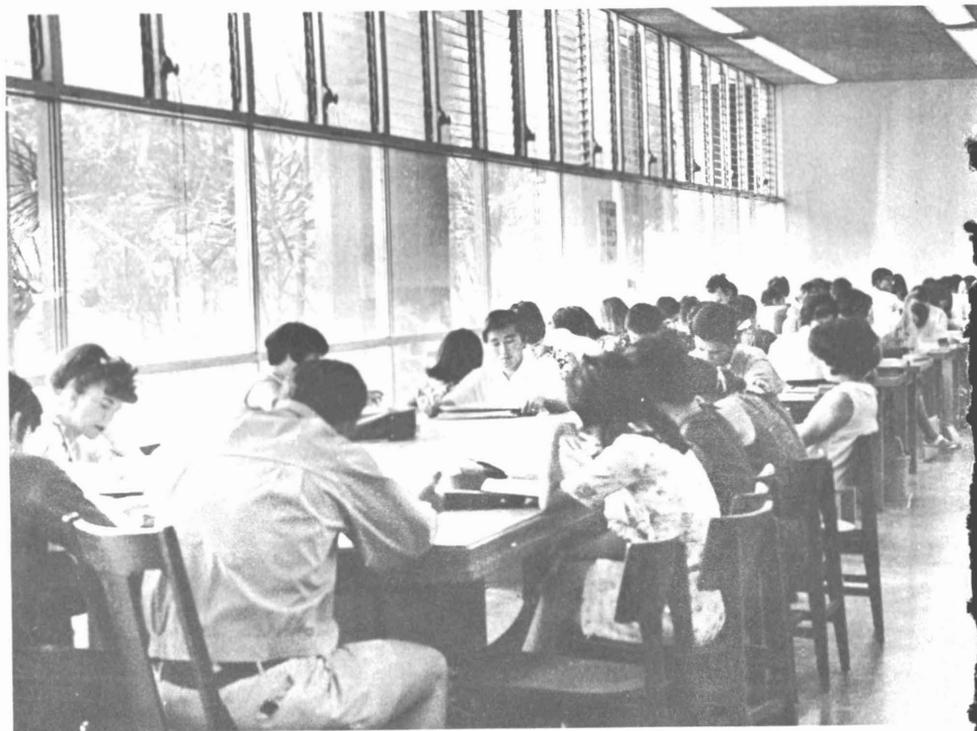
Students may likewise earn graduate credit at the University for transfer to other institutions.

To obtain the 1968-69 issue of the *Graduate Bulletin*, send your order and 25¢ in coin or money order to: University Bookstore, 1760 Donaghho Road, University of Hawaii, Honolulu, Hawaii 96822. Available after June 1968.

* For these programs see the *Graduate Bulletin* or bulletins of the respective schools.



The School of Library Studies helps staff libraries in the United States and Pacific basin. Candidates for the M.L.S. degree gain practical experience at the Sinclair (undergraduate) and Graduate Research (shown above) libraries on campus.



School of Library Studies

THE GRADUATE SCHOOL OF LIBRARY STUDIES exists to prepare professional personnel for academic, public, school and special libraries, and to promote library service in general through research and field study. The School was established in 1965 and was accredited by the American Library Association in 1967.

Academic and placement advising is available in the office of the Associate Dean.

Requirements for Admission*

1. Graduation from an approved institution of higher learning with a bachelor's degree representing a broad cultural background plus a field of specialization.

2. Evidence in the college record of above-average scholastic ability and promise for successful graduate study, usually shown by graduation with a *B* average, or by a Graduate Record Examination Aptitude Test score of 500 in both parts of the test.

3. Ability to read at least one modern foreign language.

4. Evidence of professional promise as shown by reference reports and/or personal interviews.

Students may be admitted to the Graduate School of Library Studies as *Regular Students*, *Probational Students*, or *Special Students*, depending on qualifications, background, and purpose.

Requirements for the Degree. 30 to 36 credit hours of approved graduate study, depending upon previous education and library service, are required for the M.L.S. degree. The maximum course load is 15 credit hours per term, and 36 hours would therefore require two terms and a summer on a full-time basis. The program may be undertaken on a part-time schedule with the expectation that it will normally be completed within a two- to three-year period.

Master of Library Studies Program. The program leading to the degree of Master of Library Studies consists of a core curriculum to provide the basic professional equipment for all types of library work and enough electives to enable each student to explore one area of specialization.

* For application forms or for more information write to: The Graduate School of Library Studies, University of Hawaii, Honolulu, Hawaii 96822.

The normal basic curriculum includes the following courses, to be taken generally in the order given: 610, 601, 605, 678, 647, 602, 650, 615. School librarians, in addition, will take 681, 682, and 683.

Academic Advisory Service. The office of the associate dean provides academic advice and placement counseling.

Library Studies (LS)

Professors AYRAULT, DEANGELO, SCHOFIELD, SHAW, STEVENS, WEST; Associate Professors ANDREWS, HARRIS, SHARP; Assistant Professor MCNEIL; Lecturers CROZIER, DANG, FERGUSON, HUNT, JACKSON, KAMIDA, MCALISTER, TSUI, WHEELWRIGHT

601 BIBLIOGRAPHY AND REFERENCE SOURCES (3) Sharp, Tsui, West

Analysis of means by which availability and content of graphic materials recorded; characteristics and problems of national and subject bibliography; function of librarian as bibliographer. Introduction to materials and methods for locating information in general reference sets, specific fact sources, periodical indexes, abstract series; analytical and searching procedures for simple inquiries.

602 ADVANCED REFERENCE SOURCES (3) Harris, West

Continued discussion of various types of general reference tools. Introduction to subject approach in reference work through three major areas: sciences, social sciences, humanities. Each area analyzed in terms of characteristics of literature and of typical problems and methods of reference work; major works in each area studied as examples. Pre: 601.

605 BASIC CATALOGING AND CLASSIFICATION (3) Ayrault, McAlister, Kamida

Introduction to cataloging in research or large general library; terminal course in cataloging for school or small popular library. Principles and practice of descriptive cataloging, structure, application of Dewey Decimal Classification and Sears' List of Subject Headings; use of printed cards.

606 ADVANCED CATALOGING AND CLASSIFICATION (3) Ayrault

Continue 605, using especially Library of Congress scheme to illustrate principles and practices of organization of materials and subject analysis in research and large general libraries. Considers problems peculiar to handling of certain forms of materials; provides opportunity for study of cataloging in collections specialized by subject. Pre: 605.

610 SOCIAL FUNCTIONS OF LIBRARIES (3) Andrews, Jackson

Introduction to librarianship: librarianship as a profession, history of books and libraries, survey of current programs and trends in American libraries, international aspects of librarianship.

615 BUILDING LIBRARY COLLECTIONS (3) Dang, McNeil, West

Criteria for evaluating and selecting library materials, devising and maintaining acquisition program, structure of book trade. Findings of studies of library use drawn upon where applicable. Pre: 601.

618 GOVERNMENT DOCUMENTS (3) Stevens

Sources, types, uses of government documents, both state and federal; their acquisition and organization for use.

642 AUDIO-VISUAL SERVICES IN LIBRARIES (3) Schofield

Films, filmstrips, recordings, related media as applied to various types of educational programs in libraries. Sources, evaluations, organization, use of audio-visual materials. Materials viewed, audited, judged.

647 MANAGEMENT OF LIBRARY OPERATIONS (3)**Andrews**

Philosophies and techniques of scientific management, their application to library operations such as circulation, acquisition, cataloging routines. Provides foundation in principal routines in libraries of all types and in theory and practice of scientific management to enable students to analyze routines and, where necessary, to design improved methods for library operations.

650 ADMINISTRATION OF LIBRARIES (3)**Andrews, Hunt, Stevens**

Organization and human factors for effective library service. Covers governmental relations, policy making, structure of jobs and departments, communication and coordination, staffing, financing, housing. Case studies used.

660 SCIENCE AND TECHNOLOGY LITERATURE (3)**Crozier**

Bibliographical structure and sources used in building and servicing collections and providing information in basic and applied sciences. Special attention to pure sciences such as physics, chemistry, biology and to applied fields such as medicine, agriculture, engineering.

662 BUSINESS AND ECONOMIC LITERATURE (3)**Wheelwright**

Bibliographic structure and sources used in building and servicing collections and providing information in commercial fields; for students and librarians interested in business and social science services in public, university, company libraries.

665 SPECIAL LIBRARIES**Ferguson**

Survey of major types of special libraries with emphasis on purpose, organization, physical facilities, collections and services of special libraries in business, government, professional associations.

670 LITERATURE SEARCHING AND DOCUMENTATION (3)**Shaw**

Special intellectual and mechanical tools for storage, searching, reproduction, transmission of information. Deals with audience and materials of documentation. Of particular value to service in special research, large public, university libraries.

678 READER SERVICES (3)**Andrews, Harris**

Introduction to major forms of library services to the reader as developed in libraries of all types. Emphasis on study of community served as basis for program of reader services. Wide reading, class lectures and discussion, student projects, opportunity to observe services provided in public, school, college, special libraries in the area.

681 READING MATERIALS FOR CHILDREN (3)**DeAngelo**

Historical background of children's literature; selection aids, criteria for evaluating, evaluation of contemporary children's books and recordings on basis of development needs of children through sixth grade. Opportunity to develop skills in storytelling.

682 READING MATERIALS FOR YOUTH (3)**DeAngelo, Schofield**

Evaluation of books and magazines for junior and senior high school age; book selection tools and criteria for judging. Developmental needs of young people with attention to materials for exceptional readers. Methods of stimulating reading such as book lists and book talks.

683 SERVICE FOR CHILDREN AND YOUNG PEOPLE (3)**DeAngelo, Schofield**

Organization and provisions of services from preschool through young adult years, in school and public libraries. Special attention to preparation of lessons in use of books and libraries.

698 FIELD SEMINAR (3)

Honors course which may be taken at end of professional program of study. Students in small groups apply all principles learned to analysis of their field experience. Designed to promote understanding of total library programs, and functions and interrelations of its services. Serves as practice teaching course for school librarians.

701 ADMINISTRATION OF LIBRARIES IN ASIA (3)**Nunn**

Governmental and fiscal policies and programs, personnel administration, policy making, buildings and equipment for libraries in Asian countries.

705 ASIAN REFERENCE SOURCES (3)**Nunn**

Bibliographical and reference tools and services in Asian countries with special attention to source materials in other than Western languages.

706 TECHNICAL SERVICES FOR FAR EASTERN COLLECTIONS (3)**Tsuneishi**

Principles and practices of acquiring and organizing Far Eastern Oriental collections. Special attention given to book trade and to special problems of cataloging and classifying Chinese, Japanese, Korean books and materials. Pre: 606, 615 or equivalent.

715 SEMINAR IN LIBRARY DEVELOPMENT (3)

Each student will prepare report on state of development of library service in a particular country and will outline a program for library development to provide an optimum scheme for library services on all levels in that country. He will submit this plan with budget, personnel requirements, a scheme of feasible priorities for achieving the library program proposed. This will be subjected to class discussion, after which he will submit a revised plan.

Hilo Campus

THE UNIVERSITY OF HAWAII'S HILO CAMPUS is located on Hawaii, "The Big Island," 200 miles southeast of Honolulu. Within a five-minute drive of downtown Hilo, the campus is away from traffic on spacious grounds surrounded by state lands, an atmosphere encouraging quiet and relaxed study. There are magnificent views of Hilo Bay and of the two highest peaks in the Hawaiian Islands—Mauna Loa and Mauna Kea.

Established in 1947 as an Extension Division in Hilo with 46 students, renamed Hilo Branch in 1951, the institution acquired its present campus in 1953 and became the Hilo Campus of the University of Hawaii. Current enrollment is over 700 students.

Academic Program. Courses are grouped into three divisions: Humanities, Sciences, and Social Sciences. The instructional program offers a wide range of freshman and sophomore courses in the College of Arts and Sciences, permitting the student to complete the courses necessary for junior standing upon transfer to the Manoa campus or to the upper division of another university. A few lower division courses in engineering and in tropical agriculture are also offered.

English Language Institute (ELI) courses are offered at Hilo Campus for foreign students as required according to the testing and placement of the institute at Manoa Campus.

The academic year is divided into two 18-week semesters and a 6-week summer session.

Campus buildings and facilities are designed for maximum and varied uses by students, faculty, and community. Recent construction includes the library and a physical science building which houses laboratories, offices, and research facilities for chemistry and physics. The laboratories and offices of the East Hawaii Branch of the Agricultural Experiment Station are on campus; other offices of the Cooperative Extension Service in Hawaii County are at Naalehu, Kealahou, Honokaa, and Kohala. The Cloud Physics Observatory of the Hawaii Institute of Geophysics was established at the Hilo Campus in 1965.

The library serves students, faculty, and persons in the community with professional research or reference interests. It contains over 40,000 bound volumes, and currently receives 550 serial titles. The library is also a partial depository for United States Government documents. Other library services throughout the state are readily available to students.

A dormitory, completed in 1962, houses 28 women and 24 men students in separate wings off a large central lounge. A new theatre-auditorium is planned for construction.

Center of athletic activity, the gymnasium has folding bleachers which permit a variety of daytime and evening functions. Next to it, the ten-acre athletic field provides for baseball, softball, and tennis courts. A municipal golf course and a swimming pool are available for use by students. Bus service is provided for classes using these facilities. The Hilo Civic Auditorium and Hoolulu Park are also used for some athletic contests.

East-West Center Students. An undergraduate program for East-West Center grantees was initiated in the fall of 1965 with ten students from Laos, Western and American Samoa, Tonga, and Saipan. This program has been expanded to include additional students from Vietnam, Fiji, and Cook Islands.

Other Foreign and Mainland Students. Additionally, there are students from other foreign countries including Japan, Korea, the Philippines, and Norway.

A greater number of mainland students have also enrolled at the Hilo Campus in the past three years.

Community and Professional Services. The Hilo Campus sponsors a number of public lectures and discussions by visiting scholars and officials from the international to the county levels, and a radio program "Hilo Campus Speaks." Faculty members give occasional public lectures and participate in various educational workshops. Students are active in community and educational affairs and have sponsored political forums and a film series.

Hilo Campus works closely with the Historical and Archeological Society, the Department of Education, the Friends and Alumni of Hilo Campus, the American Association of University Women, the American Association of University Professors, the Bernice P. Bishop Museum, and other professional organizations.

Communications. Address all inquiries to: Provost, University of Hawaii Hilo Campus, Hilo, Hawaii 96720.

For revised listing of courses offered at Hilo, see Hilo Campus Catalog for 1968-69, or request semester's class schedule from Provost's office.

COURSES OFFERED AT HILO CAMPUS 1968-69

Within each of the three area divisions—Humanities, Sciences, Social Sciences and Education—courses are listed alphabetically by departmental titles in numerical order. Credit hours are shown in parentheses, and also "Lb" when there is laboratory. Two-semester sequences are indicated by hyphenated numbers for both courses and credit hours; unless otherwise noted, such courses should be taken in sequence. Fees, prerequisites, etc., as noted.

Lower division courses are numbered 100–199, upper division courses 200–599.

Class time and room schedules are issued prior to registration for each semester or summer session.

Humanities Division

Professor NELSON; Associate Professors ALLEN (Chairman), PILECKI; Assistant Professors H. DROSTE, MOON; Acting Assistant Professors L. KANNO, WELD; Instructors BLACK, CREMER, Y. DROSTE, FULLER, HICKS, KARTSOUNIS, KNOX, MILLER, YOSHIDA; Lecturer SAIGO; Associate Professor Bander; Acting Assistant Professors HEARD, I. PILECKI, TREACY

Art 101 INTRODUCTION TO THE VISUAL ARTS (3)

Survey of visual arts to develop appreciation and evaluation of esthetic form as revealed in painting, sculpture, architecture. Slides, films, readings, discussions, lectures analyze structural features of visual arts and their relationships to the image. Of special value to majors in art, business and economics, architecture, home economics; recommended elective in Arts and Sciences; no prerequisite.

Art 113 INTRODUCTORY STUDIO A (3) I, II

Perception: visual responses to nature; materials, techniques, modes of representation. Problems in two and three dimensions: photography, drawing, painting, sculpture, construction. Pre: 101 (may be taken concurrently).

Art 114 INTRODUCTORY STUDIO B (3) I, II

Emphasis on light: environmental; general intensity; value range; sources; chiaroscuro; pattern; principles of color. Problems in two and three dimensions: drawing, painting, sculpture and design. Pre: 101 and 113.

Art 213 FIGURE DRAWING (3)

Intensive drawing from the human figure. May be repeated.

Art 223 PAINTING A (3) I, II

Painting from studio and outdoor subjects. Elements of pictorial style.

Art 224 PAINTING B (3) I, II

Painting from identifiable sources; emphasis on expression and structure. Oil and related media. Pre: 223.

Art 270 ASPECTS OF EUROPEAN AND AMERICAN ART (3)

Major developments in arts of Europe and America.

Drama 160 (140) INTRODUCTION TO DRAMA AND THEATRE (3)

Representative plays from Classical Greek drama to contemporary theatre, studied as illustrative of changing forms in the theatre and dramatic literature.

Eng 101–102 EXPOSITORY WRITING (3–3) Yr.

101: training in analysis of expository essays; introduction and practice of principal expository procedures, including assertion, exemplification, definition, classification. 102: study and practice of argument and persuasion; assembling and organizing research materials; analysis and evaluation of one or two works of imaginative literature; introduction to study of prose style. 101–102 or 105 prerequisite to all sophomore literature courses.

Eng 105 EXPOSITORY WRITING (3)

Intensive one-semester course in analysis and writing of expository essays, providing practice in different expository procedures, opportunities for students to improve prose style. Open only to freshmen who qualify for course by performance on Freshman English Anticipatory Exam or College Board Advanced Placement Examination in English.

Eng 199 DIRECTED READING OR RESEARCH, LOWER DIVISION (1-3)

Permission of instructor required.

Eng 251-252 (150-151) MAJOR WORKS OF BRITISH LITERATURE (3-3) Yr.

251: Middle Ages to 1800; 252: 1800 to the present. This course or 253-254 or 255-256 prerequisite to all advanced courses in English.

Eng 253-254 (152-153) WORLD LITERATURE (3-3) Yr.

Major works of classical, Oriental, European, American literature. 253: Classical times to Renaissance. 254: 1600 to present. May be substituted for 251-252.

Eng 255-256 (154-155) TYPES OF LITERATURE (3-3) Yr.

Practical criticism in major types of European and American literature. 255: short story, novel. 256: drama, poetry. May be substituted for 251-252.

Eng 315 ADVANCED EXPOSITORY WRITING (3)

Writing of essays from logical and rhetorical principles, especially modes of definition, assertion, proof. Emphasis on clarity, coherence, style.

Eng 320 INTRODUCTION TO LANGUAGE (3)

Examination of modern concepts of structure and use of language, with special reference to English.

Eng 331 (231) INTRODUCTION TO POETRY (3)

Written and oral analysis of imagery, sound, language, form and structure of poems, leading to increased awareness of nature of poetry.

Eng 335 BACKGROUNDS OF WORLD LITERATURE (3)

Most important sources of European literary themes and allusions, including King James Bible and Western European myth and legend.

Eng 336 INTRODUCTION TO LITERARY PROBLEMS (3)

Critical evaluation of genres of literature, various modes of analysis, problems involved in literary perception.

Eng 446 SHAKESPEARE (3)

Critical study of Shakespeare's plays.

Eng 472 AMERICAN LITERATURE (3)

Critical study of American literature from Civil War to present.

Eng (Journalism) 111 PUBLICATIONS WORKSHOP (1)

Reporting, copy editing, advertising copywriting, proofreading, photography under supervision of publications executives and instructor. May be repeated.

Fr 101-102 ELEMENTARY FRENCH (4-4) Yr.

Conversation, laboratory drill, grammar, reading.

Fr 201-202 (151-152) INTERMEDIATE FRENCH (3-3) Yr.

Reading, conversation, laboratory drill, composition. Pre: 102 or equivalent.

Ger 101-102 ELEMENTARY GERMAN (4-4) Yr.

Reading, conversation, laboratory drill, grammar.

Ger 201-202 (151-152) INTERMEDIATE GERMAN (3-3) Yr.

Reading, conversation, laboratory drill, composition. Pre: 102 or equivalent.

Jap 101-102 ELEMENTARY JAPANESE (3-3) Yr.

Development of listening, speaking, reading, writing. Structural points introduced inductively. Meets 1 hour daily Monday through Friday. 4 out of 5 hours devoted to directed drill and practice. Daily laboratory work.

Jap 201-202 (153-154) INTERMEDIATE JAPANESE-READING (4-4) Yr.

Continuation of 102. More difficult colloquial texts and additional *kanji*.

Mus 117-118 INTRODUCTION TO MUSIC THEORY (1-1)

Fundamental concepts in musical structure and notation including laboratory experience with vocal and instrumental performance at elementary level. Not open to those who have had 119.

Mus 119 (150) ACCELERATED INTRODUCTION TO MUSIC THEORY (2)

Content of 117-118 in one semester. Placement conference required. Pre: consent of instructor.

Mus 160 INTRODUCTION TO MUSIC LITERATURE (3)

Styles and forms of Western music. From listener's point of view. Lab section required.

Mus 102 (200) UNIVERSITY CHORUS (1)

Performance of choral literature from Renaissance to present. Previous choral experience not required.

Phil 100 INTRODUCTION TO PHILOSOPHY (3)

Problems, methods, fields of philosophy.

Phil 200 (150) HISTORY OF PHILOSOPHY (3) I

Western philosophy from era of great Greek thinkers to Renaissance.

Span 101-102 ELEMENTARY SPANISH (4-4)

Beginning course, primarily emphasizing oral practice. Laboratory drill.

Span 201-202 (151-152) INTERMEDIATE SPANISH (3-3) Yr.

Continuation of oral practice with increasing emphasis on reading and written composition. Laboratory drill. Pre: 102 or equivalent.

Sp Dialect Instruction (non-credit)

As determined upon placement by entrance examination, intensive individual instruction in conferences and laboratory on sounds, rhythms, idiom, grammar. Prerequisite to all speech courses.

Sp 101 SPEECH-COMMUNICATION PROCESSES (3)

Introduction to study of speech-communication through models of the process. Examination of major variables of source, message, medium, receiver and how their interaction affects speech-communication. Core requirement for majors in speech and education in lieu of Sp 145. Pre: speech-communication proficiency exam.

Sp 145 EXPOSITORY AND PERSUASIVE SPEAKING (3)

Instruction and practice in analysis and preparation of expository and suasive public discourse.

Speech 145 is prerequisite to all courses bearing a higher number. Every student admitted to 145 is required to present permission from the language laboratory.

Sp 202 MEDIA UTILIZATION AND MANAGEMENT (3)

Examination of human nervous system and its relationship to information media. Study of ways in which sender and receiver influence utilization and management of particular media. Pre: 101.

Sp 211 (110) GENERAL PHONOLOGY (3)

Dynamic phonology of American English. Systematic goal-oriented study of dialects in use. Modification of speech for particular purposes including pedagogy. Pre: ability to transcribe International Phonetic Alphabet according to established standard.

Sp 231 READING ALOUD (3)

Principles of interpretative reading. Practice in textual analysis and in transmitting intellectual and aesthetic content of literature. Pre: 101 or 145.

SPA 300 INTRODUCTION TO SPEECH CORRECTION (3)

Survey of field of speech correction; study of defective articulation, delayed speech, voice problems, cleft palate, cerebral palsy, stuttering, language disorders.

Sp 321 SPEECH-COMMUNICATION IN THE MANAGEMENT OF LEARNING (3)

Overview of principles of speech-communication management: message composition, media utilization and evaluation of speech-communication events, special reference to problems of teaching-learning. Designed as part of pre-service or in-service preparation of teachers; not intended for majors in speech-communication. Pre: 101 or 145.

Sp 333 STORYTELLING (2)

Esthetic communication through storytelling for entertainment and education. Oral tradition; analysis of story types; techniques of preparation and presentation; performance.

Sp 352 GROUP SPEECH-COMMUNICATION

Study of discussion within context of small group. Effects of variables such as group organization, leadership, membership, goals on how the group attempts to achieve its purposes. Pre: 101 or 145.

Sp 353 ARGUMENTATION AND DEBATE (3)

Adapting ideas about communication theory to structuring of argumentative strategies for social action. Extensive practice in formal argument. Pre: 101 or 145, 251.

Sciences Division

Professor **WORKMAN**; Associate Professors **LITTLE**, **NODA**, **REIMER**, **SOOD**; Assistant Professors **BALDWIN**, **DORITY** (Chairman), **FULLERTON**, **LEVENBERG**, **SMITH**; Instructors **EDWARDS**, **HWANG**, **J. KANNO**; Lecturers **FUJIMOTO**, **ITO**, **KON**, **LANDGRAF**, **NIWAO**, **THOMPSON**

Ag 100 ORIENTATION COURSE (1)

Lectures to acquaint student with agriculture in Hawaii and help select major.

Ag 201 INTRODUCTION TO FORESTRY (3)

Aims and scope of forestry; economic and social importance of forests; basic resources of forest lands: water, timber, wildlife habitat, recreation and forage; principles and philosophy of sustained multiple-use land management. Pre: Bot 101.

AEc 120 AGRICULTURAL ECONOMICS (3)

Introduction to economics of agricultural production, marketing, prices, income, policy. Includes government policy and programs related to agriculture, land use, farm tenancy, socio-economic problems of farmers in nation and world.

An Sc 141 ANIMAL HUSBANDRY (3)

Study of important domestic animals: origin, distribution, economic importance with introduction to feeding, breeding, management for each species.

An Sc 241 ANIMAL SCIENCE (3)

Composition and nutritional values of feeds, requirements of beef cattle, dairy cattle, horses, poultry, sheep, swine; balanced rations for specific production. Pre: Chem 114.

Biol 101-102 GENERAL BIOLOGY (4-4) (3 L, 1 Lb)

Introductory biology course, prerequisite to further courses in biological sciences. Either 101 or 102 may be taken first. Replaces Bot 101 and Zool 101. 101 deals with physiological principles of living organisms. 102 introduces chromosomal phenomena of genetics and reproduction and also acquaints students with representatives of plant and animal kingdoms as well as with evolution.

- Biol 325 COMPARATIVE VERTEBRATE ANATOMY (4) (2 L, 2 Lb)**
Study of structure of major organ systems of vertebrate animals.
- Biol 345 PRINCIPLES OF PLANT PHYSIOLOGY (4) (3 L, 2 Lb)**
Introduction to plant physiology. Pre: 101; Chem 244, Phys 160 or equivalent with consent of instructor.
- Biol 355 CELLULAR BIOLOGY (4) (3 L, 1 Lb)**
Cell structure and function. Pre: 101, 102; Chem 244.
- Biol 365 PRINCIPLES OF GENETICS (4) (3 L, 1 Lb)**
Fundamental genetic principles of heredity of plants and animals. Pre: 101, 102; Chem 116 or 117.
- Biol 375 PROCARYOTIC BIOLOGY (4) (2 L, 2 Lb)**
Modern principles of bacteriology and virology. Pre: 355; Chem 244; desirable Math 205.
- Chem 110 SCIENTIFIC GLASSWORKING (1)**
Lab course in techniques of scientific glassworking.
- Chem 113-114 (103-104) GENERAL CHEMISTRY (3-3)**
Fundamental laws, principles, methods. Desirable preparation for all subsequent courses.
- Chem 115-116 GENERAL CHEMISTRY LABORATORY (1-1)**
Pre: credit or registration in 113-114.
- Chem 117 (106) GENERAL CHEMISTRY (4)**
First-year college chemistry. For adequately prepared students who had high school chemistry and currently enrolled in Math 205. Pre: permission of chemistry staff.
- Chem 118 (108) GENERAL CHEMISTRY LABORATORY (2)**
For freshmen accepted in accelerated program with 117. Pre: permission of staff.
- Chem 133 (331) ELEMENTARY QUANTITATIVE ANALYSIS (2)**
Beginning gravimetric and volumetric analysis. Pre: 117.
- Chem 134 ELEMENTARY QUANTITATIVE ANALYSIS (2) Lab**
Pre: credit or registration in 133.
- Chem 241 (141) SURVEY OF ORGANIC CHEMISTRY (3)**
Intensive course in chemistry of carbon compounds. Pre: 113 or 117.
- Chem 242 SURVEY OF ORGANIC CHEMISTRY LABORATORY (1)**
Pre: credit or registration in 241.
- Chem 243-244 (143-144) ORGANIC CHEMISTRY (3-3)**
Carbon compounds: classification, structure, reactions. Laboratory techniques. Pre: 114 or 117.
- Chem 245-246 ORGANIC CHEMISTRY LABORATORY (1-1)**
Pre: credit or registration in 243-244.
- Chem 299 (199) DIRECTED RESEARCH (1-3)**
For chemistry majors to familiarize them with basic research techniques, including use of literature. Pre: permission of staff.
- CE 211 (111) SURVEYING I (2)**
Basic principles, computations, use of instruments involving horizontal and vertical measurements. Pre: Math 134; GE 101 or GE 109.
- CE 212 (112) SURVEYING II (3) (2 L, 1 Lb)**
Topographic mapping; curves; earthwork; computer applications; route problems. Pre: Math 205; CE 211, GE 251.

CE 270 (170) APPLIED MECHANICS I (3)

Equilibrium of particles, rigid bodies, frames and machines; vectors, centroids, friction, moments of inertia. Pre: Math 206; Phys 170.

CE 271 APPLIED MECHANICS II (3)

Dynamics of particles and rigid bodies, impulse-momentum, work-energy. Pre: Math 206; CE 270.

EE 311 (211) CIRCUIT THEORY (3)

Analysis of electrical circuits. Transform methods. Topology. Pre: Phys 272; Math 231.

GE 109 (105) ENGINEERING GRAPHICS (3) (1 L, 2 Lb)

Analysis and solution of spatial problems pertaining to points, lines, planes, their application to engineering. Surface intersections, vector geometry, graphical calculus. Pre: one year high school mechanical drawing. Not open to students who have credit in 102.

GE 251 (110) DIGITAL COMPUTER PROGRAMMING (1)

Introduction to FORTRAN language and application to engineering problems using IBM 7040. Pre: Math 206.

Gen Sci 120-121 INTRODUCTION TO SCIENCE (4-4) Yr.

Characteristics of science and interactions of society with science, illustrated by topics from physical and biological science. Sequence starts in fall semester.

Geosc 101-102 INTRODUCTION TO GEOSCIENCES (4-4) Yr. (3 L, 1 Lb)

Integrated survey ranging from center of earth to limits of the solar system, emphasizing unifying physical principles.

Hort 262 (162) PRINCIPLES OF HORTICULTURE (3) (2 L, 1 Lb)

Relationships of plant structures, nutrients, environment, cultivation methods to plant growth. Pre: Bot 101; credit or concurrent registration in Chem 114.

Math 99 MATHEMATICS REFRESHER (0)

Review of mathematical ideas for students with insufficient background in high school mathematics.

Math 111 INTRODUCTION TO MATHEMATICS (3)

Study of structure and concepts of arithmetics. (Primarily for education majors.)

Math 134 PRE-CALCULUS MATHEMATICS (4)

Basic operations; algebraic functions and equations; trigonometric functions; lines, conics. Pre: two years of high school algebra and 1 year of plane geometry or consent of department.

Math 205 (135) CALCULUS I (4)

Basic concepts and techniques, derivatives, conics, integrals. Pre: 134 or two years of high school algebra and trigonometry.

Math 206 (136) CALCULUS II (4)

Exponential, logarithmic, trigonometric, hyperbolic functions; techniques of integration; vectors; three dimensional space; multiple integration. Pre: 205 or equivalent.

Math 231 APPLIED ADVANCED CALCULUS I (3)

Series, partial derivatives, vector spaces. Pre: 206.

Math 232 APPLIED ADVANCED CALCULUS II (3)

Vector fields, Green's theorem, differential equations. Pre 231.

Micro 130 MICROBES AND MAN (2)

Microorganisms as they affect people and their possessions. Not open to those who have credit in 151.

Phys 160-161 COLLEGE PHYSICS (4-4) (3 L, 1 Lb)

Fundamental principles, theories, experimental methods. Pre: Math 134 or equivalent.

Phys 170 GENERAL PHYSICS (3)

Mechanics of particles, rigid bodies, fluids; properties of matter; wave motion; sound. Pre: credit or registration in Math 206.

Phys 171 GENERAL PHYSICS LABORATORY (1) (1 3-hr. Lb)

Experiments in statics, dynamics, properties of matter, periodic motion, sound. Pre: credit or registration in 170.

Phys 272 (172) GENERAL PHYSICS (3)

Fundamental laws of electricity and magnetism, their applications. Pre: 170, 171; credit or registration in Math 231.

Phys 273 (173) GENERAL PHYSICS LABORATORY (1) (1 3-hr. Lb)

Experiments in heat, electricity, magnetism. Pre: credit or registration in 272.

Phys 274 (174) GENERAL PHYSICS (3)

Heat, light, modern physics. Pre: 272, 273 or concurrent registration, or 160-161; credit and registration in Math 231.

Phys 275 (175) GENERAL PHYSICS LABORATORY (1) (1 3-hr. Lb)

Experiments in light and modern physics. Pre: credit or registration in 161 or 274.

Phys 299 (199) DIRECTED RESEARCH, LOWER DIVISION (1-3)

Pre: 272 and 273, and permission of instructor.

Zool 161 ENTOMOLOGY (4) (2 L, 2 Lb)

Structure, habits, biology, classification of insects; insects characteristic of Hawaii.

Zool 420 (301) EMBRYOLOGY (3) (2 L, 1 Lb)

Descriptive and analytical embryology of selected vertebrates and invertebrates. Pre: Biol 101-102, 325.

Social Science and Education Division

Associate Professors MARKEY, SMUCK; Assistant Professors BONK (Chairman), DIXON, HAMAI, SWANN, USHJIMA, WARSH; Instructors FUKUDA, GOYA, WHITE, YANAGISAKO

Anth 150 INTRODUCTION TO ANTHROPOLOGY (3) I, II

General survey. Study of man from biological and cultural viewpoints. Considers relationship of anthropology to other fields, some basic concepts and theoretical approaches, methods of investigating and evaluating subject matter. Investigation of man as biological animal: physical evolution, development and changes, processes, and present groupings of man. Investigation of archeology: discussion of time, space, cultural change. Cultural patterns and institutions of non-literate and literate societies throughout world provide basis for analysis of culture universals as well as differences. (Not open to those who have had 151.)

Anth 151 INTRODUCTION TO ANTHROPOLOGY (4), I, II (3 L, 1 3-hr. Lb)

Similar to 150 but with laboratory and field trips. (Not open to those who have had 150.)

Anth 200 CULTURAL ANTHROPOLOGY (3) I, II

Nature of cultures; basic concepts for analyzing cultural behavior; patterning, integration, dynamics of culture; culture and individual.

Anth 202 GENERAL LINGUISTICS (3) I

Nature and workings of language, its role in culture and history. (Same as Ling 202.)

Anth 210 ARCHEOLOGY (3) II

Introduction to prehistoric archeology methods and techniques of excavation and laboratory analysis; brief survey of man's cultural growth in prehistoric times. Pre: 150 or 200.

Anth 220 ETHNOGRAPHY (3) I

Comparative study of selected folk, peasant, urban societies of the world. Pre: 150 or 200.

Anth 230 SOCIAL ANTHROPOLOGY (3) II

Systematic study of human social institutions; general principles of social interaction formulated from ethnographic data. Pre: 150 or 200.

Anth 250 OCEANIA (3) II

General cultural survey of Pacific area, with emphasis on Polynesia, Micronesia, Melanesia. Origins, pre-history, language, cultural institutions of native peoples; changes taking place in the Pacific.

Anth 253 THE AMERICAS (3) I

Asiatic origin and New World settlement. Cultural diversity in pre-Columbian America, North and South. U.S. Indians as minority group.

Anth 399 (199) DIRECTED READING OR RESEARCH (arr.) I, II

Limited to majors with 2.7 grade-point ratio, or 3.0 grade-point ratio in anthropology.

AS 301 CIVILIZATIONS OF THE EAST (3) I

Physical environment and cultural traditions of East, Southeast, South Asia before Western contact.

AS 302 CIVILIZATIONS OF THE EAST (3) II

Response of Asian culture to West; movements of nationalism and modernization; Asia's role today.

Bus 111 (110) APPLIED MATHEMATICS (3)

Application of mathematical operations to problems in business and economics; linear equations; progressions; theory of sets and functions; elementary matrix notation; differential and integral calculus (partial differentiation, maxima and minima, Lagrange multiplier techniques).

Bus 200-201 (100-101) ELEMENTARY ACCOUNTING (3-3) Yr.

Theory and practice of income determination and asset valuation. Preparation and analysis of statements; uses for decision making. Pre: sophomore standing.

Econ 150 PRINCIPLES OF ECONOMICS (3)

Function of economic systems with emphasis on forces determining levels and changes of national income and employment. Describes basic economic institutions, e.g., markets, money, banks, labor organization, corporations.

Econ 151 PRINCIPLES OF ECONOMICS (3)

Analysis of how commodity and factor prices are determined. Policies for efficient allocation of scarce resources.

Econ 300 INTERMEDIATE ECONOMIC THEORY: PRICE THEORY (3)

Price determination and resource allocation under competition, monopoly, oligopoly, monopolistic competition. Theories of demand, cost, partial, general equilibrium.

Econ 304 HISTORY OF ECONOMIC THOUGHT (3)

Survey of economic thought from Adam Smith to present with emphasis on theory of value and distribution.

Econ 340 MONEY AND BANKING (3)

Relation of monetary system to price level, employment, income; nature and function of money and banking; role of money in international trade, monetary theories, inflation.

Ed CI 341 FOUNDATIONS IN CURRICULUM AND INSTRUCTION (3)

Study of objectives and organization of the school's curriculum; discussion of principles and practices; roles of teacher in the school. Sections: preschool, elementary school, secondary school. Pre: EP 372 (not required of students who have had Ed EE 220, 221, 224, or Ed CI 230).

Ed EF 320 FOUNDATIONS OF AMERICAN EDUCATION (3)

Contemporary educational theory and practice as related to major historical, philosophical, social factors in American culture.

Ed EP 372 PSYCHOLOGICAL FOUNDATIONS (3)

Principles of learning and individual differences; relationships of these factors to classroom experience. Pre: Psy 100.

Geog 101 ELEMENTS OF PHYSICAL GEOGRAPHY (3) I, II (2 L, 1 Lb)

Survey of man's natural environment; distribution and interrelationships of climates, vegetation, soils, landforms. Laboratory problems in map interpretation and environmental analysis.

Geog 102 WORLD REGIONAL GEOGRAPHY (3)

Geography of world's major cultural regions; emphasis on geographic aspects of contemporary economic, social, political conditions.

Geog 151 ECONOMIC GEOGRAPHY (3)

Systematic study of patterns of economic activities; agriculture, mining, manufacturing, services and consumption. Elements of location theory, transportation, urban geography. Basic aspects of regional economic development and planning.

Geog 300 INTRODUCTION TO CLIMATOLOGY (3)

Elements and controls of climate. World patterns of insolation, temperature, evaporation, precipitation, atmospheric circulation. Climatic classifications. Pre: 101.

Geog 370 AIRPHOTO AND IMAGE INTERPRETATION (2) (1 L, 1 Lb)

Quantitative and qualitative interpretation of airphotos, infrared and radar imagery. Use of aerial photography, space photography, other remote sensors as tools of research in physical and social sciences. Pre: 101 or Geosc 102 or consent of instructor.

Geog 375 (430) CARTOGRAPHY (3) (2 L, 1 Lb)

Principles of cartography, including map scales, grid systems, map projection, compilation, symbolism, map reproduction. Laboratory practice with cartographic equipment, techniques of quantitative mapping and terrain presentation.

Geog 421 (450) URBAN GEOGRAPHY (3)

Location, size, functions, spatial-economic structure of modern city. Urban sphere of influence. Problems of urban transportation, changes in land use and urban growth. Role of government in urban development. Pre: 151.

HPE 101 PHYSICAL FITNESS (1)

Conditioning exercises, activities to develop and maintain physical efficiency. Motor fitness tests to measure status, progress. Separate sections men and women.

HPE 103 SWIMMING: BEGINNING (1)

Adjusting to water, immersing in water, floating, sculling; correct arm stroke, leg kick, breathing techniques and their coordination.

HPE 104 SWIMMING: INTERMEDIATE (1)

Emphasis on perfecting and integrating basic strokes with added emphasis on swimming for distance and speed.

HPE 107 TENNIS: BEGINNING (1)

Rules, etiquette, grip, forehand and backhand strokes, serving, volleying, singles and doubles play.

HPE 108 TENNIS: ADVANCED (1)

Emphasis on improving the serve, forehand and backhand strokes, volleying, chop strokes, competitive strategy, problems in rules.

HPE 110 GOLF: BEGINNING (1)

Rules, etiquette, grip, stance, drive, normal iron shots, approach shots, putting.

HPE 111 GOLF: ADVANCED (1)

Emphasis on improving drive, fairway wood shots, long iron shots, control shots, trouble shots, putting, course management, competitive strategy, problems in rules. Actual play on golf course requires additional fees.

HPE 115 BOWLING (1)

Rules, etiquette, arm swing, approach, execution, scoring, spare pickups. Class participation at bowling alley requires additional fees.

HPE 120 BADMINTON (1)

Rules, etiquette, grip, forehand and backhand strokes, serving, smash, drive, net play, offensive and defensive strategy in singles and doubles play.

HPE 126 RHYTHMIC ACTIVITIES (1)

Emphasis on awareness of factors related to enjoyment of social dances including ballroom, mixers, etc.

HPE 136 TEAM SPORTS (1)

Skills, knowledge, attitudes, appreciation. Combination volleyball and softball; combination basketball and soccer. Separate sections men and women.

HPE 151 ADAPTED AND PRESCRIBED EXERCISES (1)

Small group and individual guidance and instruction for students recommended by Student Health Service.

HPE 190 MODERN HEALTH: PERSONAL (1)

Mental-emotional health, family-living, and scientific health information as a basis for personal hygienic living.

HPE 233 PHYSICAL EDUCATION ELEMENTARY (3)

Content and methods for physical education in elementary school. Emphasis on selection, planning, teaching, evaluation of movement exploration and activities.

HPE 263 INTRAMURAL ATHLETICS (2)

Organization, program, procedures used in conducting sports program for students outside of regular class hours.

Hist 151-152 WORLD CIVILIZATION (3-3) Yr.

Development of civilization from ancient Orient and classical Greece and Rome to present. Devoted primarily to presenting, in broad outline, main cultural and historical development in each area. 1st Sem: 151, ends with Reformation in Europe. 2nd Sem: 152, covers period from 16th century to present. Primary emphasis on Western development.

Hist 181-182 AMERICAN HISTORY (3-3) Yr.

Interpretative survey of U.S. history. 181: 1500 to Civil War; 182: Civil War and Reconstruction period to present.

Hist 399 (199) DIRECTED READING OR RESEARCH (arr.)

Individual projects in various fields. Limited to majors with 2.7 grade-point ratio, or 3.0 grade-point ratio in history.

Hist 341-342 HISTORY OF ASIA (3-3)

Historical survey of major civilizations of Asia from earliest times to present, emphasizing China and India but including Japan, Southeast Asia, and impact of Islam in these areas.

Hist 439 (425) EUROPE IN THE NINETEENTH CENTURY (3)

Major political, social, economic, intellectual trends in evolution of Europe from Napoleon to end of World War I.

Hist 440 EUROPE SINCE VERSAILLES (3)

Problems of contemporary Europe and their historical background.

Hist 461 COLONIAL HISTORY (3)

History of U.S. to drawing-up of Constitution. Expansion of Europe in Western hemisphere; establishment of American independence.

Hist 484 (492) THE SOUTH IN AMERICAN HISTORY (3)

Southern economic, social, intellectual, political development, with special attention to race relations.

PolSc 110 INTRODUCTION TO POLITICAL SCIENCE (3) I, II

Examination of major types and practices of government and consideration of modern governments within democratic-autocratic framework.

PolSc 210-211 AMERICAN GOVERNMENT CORE (3-3)

Organization and functioning of American political system.

PolSc 300-301 ELEMENTS OF POLITICAL THEORY (3-3)

Analysis of works of representative political philosophers from Plato to 20th century.

PolSc 320-321 INTERNATIONAL RELATIONS CORE (3-3)

Integrated introduction to international relations and organization. (320 prerequisite for 321 unless waived by division.)

Psy 100 SURVEY OF PSYCHOLOGY, I, II

Principles of human behavior, individual differences, motivation, emotion, perception, learning, etc. Not open to those who have had 111; intended for non-majors.

Psy 110 PSYCHOLOGY OF ADJUSTMENT (3)

Understanding and improving adjustment. Needs, frustrations, conflicts, anxiety, patterns of adjustment. Concepts of mental health. Not open to majors.

Psy 111 INTRODUCTION TO THE STUDY OF SOCIETY (3)

General study of behavior through application of scientific method. Pre: concurrent enrollment in 112.

Psy 112 INTRODUCTORY LABORATORY IN PSYCHOLOGY (3)

Laboratory to accompany 111.

Psy 113 STATISTICAL TECHNIQUES (3)

Frequency distributions; graphic methods, central tendency; variability; correlation; reliability; tests of significance. Pre: two years of high school algebra or equivalent. Pre: 111, 112.

Psy 399 (199) DIRECTED READING OR RESEARCH (3) I, II

Limited to majors with 2.7 grade-point ratio, or 3.0 grade-point ratio in psychology.

Psy 214 LEARNING AND MOTIVATION (3)

Major conditions influencing learning and forgetting; role of practice, reward, motivation, drive, emotion; theoretical interpretations of learning and motivation. Pre: 111, 112.

Psy 216 INDIVIDUAL DIFFERENCES AND MEASUREMENT (3)

Individual differences in personality, aptitude, intelligence; construction, validation, administration of tests; interpretation of scores. Pre: 111, 112.

Psy 320 DEVELOPMENTAL PSYCHOLOGY (3)

Emotional, mental, physical, social development from infancy to adulthood; interests and abilities at different age levels. Pre: 100 or 111.

Psy 321 PSYCHOLOGY OF PERSONALITY (3)

Scientific study of personality, its meaning, assessment, development, relation to cultural-social determinants. Pre: 100 or 111.

Psy 322 SOCIAL PSYCHOLOGY (3)

Interpersonal relations; social attitudes; group dynamics; intergroup relations; class and cultural influences. Pre: 100 or 111.

Soc 151 INTRODUCTION TO THE STUDY OF SOCIETY (3) I, II

Basic social relationships, norms, social structures, processes affecting social change. Prerequisite to all advanced courses.

Soc 399 DIRECTED READING (arr.)

Limited to majors with 2.7 grade-point ratio, or 3.0 grade-point ratio in sociology.

Soc 232 COMMUNITY FORCES IN HAWAII (3)

Basic factors and forces in contemporary society as exemplified in Hawaii.

Soc 324 PERSONALITY AND CULTURE (3)

Origin and development of personality as subjective aspect of culture; function of communication; human nature and mores; personal life organization.

Soc 330 SOCIOLOGY OF SMALL GROUPS (3)

Practical application of theories and research findings involving face-to-face relations; leadership, prestige, group morale.

Soc 344 SOCIAL CHANGE (3)

Structural-functional organization. Impact of technology on institutions, value orientation, power structures, systems of roles, stratification.

Community College System

A STATEWIDE SYSTEM OF COMMUNITY COLLEGES is administered by the University of Hawaii. Authorized by the state legislature in 1964 and commencing operation in 1965, the community college system is comprised of five public community colleges:

Honolulu Community College, originally established in 1920 as the Territorial Trade School, located at 874 Dillingham Boulevard, Honolulu, Hawaii 96817.

Kapiolani Community College, established in 1957 as Kapiolani Technical School, located at 602 Pensacola Street, Honolulu, Hawaii 96814.

Leeward Oahu Community College, scheduled to open in September 1968, occupying a newly developed campus at 96-050 Farrington Highway, Pearl City, Hawaii 96782.

Maui Community College, established in 1931 as Maui Vocational School, located at 310 Kaahumanu Avenue, Kahului, Maui, Hawaii 96732.

Kauai Community College, established in 1943 as the Kauai Vocational School, occupying a temporary campus at Lihue, Kauai, Hawaii 96766.

The several colleges provide occupational, transfer liberal arts and general education. Admission is granted to all high school graduates and other individuals able to profit from the college offerings. Each institution offers a well-developed guidance and counseling program. The associate in arts and the associate in science degrees are granted as are certificates of achievement. Each college has a financial aids program, provisions for student activities, and a student body government. In 1967 the colleges enrolled 3,606 day and 1,799 evening students.

The programs available at the various colleges are listed below. Inquiries should be directed to the registrars of the colleges.

HONOLULU COMMUNITY COLLEGE: Aeronautics, Architectural Drafting, Auto Body Repair and Painting, Auto Mechanics, Carpentry, Civil Engineering Technology, Commercial Baking, Cosmetology, Electronics Technology, Fashion Arts, Fire Science, General Education, Heavy Equipment Maintenance, Industrial Electricity, Institutional Food Services, Machine Shop, Plumbing, Police Science, Radio and TV Repair, Refrigeration and Air Conditioning, Sheet Metal, Transfer, Welding.

KAPIOLANI COMMUNITY COLLEGE: Accounting, Business Data Processing, Dental Assisting, General Clerical, General Education, Hotel and Food Services, Practical Nursing, Sales and Management, Secretarial, Transfer.

LEEWARD OAHU COMMUNITY COLLEGE: Accounting, General Education, Management, Secretarial, Transfer.

KAUAI COMMUNITY COLLEGE: Accounting, Architectural Drafting, Auto Body Repair and Painting, Auto Mechanics, Carpentry, General Education, Secretarial, Transfer.

MAUI COMMUNITY COLLEGE: Accounting, Apparel Design and Construction, Architectural Drafting, Auto Body Repair and Painting, Auto Mechanics, Carpentry, General Education, Machine Shop, Secretarial, Sheet Metal, Transfer, Welding.

East-West Center

THE EAST-WEST CENTER—The Center for Cultural and Technical Interchange between East and West—was established by the U.S. Congress in 1960. The goal of the Center is to further mutual understanding among the peoples of Asia, the Pacific area, and the United States. This goal is the guideline for the operation of the Center's four main divisions: the Institute for Student Interchange, the Institute for Technical Interchange, the Institute of Advanced Projects, and Central Programs.

Institute for Student Interchange

Scholarships. Young men and women possessing a high degree of leadership potential and scholastic ability and giving evidence of real interest in the goals of the Center may qualify for scholarships which provide transportation to and from Honolulu, tuition and books, housing and meals, accident and health insurance, and a monthly incidental allowance. The scholarships may include a field study grant to the mainland United States or Asia. Scholarships are for 9 or 12 months with provisions for extensions for those who qualify.

Scholarships for American and Asia/Pacific students are primarily for graduate study at the University of Hawaii. There are some undergraduate scholarships for those students who come from countries where there are only a limited number of higher educational institutions.

Field Study Grants. The field study grant provides opportunity to study in Asia or the Pacific islands for those American students in good standing who demonstrate their seriousness, maturity, and ability. Generally, students seeking advanced degrees request up to one semester for research purposes or course work in a university. Certain students whose primary goal is language study may be permitted to spend a longer period overseas in recognized full-time Asian language programs.

The U.S. mainland field study grant, for the student in good standing from Asia or the Pacific, provides an opportunity for special study on the mainland United States. This study is usually planned to take place during the summer or fall semester, after two semesters have been spent at the University of Hawaii.

Students on scholarship are expected to participate in intercultural activities as their academic requirements may allow.

Language Requirements. Because the medium of instruction at the University of Hawaii is English, Asian and Pacific student grantees are tested for English proficiency by the University's English Language Institute. Those requiring extra help are assigned to full-time or part-time training in English until they are ready for a full academic program.

American students are required to complete at least two years of Asian language study before the end of their grants.

Asia-America Program. Seminars conducted for East-West Center students by the faculty of the University and staff of the Center are designed as a bridge that will enable Asians and Americans to develop the intercultural understanding recognized as one of the basic functions of the Center. Both groups of students play a vital role in the seminars by providing sources of information and guidance and by their critical and constructive comparisons of the various Asian societies with the variations in culture found in American society. Attendance at the seminars is required as a partial fulfillment of the Center scholarship grant.

The Asia-America Program also offers a film series, a lecture and visual arts program, and other non-academic activities for grantees. A browsing room and library of paperback books are also available.

Institute for Technical Interchange

The Institute for Technical Interchange administers training projects for technical participants from Asia, the Pacific, and the United States. Training, planned on a long and a short term, group or individual basis, is designed to further understanding among nations at the same time technical knowledge is interchanged. Projects may last from 3 to 12 months and subject matter is chosen to fill needs of developing areas. Stress is now being given to training for those Pacific islands which are under the American flag. Current training projects include medical-nursing education for Pacific medical workers; agricultural and economic development in the Pacific and Asia; educational communications; techniques in teaching English to non-English speaking students; and programs designed to develop skills and to improve the status of women in developing areas. The institute also administers training and job observation in Hawaii for Agency for International Development participants and participants from other private or government agencies.

Institute of Advanced Projects

The Institute of Advanced Projects offers a unique program at the advanced professional level. Aimed at improving understanding and establishing better relations between East and West, the institute serves the Center's purpose in two ways: through exchange of persons and exchange and dissemination of information and scholarly materials.

The *Senior Specialists* program brings together distinguished persons from Asia, the Pacific area, and the United States for informal seminars, research, and writing.

Research Publications and Translations not only translates scholarly materials from and into Asian languages, but also compiles teaching and research aids, such as bilingual dictionaries and annotated bibliographies. Its programs include the *Occasional Papers*, *IAP Reprints*, and *IAP Mimeographs*.

The institute also administers the *Jefferson Fellowships* program, a non-degree program of 17 weeks designed for mature journalists and others in the several communications media to pursue, not studies in journalism, but projects of their own choosing available to them from the wide resources of the University of Hawaii and the East-West Center.

Panels of advisers and consultants on substantive matters have been established to aid the program directors in selection of candidates and subject-matter emphases.

Central Programs

Central Programs, which service the entire East-West Center, include Central Administration, East-West Center Library, East-West Center Press, Public Affairs, Conference Program, Community Relations, and the Evaluation and Alumni Liaison office. The *East-West Center Library* is building an outstanding collection of Asian materials, including books, periodicals, and microfilm, emphasizing national development and cross-cultural relations. The *East-West Center Press* publishes new books originating within the Center as well as from other institutions throughout the world. It exports American books to Asia and imports Asian books in English. The *Public Affairs Office* prepares and distributes mass media publicity, exhibits, and other information materials about the Center and its multiple programs. The *Community Relations Office* coordinates activities of the Center and its grantees with Hawaii's residents, working with the Friends of the East-West Center (an organization of volunteers). The *Conferences and Seminars Program* initiates and organizes Center conferences, which invariably are interdisciplinary and multinational, dealing with socio-economic and political problems in Asia and the Pacific. It also funds and sponsors or hosts on a regular basis important international meetings at all levels. It publishes a calendar of meetings and occasional conference proceedings. It also administers the East-West Center Gallery and the Distinguished Speaker series. The *Evaluation and Alumni Liaison Office* maintains records on participants in East-West Center programs and coordinates studies dealing with program objectives.

GENERAL INFORMATION

The East-West Center complex includes Thomas Jefferson Hall, the administration building which houses 50 offices, a food center, conference rooms, and the Gallery; Hale Manoa, men's residence; Hale Kuahine, women's residence; John F. Kennedy Hall, theatre-auditorium; Abraham Lincoln Hall, which houses the Institute of Advanced Projects, the Library and Press. A Japanese garden

is adjacent to the administration building and a traditionally-styled Thai pavilion, dedicated by King Bhumibol Adulyadej in 1967, lies between Jefferson and Lincoln halls.

The East-West Center has an advisory board called the International Panel of Advisers. There is also a National Review Board which advises the U.S. Department of State regarding the East-West Center.

FOR FURTHER INFORMATION

Asian-Pacific Scholarships. Write to the Director of Student Selection, East-West Center, 1777 East-West Road, Honolulu, Hawaii 96822.

American Scholarships. Write or call on the Director of Student Selection, East-West Center, 1777 East-West Road, Honolulu, Hawaii 96822.

Programs, Grants of the Institute of Advanced Projects. Write to the Director, Institute of Advanced Projects, Lincoln Hall, East-West Center, 1777 East-West Road, Honolulu, Hawaii 96822.

Technical Training. Write to the Vice-Chancellor, Institute for Technical Interchange, East-West Center, 1777 East-West Road, Honolulu, Hawaii 96822.



Fashion shows, beauty pageants, electioneering, symposia, and less formal discussions add to the diversity of student activities on the Manoa campus.





Faculty and Staff

BOARD OF REGENTS

	TERM EXPIRES
EDWARD H. NAKAMURA, <i>Chairman, Honolulu</i>	1967
CLARENCE F. CHANG, M.D., <i>Vice-Chairman, Honolulu</i>	1968
ROBERT L. CUSHING, <i>Honolulu</i>	1968
HAROLD C. EICHELBERGER, <i>Honolulu</i>	1970
CHARLES A. HARKER, <i>Koloa, Kauai</i>	1967
ROBERT L. HIND, JR., <i>Captain Cook, Hawaii</i>	1966
MSGR. CHARLES A. KEKUMANO, <i>Honolulu</i>	1970
PETE T. OKUMOTO, M.D., <i>Hilo, Hawaii</i>	1965
CHARLES S. OTA, <i>Wailuku, Maui</i>	1969

FORMER PRESIDENTS

- JOHN W. GILMORE, 1908–1913 (Deceased)
 B.S.A. 1898, M.S.A. 1906, Cornell
- JOHN S. DONAGHHO, 1913–1914 (Acting) (Deceased)
 A.B. 1889, A.M. 1897, Marietta
- ARTHUR L. DEAN, 1914–1927 (Deceased)
 B.A. 1900, Harvard; PH.D. 1902, Yale; LL.D. 1947, Hawaii
- DAVID L. CRAWFORD, 1927–1941
 B.A. 1911, LL.D. 1933, Pomona; M.A. 1912, Stanford; LL.D. 1957, Hawaii
- ARTHUR R. KELLER, 1941–1942 (Acting) (Deceased)
 LL.B. 1907, National University Law School; M.S. 1916, M.I.T.
- GREGG M. SINCLAIR, 1942–1955
 B.A. 1912, LL.B. 1949, Minnesota; M.A. 1919, LL.D. 1954, Columbia; LL.D. 1951, Ohio State; LL.D. 1955, California; H.H.D. 1956, Hawaii; D.LIT. 1960, Keio
- PAUL S. BACHMAN, 1955–1957 (Deceased)
 B.S. 1922, Ohio State; M.A. 1925, PH.D. 1927, Washington
- WILLARD WILSON, 1957–1958 (Acting)
 B.A. 1929, LL.D. 1961, Occidental College; M.A. 1930, Columbia; PH.D. 1939, Southern California
- LAURENCE H. SNYDER, 1958–1962
 B.S. 1922, S.C.D. 1947, Rutgers; M.S. 1924, S.C.D. 1926, Harvard; S.C.D. 1960, Ohio State; H.H.D. 1962, N. Carolina

ADMINISTRATIVE OFFICERS

General Administration

- THOMAS H. HAMILTON, B.A., M.A., PH.D., L.H.D., LL.D., *President*
 KENNETH K. LAU, B.A., J.D., LL.M., *Assistant to the President*
 HITOSHI MOGI, B.S., M.R.P., *Assistant to the President for Planning*
 FREDERICK Y. SMITH, B.S., M.S., *Director of University Relations and Development*
 ROBERT W. HIATT, B.A., PH.D., *Vice-President for Academic Affairs*
 ROBERT M. KAMINS, B.A., M.A., PH.D., *Dean for Academic Development*
 ROBERT E. POTTER, A.B., M.ED., ED.D., *Associate Dean for Academic Development*
 RICHARD S. TAKASAKI, B.S., M.A., M.P.A., *Vice-President for Business Affairs*
 CHARLES S. JAMES, B.A., *Assistant Vice-President for Business Affairs*
 RICHARD H. KOSAKI, B.A., M.A., PH.D., *Vice-President for Community Colleges*
 RICHARD L. BALCH, A.B., *Vice-President, Division of Continuing Education and Community Service*
 JAMES J. M. MISAJON, A.B., *Administrative Director*
 HAROLD M. BITNER, B.S., M.A., PH.D., *Vice-President for Student Affairs*
 WILLARD WILSON, B.A., M.A., PH.D., LL.D., *Secretary of the University*
 SHUNZO SAKAMAKI, B.A., M.A., PH.D., *Dean of Summer Session*
 SHIRO AMIOKA, B.ED., M.ED., PH.D., *Associate Dean of Summer Session*
 KAORU NODA, B.A., M.S., PH.D., *Provost of the Hilo Campus*

East-West Center

- HOWARD P. JONES, LIT.D., LL.D., *Chancellor of the East-West Center*
 SAM P. GHISTRAP, B.S., LL.D., *Deputy Chancellor for Administration*
 EVERETT KLEINJANS, A.B., M.A., PH.D., *Deputy Chancellor for Academic Affairs*
 Y. BARON GOTO, B.A., S.C.D., *Vice-Chancellor, Institute for Technical Interchange*
 MINORU SHINODA, B.A., PH.D., *Director, Institute of Advanced Projects*
 ROBERT ZUMWINKLE, B.A., PH.D., *Director, Institute for Student Interchange*
 ARTHUR GOODFRIEND, B.S., *Special Assistant to the Chancellor*

College Administration

- W. TODD FURNISS, B.A., M.A., PH.D., *Dean of the College of Arts and Sciences*
 DAVID E. CONTOIS, B.A., M.S., PH.D., *Associate Dean*
 ROGER L. HADLICH, B.A., M.A., PH.D., *Assistant Dean*
 JOHN P. HOSHOR, B.A., M.A., PH.D., *Associate Dean*
 EDWIN A. PENN, B.S., M.A., ED.D., *Assistant Dean*
 EDWARD M. BARNET, S.B., M.B.A., PH.D., *Dean of the College of Business Administration and The School of Travel Industry Management*
 JOSEPH V. MICCIO, B.B.A., M.A., LL.D., ED.D., *Associate Dean*
 JOHN R. COX, B.A., M.A., *Assistant Dean*
 KENNETH WEST, B.S., *Executive Director, Advanced Management Program and Assistant to the Dean*
 CHARLES F. HEYE, B.B.A., M.B.A., *Director, Small Business Management Program*

- HUBERT V. EVERLY, B.ED., M.ED., PH.D., *Dean of the College of Education*
 OTTO J. BEYERS, B.A., M.A., ED.D., *Assistant Dean*
 ANDREW W. S. IN, B.ED., M.A., PH.D., *Assistant Dean*
- JOHN W. SHUPE, B.S., M.S., PH.D., *Dean of the College of Engineering*
 HOWARD P. HARRENTIEN, B.S., M.S., PH.D., *Associate Dean*
 NICHOLAS B. CORBA, B.S., M.ED., *Assistant Dean*
- RALPH M. MIWA, B.A., M.A., PH.D., *Administrative Dean of the College of General Studies*
 JOHN G. CHANTINY, B.A., M.A., ED.D., *Assistant Dean*
 JEFFREY A. FLEECE, B.A., M.A., PH.D., *Assistant Dean*
- WYTZE GORTER, A.A., A.B., PH.D., *Dean of the Graduate Division and Director of Research*
 HOWARD P. MCKAUGHAN, B.A., M.TH., M.A., PH.D., *Associate Dean, Programs and Personnel*
 MORTON M. ROSENBERG, B.S., M.S., PH.D., *Associate Dean, Research, Fellowships and Special Training Programs*
 SUMIE F. MCCABE, B.ED., M.A., *Assistant Dean, Student Services*
- WINDSOR C. CUTTING, B.A., M.D., *Dean of the School of Medicine*
 NEAL L. GAULT, JR., B.A., M.B., M.D., *Associate Dean*
 ROBERT W. NOYES, A.B., M.D., *Associate Dean*
 TERENCE A. ROGERS, B.S., PH.D., *Associate Dean*
- MARJORIE S. DUNLAP, B.A., M.P.S., ED.D., *Dean of the School of Nursing*
 YUKIE T. GROSS, B.A., M.N., M.S., *Associate Dean*
 ELEANOR A. JUDD, B.A., *Administrative Assistant to the Dean*
- RICHARD K. C. LEE, M.D., DR.P.H., *Dean of the School of Public Health*
 ROBERT E. MYTINGER, B.S., DR.P.H., M.P.H., *Assistant Dean, Administration*
- P. FREDERICK DELLIQUADRI, B.A., M.S.W., *Dean of the School of Social Work*
 EDWIN B. L. TAM, B.A., M.S.W., *Assistant Dean*
- C. PEAIRS WILSON, B.S., M.S., PH.D., *Dean of the College of Tropical Agriculture; Director, Hawaii Agricultural Experiment Station and Cooperative Extension Service*
 G. DONALD SHERMAN, B.S., M.S., PH.D., *Associate Director, Hawaii Agricultural Experiment Station*
 DALE GOODELL, B.S., M.S., *Associate Director, Cooperative Extension Service*
 SHOSUKE GOTO, B.S., M.S., PH.D., *Assistant Dean, Tropical Agriculture*
 HAZEL V. KRAEMER, A.B., M.A., PH.D., *Assistant Dean, Home Economics*
- RALPH R. SHAW, B.A., B.S., M.S., PH.D., *Dean of Library Activities*
 ROBERT D. STEVENS, A.B., B.S., M.A., PH.D., *Associate Dean*

DIRECTORS OF SPECIAL UNITS

- JOHN W. BROWN, B.S., M.A., *Admissions and Records*
 SPENCER W. TINKER, B.S., M.S., *Waikiki Aquarium*
 YONEO SAGAWA, B.A., M.A., PH.D., *H. L. Lyon Arboretum*
 KEITH S. SNYDER, B.A., *Auxiliary Services*
 R. J. MCBEATH, B.A., M.S., PH.D., *Communications Service Center*

- JOHN G. CHANTINY, B.A., M.A., ED.D., *Conference Center*
 C. PEAIRS WILSON, B.S., M.S., PH.D., *Cooperative Extension Service*
 DALE N. GOODELL, B.S., M.S., *Associate Director*
 JOHN MICHEL, B.A., M.A., PH.D., *Counseling and Testing Center*
 WALTER MIKLIUS, B.A., M.A., PH.D., *Economic Research Center*
 DAVID G. RYANS, B.A., A.M., PH.D., *Education Research and Development Center*
 ROBERT M. REED, B.A., M.A., *Educational Television Broadcasting Service*
 TOM DINELL, B.A., M.P.A., *Education for Planning Project*
 HOWARD P. HARRENSTIEN, B.S., M.S., PH.D., *Center for Engineering Research*
 PHILIP W. KOEHLER, B.A., *Facilities Management*
 ROBERT C. GOODRIDGE, B.A., M.ED., ED.D., *Financial Aids*
 C. PEAIRS WILSON, B.S., M.S., PH.D., *Hawaii Agricultural Experiment Station*
 G. DONALD SHERMAN, B.S., M.S., PH.D., *Associate Director*
 ARTHUR R. KING, JR., B.A., M.A., ED.D., *Hawaii Curriculum Center*
 GEORGE P. WOOLLARD, B.S., M.S., A.M., PH.D., *Hawaii Institute of Geophysics*
 VERNON E. BROCK, A.B., M.A., *Hawaii Institute of Marine Biology*
 FRIEDRICH SEIFERT, TH.D., *Honors Programs and Selected Studies (Acting)*
 HAROLD S. ROBERTS, B.S.S., M.A., PH.D., *Industrial Relations Center*
 JOHN T. JEFFERIES, B.S., D.S., M.A., *Institute for Astronomy*
 MILDRED D. KOSAKI, B.ED., M.ED., *Institutional Research Office*
 JOHN N. STALKER, B.A., M.A., PH.D., *International Programs*
 A. LEE ZEIGLER, B.A., M.S., *International Student Office*
 HAROLD L. BAKER, B.S., M.S., PH.D., *Land Study Bureau*
 HERMAN S. DOI, A.B., LL.B., *Legislative Reference Bureau*
 CHARLES L. BRETSCHNEIDER, B.S., M.S., PH.D., *Look Laboratory of Oceanographic Engineering (Acting)*
 JOHN M. ALLISON, B.A., LL.D., *Overseas Career Program*
 TERENCE A. ROGERS, B.S., PH.D., *Pacific Biomedical Research Center*
 HOWARD P. MCKAUGHAN, B.A., M.TH., M.A., PH.D., *Pacific and Asian Linguistics Institute*
 PHILLIP B. OLSEN, B.A., M.A., *Peace Corps Training for Hawaii*
 NEWTON E. MORTON, B.A., M.S., PH.D., *Population Genetics Laboratory*
 MYRTLE S. BRODIE, *Personnel*
 RICHARD S. ALM, B.S., M.A., PH.D., *Reading Clinic*
 A. LEONARD DIAMOND, B.A., M.A., PH.D., *Sensory Sciences Laboratory*
 CHARLES F. HEYE, B.B.A., M.B.A., *Small Business Management Program*
 WILLIAM P. LEBRA, B.A., M.A., PH.D., *Social Science Research Institute*
 JACK T. NAGOSHI, B.A., M.S.W., *Social Welfare, Development and Research Center*
 MERLE ANSBERRY, B.A., M.A., PH.D., *Speech and Hearing Clinic*
 W. WESLEY PETERSON, B.A., PH.D., *Statistical and Computing Center (Acting)*
 ALFRED L. ELLINGSON, B.A., B.S., *Bureau of Student Activities*
 DONALD F. B. CHAR, M.D., *Student Health Office*
 JAMES M. BURGOYNE, B.S. M.B.A., *Student Housing Office*
 WILLIAM M. ADAMS, B.A., M.S., PH.D., M.B.A., *Tsunami Research*
 H. ROY MCARDLE, B.S., M.B.A., *University Placement and Career Planning*
 ROBERT W. SPARKS, B.A., M.A., *University Press*
 FREDERICK Y. SMITH, B.S., M.S., *University Relations and Development*
 DOAK C. COX, B.S., M.A., PH.D., *Water Resources Research Center*

EMERITI

- ANDREWS, CARL B., *Professor Emeritus of Engineering*
B.S. 1908, M.S. 1909, C.E. 1917, Rose Polytechnic Institute; M.S. 1928, M.I.T.
- BENNETT, J. GARDNER, *Professor Emeritus of Engineering*
B.S. 1912, Cornell College; B.S. in C.E. 1918, C.E. 1925, Wisconsin
- BICE, CHARLES M., *Senior Specialist Emeritus in Poultry Husbandry*
B.S. 1927, Wisconsin
- BILGER, LEONORA N. (Mrs. Earl M.), *Senior Professor Emeritus of Chemistry*
B.A. 1913, M.A. 1914, PH.D. 1916, LL.D. 1950, Cincinnati
- BOATMAN, ELSIE M. (Mrs.), *Professor Emeritus of Home Economics*
B.S. 1924, M.S. 1931, Iowa State
- BROWN, HUBERT E., *Professor Emeritus of Health and Physical Education*
B.P.E. 1920, M.P.E. 1927, Springfield College; PH.D. 1940, New York
- CARR, ELIZABETH B. (Mrs.), *Professor Emeritus of Speech*
B.A. 1924, M.A. 1940, Oklahoma; PH.D. 1953, Louisiana State
- CARTER, WALTER, *Professor Emeritus of Entomology*
B.S. 1923, Montana; M.S. 1924, PH.D. 1928, Minnesota
- CHARLOT, JEAN, *Senior Professor Emeritus of Art*
D.F.A. 1946, Grinnell; LL.D. 1956, St. Mary's College
- CLEMENTS, HARRY F., *Senior Professor Emeritus of Plant Physiology*
B.S. 1924, M.S. 1925, Wisconsin; PH.D. 1929, Chicago
- CLOPTON, ROBERT W., *Senior Professor Emeritus of Education*
B.A. 1926, Maryville College; M.ED. 1941, Hawaii; PH.D. 1946, Northwestern
- ECKE, GUSTAV E. W., *Professor Emeritus of Art*
PH.D. 1922, Erlangen
- EDMONDSON, CHARLES H., *Professor Emeritus of Zoology*
PH.B. 1903, M.S. 1904, PH.D. 1906, Iowa
- ELLER, WILLARD E., *Professor Emeritus of Physics*
B.S. 1914, PH.D. 1928, California; M.S. 1925, Washington
- EMORY, KENNETH P., *Professor Emeritus of Anthropology*
B.A. 1920, Dartmouth; M.A. 1923, Harvard; PH.D. 1946, Yale
- EWING, CLAUDE H., *Professor Emeritus of Education*
PH.B. 1933, Chicago; M.A. 1936, Colorado State College; PH.D. 1946, Northwestern
- GRUELLE, KATHERINE B. (Mrs. L. N.), *Professor Emeritus of Home Economics*
B.S. 1917, Ohio State; M.A. 1925, Columbia
- HANDLEY, KATHARINE N., *Dean Emeritus and Professor Emeritus of Social Work*
B.A. 1923, Pomona; M.A. 1928, Stanford; M.S.W. 1942, Southern California
- HARLOE, BARTLEY M., *Professor Emeritus of Engineering*
B.S. 1917, U.S. Military Academy; C.E. 1922, Rensselaer
- HENKE, LOUIS A., *Professor Emeritus of Agriculture*
B.S. 1912, M.S. 1923, Wisconsin
- HERRICK, COLIN J., *Professor Emeritus of Psychology*
B.A. 1924, Haverford College; M.A. 1934, PH.D. 1939, Pennsylvania
- HOLMES, WILFRED J., *Dean Emeritus and Senior Professor Emeritus of Engineering*
B.S. 1922, U.S. Naval Academy; M.S. 1929, Columbia
- JONES, VIRGINIA A., *Dean Emeritus and Professor Emeritus of Nursing*
R.N. 1920, Reid Memorial Hospital School of Nursing; B.S. 1933, Indiana; M.ED. 1944, Hawaii

- KAHANANUI, DOROTHY (Mrs.), *Associate Professor Emeritus of Music*
 B.S. 1931, New York; M.ED. 1936, Hawaii
- KORN, ALFONS L., *Professor Emeritus of English*
 B.A. 1927, Oregon; B.A. 1930, Oxford; M.A. 1937, California (Berkeley)
- LEEBRICK, KARL C., *Professor Emeritus of Government*
 B.S. 1911, M.S. 1913, PH.D. 1916, California
- LIND, ANDREW W., *Senior Professor Emeritus of Sociology*
 B.A. 1924, M.A. 1925, Washington; PH.D. 1931, Chicago
- LIVESAY, THAYNE M., *Dean Emeritus, College of Arts and Sciences*
 B.A. 1917, Pacific University; M.A. 1921, PH.D. 1931, Washington
- MILLER, CAREY D., *Professor Emeritus of Nutrition*
 B.A. 1917, California; M.S. 1922, Columbia
- MIYAKE, IWAO, *Professor Emeritus of Physics*
 B.S. 1926, M.S. 1929, Hawaii
- MOORE, CHARLES A. (deceased), *Senior Professor Emeritus of Philosophy*
 B.A. 1926, PH.D. 1932, Harvard
- MUELLER, BERTHA, *Professor Emeritus of European Languages*
 B.A. 1926, Northwestern; M.A. 1929, PH.D. 1935, Wisconsin
- NICKERSON, THOMAS, *Director Emeritus, University Press*
 A.B. 1925, Harvard
- PECKER, IRVING O., *Professor Emeritus of Romance Languages*
 B.A. 1912, Boston
- POOLE, CHARLES F., *Senior Professor Emeritus of Agriculture*
 B.S. 1920, M.S. 1926, Hawaii; PH.D. 1930, California
- PORTEUS, STANLEY D., *Professor Emeritus of Psychology*
 SC.D. (Hon.) 1933, Hawaii
- ST. JOHN, HAROLD, *Professor Emeritus of Botany*
 B.A. 1914, M.A. 1915, PH.D. 1917, Harvard
- SAUNDERS, ALLAN F., *Senior Professor Emeritus of Political Science*
 B.A. 1918, Amherst; M.A. 1920, PH.D. 1927, Wisconsin
- SINCLAIR, GREGG M., *President Emeritus*
 Degrees listed under "Former Presidents"
- SNYDER, LAURENCE H., *President Emeritus and Senior Professor Emeritus of Genetics*
 Degrees listed under "Former Presidents"
- STORMONT, JOHN, *Specialist Emeritus. Cooperative Extension Service*
 B.S. 1928, Illinois; M.ED. 1954, Cornell
- STROVEN, CARL G., *Senior Professor Emeritus of English and Librarian Emeritus*
 A.B. 1926, M.A. 1928, Stanford; PH.D. 1939, Duke
- TOWNES, STANMORE B., *Professor Emeritus of Mathematics*
 B.A. 1921, M.A. 1923, Oklahoma; PH.D. 1930, Chicago
- VOLLRATH, HARVEY M., *Professor Emeritus of Animal Husbandry*
 B.S. 1929, Colorado State; M.S. 1948, Minnesota
- WADSWORTH, HAROLD A., *Dean Emeritus. College of Agriculture*
 B.S. 1916, California
- WHITE, BRUCE E., *Dean Emeritus and Senior Professor Emeritus of Education*
 B.A. 1923, Willamette; M.A. 1932, PH.D. 1935, Washington
- YOUNGE, OTTO R., *Professor Emeritus of Agronomy*
 B.S. 1924, M.S. 1929, Alberta; PH.D. 1934, Minnesota

ACADEMIC CHAIRS

- The A&B/Matson Chair in Economics, funded by Alexander & Baldwin Inc. and Matson Navigation Company, unoccupied in 1967-68.
- The Citizens' Chair in English Literature, funded by the Hawaii State Legislature, IAN P. WATT* (Fall 1968); LEON EDEL* (Spring 1969).
- The Captain James Cook Chair in Oceanography, funded by The Honolulu Advertiser, unoccupied in 1967-68.
- The Hawaiian Telephone Company Chair in Science, funded by the Hawaiian Telephone Company, GEORG VON BEKESY.*
- The Pacific Islands Chair in Anthropology, funded by the Hawaii State Legislature, RAYMOND FIRTH* (1968-69).
- The Gerrit Parmile Wilder Chair in Botany, established by the will of the late Lillian Kimball Wilder (in memory of her husband), ALBERT C. SMITH.*

INSTRUCTION

- ABBOTT, AGATIN T., *Professor of Geology*
B.A. 1939, Minnesota; PH.D. 1952, Washington
- ABRAMSON, JOAN E., *Instructor in English*
A.B. 1954, M.A. 1955, California (Los Angeles)
- ABRAMSON, NORMAN, *Professor of Electrical Engineering*
A.B. 1953, Harvard; M.A. 1955, California (Los Angeles); PH.D. 1958, Stanford
- ABRUMS, TOM E., *Instructor in English*
B.A. 1932, M.A. 1937, Colorado
- ABUDU, ASSIBI O., *Acting Assistant Professor of Economics*
B.A. 1962, Minnesota; M.A. 1964, Indiana
- ADAMS, CARL W., *Assistant Professor of Meteorology*
B.S. 1940, Naval Academy; M.S. 1951, Naval Postgraduate School
- ADAMS, WILLIAM M., *Professor of Geophysics*
A.B. 1951, Chicago; B.A. 1953, California (Berkeley); M.S. 1955, PH.D. 1957, St. Louis; M.B.A. 1964, Santa Clara
- ADKINS, DOROTHY C., *Professor of Education*
B.S. 1951, PH.D. 1937, Ohio
- ADLER, JACOB, *Professor of Accounting and Finance*
B.S. 1933, Chicago; M.S. 1956, PH.D. 1959, Columbia; C.P.A. 1950
- AH CHAN, DORA, *Instructor in Music*
MUS.B. 1962, Oberlin; M.S. 1965, Juilliard School of Music
- AH MOO, EARL W., *Associate Professor in Dental Hygiene*
D.D.S. 1961, M.S. 1964, Marquette
- AIU, CYNTHIA B., *Associate Professor of Nursing*
B.S. 1956, M.S. 1961, California (Los Angeles)
- AKAMINE, ERNEST K., *Associate Professor of Plant Physiology*
B.S. 1935, M.S. 1941, Hawaii
- AKITA, GEORGE, *Associate Professor of History and Asian Studies*
B.A. 1951, Hawaii; M.A. 1953, PH.D. 1960, Harvard
- ALEXANDER, AARON, *Instructor in English*
B.A. 1951, City College of New York; M.A. 1958, Columbia
- ALEXANDER, JOHN, *Lecturer in Public Health*
B.A. 1934, North Carolina; M.S. 1936, LL.B. 1941, Columbia
- ALEXANDER, SUMITRA T., *Instructor in Thai*
B.A. 1960, Chulalongkorn; M.A. 1963, Hawaii
- ALLEN, JAMES G., *Associate Professor of Human Development*
B.S. 1949, Wisconsin; M.S. 1954, PH.D. 1960, Iowa State
- ALLEN, JAMES L., JR., *Associate Professor of English (Hilo)*
B.A. 1953, M.A. 1954, Tulane; PH.D. 1959, Florida
- ALLISON, JOHN M., *Director of Overseas Career Program*
B.A. 1927, LL.D. 1959, Nebraska
- ALLTON, DONALD W., *Lecturer in Music*
B.M. 1936, M.M. 1938, Eastman School of Music (Rochester)
- ALM, JULIE N., *Assistant Professor of Education*
B.S. 1943, M.A. 1947, Minnesota
- ALM, RICHARD S., *Professor of Education*
B.S. 1942, M.A. 1948, PH.D. 1954, Minnesota
- ALSCHULER, LAWRENCE R., *Assistant Professor of Political Science*
B.A. 1963, Wesleyan; M.A. 1965, Northwestern

* Degrees listed under "Instruction."

- ALTER, JASON B., *Instructor in English as Second Language*
B.A. 1952, Harvard College; M.A. 1956 Michigan
- AMES, LAWRENCE L., *Assistant Professor of Psychology*
A.B. 1958, A.M. 1962, George Washington; PH.D. 1968, Maryland
- AMIOKA, SHIRO, *Professor of Education*
B.ED. 1949, M.ED. 1952, Hawaii; PH.D. 1959, Illinois
- ANDERMANN, GEORGE, *Assistant Professor of Chemistry*
B.S. 1949, California (Los Angeles); M.S. 1961, PH.D. 1965, Southern California
- ANDERSON, C. WEBSTER, *Professor of Art*
B.A. 1933, California; M.A. 1933, California (Los Angeles)
- ANDERSON, GEORGE L., *Professor of English*
A.B. 1946, M.A. 1948, PH.D. 1953, Pennsylvania
- ANDERSON, R. GENF., *Acting Assistant Professor of Speech*
B.A. 1954, M.A. 1958, Baylor
- ANDERSON, RONALD S., *Professor of Education*
B.A. 1929, M.A. 1946, Stanford; PH.D. 1956, California
- ANDO, RICHARD E., *Lecturer in Professional Nursing*
M.D. 1948, Michigan Medical School
- ANDREWS, JAMES E., *Assistant Professor of Oceanography*
B.A. 1963, Amherst; PH.D. 1967, Miami
- ANDREWS, MARY M., *Associate Professor of Library Studies*
A.A. 1934, Chico; B.A. 1939, M.S. in L.S. 1952, California
- ANSBERRY, MERLE, *Professor of Speech Pathology and Audiology*
B.A. 1929, M.A. 1931, California; PH.D. 1937, Wisconsin
- AOKI, MITSUO, *Professor of Religion*
B.A. 1940, Drury; B.D. 1943, Chicago Theological Seminary
- ARAGAKI, MINORU, *Associate Professor of Plant Pathology*
B.S. 1950, M.S. 1954, PH.D. 1963, Hawaii
- ARAI, SUEKO, *Lecturer in Music*
Natori Diploma, 1949, Hanayagi School (Japan)
- ARAKI, JAMES T., *Professor of Japanese*
B.A. 1954, M.A. 1958, PH.D. 1961, California (Berkeley)
- ARAPOFF, NANCY, *Instructor in English as Second Language*
B.A. 1952, California (Santa Barbara); M.A. 1963, Hawaii
- ARKOFF, ABE, *Professor of Psychology*
B.A. 1946, M.A. 1948, PH.D. 1951, Iowa
- ARMSTRONG, R. WARWICK, *Associate Professor of Geography and Public Health*
B.A. 1957, M.A. 1959, Auckland; PH.D. 1963, Illinois; M.P.H. 1964, Michigan
- ARTOLA, GEORGE T., *Associate Professor of Asian and Pacific Languages and Asian Studies*
B.A. 1941, Brooklyn; M.A. 1950, PH.D. 1953, Johns Hopkins
- ARTOLA, VIRGINIA, *Lecturer in European Languages*
M.A. 1941, Brooklyn
- ASATO, JAMES K., *Assistant Professor of Health and Physical Education*
B.S. 1952, Hawaii; M.S. 1956, Illinois
- ASATO, KATHERINE H., *Assistant Professor of Social Work*
B.A. 1955, M.S.S.A. 1960, Western Reserve
- ASCHER, LEONARD W., *Professor of Finance*
B.A. 1927, PH.D. 1934, California (Berkeley)
- ASHBY, DAVID, *Assistant Professor of Economics*
B.A. 1962, PH.D. 1968, Oregon
- ASHTON, GEOFFREY C., *Professor of Genetics*
B.S.C. 1945, PH.D. 1958, D.S.C. 1967, Liverpool
- ASPINWALL, DOROTHY B., *Professor of European Languages*
B.A. 1933, M.A. 1939, Alberta; PH.D. 1948, Washington
- ATEN, DONALD G., *Assistant Professor of Education*
B.ED. 1956, B.A. 1961, Hawaii; M.A. 1957, Columbia
- AUSTIN, F. GLENN, *Professor of Education*
B.A. 1935, M.A. 1938, Kansas; PH.D. 1949, Ohio State
- AUYONG, MAJ. STEPHEN K. H., *Assistant Professor of Military Science*
B.B.A. 1959, Hawaii
- AVERBOOK, ARTHUR S., *Instructor in Travel Industry Management*
B.A. 1966, Michigan State; M.B.A. 1968, George Washington
- AVERY, DON E., *Associate Professor of Engineering*
B.S. 1937, M.E. 1950, Washington
- AYORA, JORGE R., *Acting Assistant Professor of Spanish*
B.A. 1960, M.A. 1964, Washington
- AYRAULT, MARGARET W., *Professor of Library Studies*
A.B. 1933, Oberlin; B.S. in L.S. 1934, Drexel; M.S. in L.S. 1941, Columbia
- BARRIE, EARL R., *Assistant Professor of Sociology*
A.B. 1960, Harvard; M.A. 1966, California
- BACIU, MIRA, *Acting Assistant Professor of French Faculty of Pharmacy* 1943, Bucharest; Pharmaceutical Permit 1948, Berne; M.A. 1967, Middlebury
- BACIU, STEFAN, *Associate Professor of Spanish*
B.A. 1937, M.A. 1941, Law Faculty, Liceu Andrei Saguna
- BACKUS, JOSEPH M., *Associate Professor of English*
B.A. 1949, Allegheny; M.S. 1954, Columbia; M.A. 1957, PH.D. 1961, California
- BADER, RICHARD G., *Professor of Oceanography*
B.S. 1943, Maine; M.S. 1950, PH.D. 1952, Chicago
- BAILEY, JOSEPH K., *Professor of Management*
B.A., B.S. 1934, Salem; M.B.A. 1948, PH.D. 1955, Texas
- BAKER, GLADYS E., *Professor of Botany*
B.A. 1930, M.S. 1932, Iowa; PH.D. 1935, Washington

- BAKER, HAROLD L., *Lecturer in Agricultural Economics*
B.S. 1939, Utah State; M.S. 1942, PH.D. 1965, California (Berkeley)
- BALDWIN, ROGER E., *Assistant Professor of Science (Hilo)*
A.A. 1949, Coalinga; B.S. 1951, M.S. 1953, Oregon State; PH.D. 1964, Minnesota
- BALL, HARRY V., *Professor of Sociology*
B.A. 1949, M.A. 1950, Washington; PH.D. 1956, Minnesota
- BALLIF, BONNIE L., *Assistant Professor of Education*
B.S. 1962, PH.D. 1966, Brigham Young
- BANNER, ALBERT H., *Professor of Zoology*
B.S. 1935, PH.D. 1943, Washington; M.S. 1940, Hawaii
- BARHAM, FRANK W., *Instructor in English as Second Language*
B.A. 1954, Virginia; M.A. 1967, American
- BARNET, EDWARD M., *Professor of Marketing and Management*
S.B. 1934, M.B.A. 1936, Harvard; PH.D. 1954, Columbia
- BARRINGER, HERBERT R., *Associate Professor of Sociology*
A.B. 1959, San Diego State College; M.A. 1961, PH.D. 1963, Northwestern
- BARTOLOMEW, DUANE P., *Assistant Professor of Agronomy*
B.S. 1961, California Polytech.; PH.D. 1965, Iowa State
- BASLOW, MORRIS H., *Associate Professor of Pharmacology*
B.A. 1953, M.SC. 1957, PH.D. 1962, New York
- BAUMAN, SISTER HELEN MARY, *Lecturer in Social Work*
B.A. 1946, Nazareth College; M.S.W. 1952, Catholic University
- BAUMER, JACK F., *Instructor in Asian Languages*
B.A. 1953, Bowdoin; M.A. 1959, Madras; PH.D. 1965, Pennsylvania
- BAYLEY, SUSAN C., *Instructor in English as Second Language*
B.A. 1964, Pennsylvania State; M.A. 1967, Pittsburgh
- BEARDSLEY, JOHN W., *Associate Professor of Entomology*
B.S. 1950, California; M.S. 1952, PH.D. 1963, Hawaii
- BEATON, JOHN R., *Professor of Foods and Nutrition*
B.A. 1949, M.S. 1950, PH.D. 1952, Toronto
- BECKER, STANLEY L., *Assistant Professor of General Science*
B.S. 1953, New York State Coll. of Forestry; PH.D. 1967, Wisconsin
- BECKER, THEODORE L., *Associate Professor of Political Science*
B.A. 1954, LL.B. 1956, Rutgers; M.A. 1960, Maryland; PH.D. 1964, Northwestern
- BECKMAN, LARS E. A., *Professor of Genetics*
B.S. 1953, M.S. 1956, PH.D. 1957, F.D. 1959, Uppsala
- BECKSTROM, WILHELMINA, *Assistant of Nursing*
B.S. 1941, Washington
- BELANGIA, TSGET, CLAUDE D., *Instructor in Aerospace Studies*
- BELL, DONALD W., *Assistant Professor of Real Estate*
B.S. 1943, Montana State
- BELL, THEODORE L., *Assistant Professor of Public Health*
B.A. 1958, Millikin; M.S.P.H. 1962, N. Carolina
- BENDER, BYRON W., *Associate Professor of Linguistics*
B.A. 1949, Goshen College; M.A. 1950, PH.D. 1963, Indiana
- BENEDICT, ALBERT A., *Professor of Microbiology*
A.B. 1948, M.A. 1950, PH.D. 1952, California
- BENNETT, HANNAH LOU, *Assistant Professor of Education*
B.S. 1939, Northwest Missouri State; M.A. 1947, Ohio State
- BENTLEY, LUCIE F., *Associate Professor of Drama and Theatre*
B.A. 1928, Stanford; M.A. 1933, Cornell
- BERGER, ANDREW J., *Professor of Zoology*
B.A. 1939, Oberlin; M.A. 1947, PH.D. 1950, Michigan
- BERGER, LESLIE R., *Associate Professor of Microbiology*
B.S. 1950, Cincinnati; M.S. 1953, Washington; PH.D. 1957, California (Davis)
- BERMOSK, LORETTA S., *Associate Professor of Nursing*
B.S.N. 1949, New York; M.LITT. 1952, Pittsburgh
- BERNATOWICZ, ALBERT J., *Professor of General Science*
B.A. 1948, Clark; M.A. 1950, PH.D. 1953, Michigan
- BERNSTEIN, DAVID J., *Acting Assistant Professor of History*
B.A. 1962, Brandeis; M.A. 1963, Harvard
- BESS, HENRY A., *Senior Professor of Entomology*
B.S. 1927, Alabama Polytechnic; M.S. 1931, Florida; PH.D. 1934, Ohio State
- BESS, H. DAVID, *Assistant Professor of Transportation*
B.S. 1961, U. S. Merchant Marine Academy; M.B.A. 1964, PH.D. 1967, California (Los Angeles)
- BEYERS, OTTO J., *Professor of Education*
B.A. 1933, Wayne; M.A. 1934, ED.D. 1936, Washington
- BHAGAVAN, NADHIPURAM V., *Assistant Professor of Medical Technology*
B.S. 1951, Mysore; M.S. 1955, Bombay; PH.D. 1960, California
- BHUSHAN, VIDYA, *Assistant Professor of Education*
B.S. 1949, M.S. 1951, Meerut; M.ED. 1958, Lucknow; ED.D. 1964, Indiana
- BICKSLER, JAMES L., *Assistant Professor of Business Economics & Statistics*
B.A. 1959, Beloit; M.B.A. 1960, PH.D. 1967, New York
- BIGGS, BRUCE G., *Professor of Linguistics*
B.A. 1952, M.A. 1953, New Zealand; PH.D. 1957, Indiana
- BILOUS, CAROLYN B., *Assistant Professor of Education*
B.S. 1938, Temple; M.A. 1949, Columbia

- BILSBORROW, ELEANOR J.**, *Associate Professor of Speech*
B.A. 1937, Colorado State College; M.A. 1942, Stanford; PH.D. 1957, Denver
- BISHOP, BARBARA**, *Instructor of Nursing*
B.S.N. 1950, M.S. 1962, Pennsylvania
- BITNER, HAROLD M.**, *Professor of Psychology*
B.S. 1941, Pennsylvania State Teachers College (Shippensburg); M.A. 1945, Duke; PH.D. 1951, Ohio State
- BLACK, IVA R.**, *Instructor in Speech (Hilo)*
B.S. 1954, M.A. 1960, Northwestern
- BLACKSTONE, JUDITH A.**, *Instructor in English*
B.S. 1965, M.S. 1967, Wisconsin
- BLAISDELL, RICHARD K.**, *Professor of Medicine*
B.A. 1945, Redlands; M.D. 1947, Chicago
- BLANCHARD, JEANNE G.**, *Instructor of Nursing*
B.S. 1959, San Francisco State; M.S. 1963, California (San Francisco)
- BLANCHARD, ROBERT J.**, *Associate Professor of Psychology*
B.A. 1958, Boston; M.A. 1961, PH.D. 1962, Iowa
- BLOOMBAUM, MILTON S.**, *Associate Professor of Sociology*
M.A. 1958, Southern California; A.B. 1952, PH.D. 1961, California
- BOBLIN, ROBERT T.**, *Associate Professor of Religion*
A.B. 1949, Adrian; M.TH. 1953, PH.D. 1960, Southern California
- BOUSI, JOSEPH B.**, *Assistant Professor of Spanish*
B.A. 1960, New York; M.A. 1961, Middlebury; PH.D. 1964, Madrid
- BOEL, RENE A.**, *Lecturer in German*
B.A. 1934, Ingenieur Commercial 1922, University de L'Etat
- BOHGAARD, ANN M.**, *Assistant Professor of Physics and Astronomy*
A.B. 1961, Mount Holyoke; PH.D. 1966, California (Berkeley)
- BOGGS, STEPHEN T.**, *Associate Professor of Anthropology*
A.B. 1947, Harvard; PH.D. 1954, Washington
- BOLLINGER, JOHN**, *Instructor in Music*
B.M. 1950, Oberlin; M.M. 1962, Yale
- BONARIO, BERNARD**, *Acting Assistant Professor of Art*
B.S. 1961, Texas; M.A. 1963, Michigan
- BONBRIGHT, DANIEL C.**, *Lecturer in Accounting and Finance*
B.S. 1933, Ohio State; LL.B. 1942, Detroit
- BONK, WILLIAM J.**, *Assistant Professor of Anthropology (Hilo)*
B.A. 1951, M.A. 1954, Hawaii
- BONN, GEORGE S.**, *Professor of Library Studies*
B.CH.F. 1935, M.S.C. 1936, Ohio State; M.A.L.S. 1951, Chicago
- BONSACK, WALTER K.**, *Associate Professor of Physics and Astronomy*
B.S. 1954, Case Institute of Technology; PH.D. 1958, California Institute of Technology
- BORGSMANN, ALBERT**, *Assistant Professor of Philosophy*
M.A. 1961, Illinois; PH.D. 1963, Munich (Germany)
- BOUSLOG, CHARLES S.**, *Professor of English*
B.A. 1934, Indiana; M.A. 1948, PH.D. 1951, Harvard
- BOWERS, NEAL M.**, *Professor of Geography; Chairman, South Asia Area Committee*
B.S. 1938, Western Michigan College; M.S. 1939, PH.D. 1951, Michigan
- BOYER, JEFF**, *Assistant Professor of Agricultural Economics*
B.S. 1955, M.S. 1957, Arizona
- BOYER, WILLIAM H.**, *Associate Professor of Education*
B.A. 1948, Oregon; M.ED. 1952, Colorado; ED.D. 1956, Arizona State
- BOYNE, THOMAS W.**, *Lecturer in Marketing*
B.A. 1947, Hawaii; M.S. 1949, Columbia
- BOYS, ELLIS J.**, *Assistant Professor of Nursing*
B.A. 1946, M.A. 1956, San Jose State; M.S. 1960, California (San Francisco)
- BRANHAM, JOSEPH M.**, *Assistant Professor of Zoology*
B.S. 1956, M.S. 1958, PH.D. 1963, Florida State
- BRANTLEY, L. REED**, *Professor of Education*
A.B. 1927, California (Los Angeles); M.S. 1929, PH.D. 1930, California Institute of Technology
- BRAUN, FREDERICK G.**, *Assistant Professor of Education*
B.A. 1949, M.ED. 1954, ED.D. 1962, California (Los Angeles)
- BREEN, NANCY E.**, *Instructor in English*
B.A. 1965, St. John's; M.A. 1967, Ohio State
- BREININGER, RONALD E.**, *Acting Assistant Professor of Russian*
B.A. 1965, M.A. 1967, Pittsburgh
- BRENEMAN, LUCILLE**, *Associate Professor of Speech*
B.A. 1935, Baylor; M.A. 1949, Hawaii
- BRETSCHNEIDER, CHARLES L.**, *Professor of Ocean Engineering*
B.S. 1947, Hillsdale College; M.S. 1950, California (Berkeley); PH.D. 1959, Texas A. & M.
- BREWBAKER, JAMES L.**, *Professor of Horticulture*
B.A. 1948, Colorado; PH.D. 1952, Cornell
- BRIGGS, NORMA**, *Instructor of Nursing*
B.S.N. 1965, Marquette; M.S. 1967, California (Los Angeles)
- BRISTOL, MELVIN L.**, *Assistant Professor of Botany*
A.B. 1960, A.M. 1962, PH.D. 1965, Harvard
- BROCK, VERNON E.**, *Professor of Oceanography*
A.B. 1935, M.A. 1944, Stanford
- BRODD, DONNA R.**, *Instructor of Nursing*
B.S.N. 1964, Nebraska; M.S. 1966, Colorado
- BRODIE, DONALD Q.**, *Assistant Professor of Sociology*
B.A. 1962, M.A. 1965, Pittsburgh
- BROOKS, COY C.**, *Professor of Animal Science*
B.S. 1942, Arkansas; M.S. 1949, PH.D. 1954, Missouri
- BROTT, LILLIAN K.**, *Lecturer in Japanese*
B.A. 1945, Y.M.C.A. College
- BROWN, DIANE**, *Instructor in Human Development*
B.S. 1964, Cornell

- BROWN, DOROTHY S., *Assistant Professor of English*
B.A. 1934, Hawaii; M.A. 1935, Stanford; Ph.D. 1956, Washington
- BROWN, FRANK B., *Instructor in Education*
B.A. 1957, Boston; 5th Yr. Cert. 1960, M.Ed. 1963, Hawaii; D.Ed. 1967, Indiana
- BROWN, HUGH G., *Instructor in Japanese*
B.S. 1948, Virginia Polytechnic Institute
- BROWN, KATHARINA M., *Instructor in German*
B.A. 1959, St. Xavier; M.A. 1961, Loyola; M.A. 1968, Hawaii
- BROWN, MYRTLE L., *Associate Professor of Public Health*
B.S. 1945, Bennett College; M.S. 1948, Ph.D. 1957, Pennsylvania State
- BROWN, STUART G., *Professor of American Studies*
B.A. 1934, Amherst; Ph.D. 1937, Princeton
- BROWNELL, JOHN A., *Professor of Education*
B.A. 1947, M.A. 1948, Whittier; Ed.D. 1952, Stanford
- BRUNN, DONALD W., *Instructor in English*
B.A. 1965, San Francisco State College, M.F.A. 1967, Iowa
- BUCH, LESLIE N., *Assistant Professor of Business Law*
A.B. 1963, Dartmouth; LL.B. 1966, Harvard
- BUCHELE, ROBERT, *Professor of Management*
B.A. 1938, Columbia; M.B.A. 1938, Harvard; Ph.D. 1951, Chicago
- BUCKMAN, KAREN, *Lecturer in Social Work*
B.A. 1959, DePauw; M.A. 1961, Indiana
- BUDDENHAGEN, IVAN W., *Professor of Plant Pathology*
B.S. 1953, M.S. 1954, Ph.D. 1957, Oregon State College
- BUDY, ANN M., *Associate Professor of Medicine*
B.S. 1946, Ph.D. 1954, Chicago
- BURBANK, NATHAN C., JR., *Professor of Public Health*
B.A. 1938, M.S. 1940, Harvard; B.S.C.E. 1950, Oklahoma Institute of Technology; Sc.D. 1955, M.I.T.
- BURGESS, HUGH, *Assistant Professor of Art*
B.S. 1954, B.Arch. 1960, Idaho
- BURGESS, JOHN C., *Professor of Mechanical Engineering*
Sc.B. 1944, Brown; M.S. 1949, Ph.D. 1955, Stanford
- BURNS, ALFRED, *Associate Professor of Classics*
B.A. 1952, M.A. 1958, Ph.D. 1964, Washington
- BURTON, LEON H., *Lecturer in Music*
B.Ed., 5th Yr. Cert. 1956, Hawaii; M.A. 1957, Ed.D. 1963, Columbia
- BURY, DOUGLAS C., *Assistant Professor of Law*
LL.B. 1936, Alberta; Queen's Counsel (Hon.), Alberta, 1952
- BUSHNELL, KENNETH W., *Assistant Professor of Art*
B.A. 1956, California (Los Angeles); M.F.A. 1961, Hawaii
- BUSHNELL, OSWALD A., *Professor of Microbiology*
B.S. 1934, Hawaii; M.S. 1935, Ph.D. 1937, Wisconsin
- BYERS, BURTON H., *Associate Professor of Speech*
B.A. 1934, Iowa; M.A. 1940, Columbia; Ed.D. 1957, Mexico
- CAHILL, ROBERT S., *Associate Professor of Political Science*
B.A. 1954, Reed; M.A. 1961, Ph.D. 1962, Oregon
- CAMPBELL, BURNHAM O., *Associate Professor of Economics*
B.A. 1948, Ph.D. 1960, Stanford
- CAMPBELL, ROBERT L., *Associate Professor of Education*
B.S. 1950, Illinois Institute of Technology; M.Ed. 1951, Louisiana State
- CANARY, ROBERT H., *Associate Professor of English*
B.A. 1960, Denison, M.A. 1962, Ph.D. 1963, Chicago
- CARLSON, JOHN GREGORY, *Assistant Professor of Psychology*
B.A. 1963, Ph.D. 1967, Minnesota
- CARR, ALBERT B., JR., *Associate Professor of Education*
B.S. 1950, Iona College; M.A. 1951 Ed.D. 1958, Columbia
- CARROLL, COL. BERNARD G., JR., *Professor of Military Science*
B.S. 1942, Washington State; B.B.A. 1957, Hofstra; M.A. 1962, George Washington
- CARROLL, MERELLE R., *Instructor in French*
Licence ès Lettres 1960, Diplôme d'Etudes Supérieures 1961, Paris
- CARSE, WILLIAM T., *Associate Professor of Education*
B.S. 1950, M.S. 1951, North Texas State; Ed.D. 1961, Illinois
- CARSTANJEN, SONDRÁ, *Instructor in French*
B.A. 1964, Otterbein; M.A. 1966, Massachusetts
- CASARETT, LOUIS J., *Associate Professor of Pharmacology*
B.S. 1950, M.S. 1955, Ph.D. 1958, Rochester
- CASELLAS, ELIZABETH R., *Assistant Professor of Library Studies*
B.M. 1948, Chicago Music College; M.A. 1949, M.S. 1964, Columbia
- CASSIDY, MAUREEN, *Instructor in French*
B.Ed. 1957, M.A. 1968, Hawaii; Diploma 1965, Paris
- CASWELL, JAMES, *Acting Assistant Professor of Art*
B.A. 1959, M.A. 1962, Michigan
- CAULFIELD, MARILYN W., *Assistant Professor of Social Work*
B.A. 1949, Ohio; M.S.W. 1963, Hawaii
- CENCE, ROBERT J., *Associate Professor of Physics*
A.B. 1952, Ph.D. 1959, California (Berkeley)
- CHADWICK-CULLEN, CHARLENE J., *Assistant Professor of Music*
B.M. 1955, Eastman School of Music; M.M. 1961, Rochester
- CHAFFEE, MARGARET H., *Lecturer in Psychology*
B.A. 1961, Washburn (Topeka)
- CHAI, HI CHANG, *Associate Professor of Mechanical Engineering*
B.S. 1953, Texas; M.S. 1954, Ph.D. 1957, Ohio State
- CHAMBERLAIN, THÉODORE K., *Associate Professor of Oceanography*
B.S. 1952, New Mexico; M.S. 1953, Ph.D. 1960, Scripps Institution of Oceanography
- CHAN, CONWAY, *Instructor in Civil Engineering*
B.S. 1961, M.S. 1962, California (Berkeley)

- CHANDLER, DAVID B., *Assistant Professor of Sociology*
B.A. 1960, M.A. 1964, McMaster
- CHANG, CHUNG-YUAN, *Professor of Philosophy*
B.A. 1934, National Central; M.A. 1937, Michigan; PH.D. 1943, Columbia
- CHANG, GERALD K. J., *Instructor in French*
B.A. 1965, Hawaii
- CHANG, JEN-HU, *Associate Professor of Geography*
B.A. 1949, CheKiang; M.A. 1952, PH.D. 1954, Clark
- CHANG, JO MARIE, *Instructor in French*
B.A. 1959, Auburn; M.A. 1962, Rice;
DOCTEUR ES LETTRES 1965, Montpellier
- CHANG, PAULINE, *Instructor in Chinese*
B.S. 1940, National Tsing Hwa
- CHANG, SEN-DOU, *Associate Professor of Geography*
B.A. 1949, Chi-nan (Shanghai); M.A. 1955, Wisconsin; PH.D. 1961, Washington
- CHANG, THOMAS M. C., *Associate Professor of Education*
B.A. 1947, Hawaii; M.A. 1950, Columbia;
PH.D. 1957, Ohio State
- CHANTINY, JOHN G., *Professor of Human Development*
B.A. 1942, Michigan State; M.A. 1947, ED.D. 1956, Columbia
- CHAR, DONALD F. B., *Professor of Public Health*
M.D. 1950, Temple
- CHAR, WALTER F., *Professor of Psychiatry*
M.D. 1945, Temple
- CHAU, LAURENCE, *Assistant Professor of Economics*
B.A. 1959, Chung Chi College; M.S. 1964, PH.D. 1968, Wisconsin
- CHAVE, KEITH E., *Professor of Oceanography*
PH.B. 1948, M.S. 1951, PH.D. 1952, Chicago
- CHENG, CH'ENG-K'UN, *Professor of Sociology*
B.A. 1942, Yenching; M.A. 1937, PH.B. 1945, Washington
- CHENG, CHUNG-YING, *Associate Professor of Philosophy*
B.A. 1946, National Taiwan; M.A. 1958, Washington; PH.D. 1964, Harvard
- CHENG, HUI-CHEN PAI, *Instructor in Chinese*
B.A. 1943, Peking
- CHENG, RONALD Y. L., *Assistant Professor of Sociology*
B.S. 1960, London; M.A. 1963, Hong Kong
- CHENG, THOMAS C., *Associate Professor of Zoology*
B.A. 1952, Wayne State; M.S. 1956, PH.D. 1958, Virginia
- CHING, MARY L., *Assistant Professor of Food Service Administration*
B.A. 1943, Hawaii; M.A. 1945, Ohio State
- CHINN, DIAN-WEN, *Instructor in Chinese*
B.A. 1960, Taiwan Normal
- CHIU, ARTHUR N., *Professor of Engineering*
B.A., B.S. 1952, Oregon State; M.S. 1953, M.I.T.;
PH.D. 1961, Florida
- CHIU, WAN-CHENG, *Professor of Meteorology*
B.S. 1941, National Central; M.S. 1947, PH.D. 1951, New York
- CHOU, JAMES C. S., *Associate Professor of Mechanical Engineering*
B.S. 1941, National Institute of Technology (China); M.S. 1949, Georgia Institute of Technology
- CHOU, SHAO-CHIA, *Associate Pharmacologist*
B.S. 1943, West China Union; M.S. 1950, Nebraska; PH.D. 1958, Stanford
- CHRISTOFFERSON, JEANNE L., *Instructor in General Science*
B.S. 1962, Beloit; M.S. 1964, Hawaii
- CHU, GEORGE W., *Professor of Microbiology and Zoology*
B.A. 1928, Lingnan; M.S. 1931, Yenching; SC.D. 1934, Johns Hopkins
- CHUL, EDWARD F., *Associate Professor of Health and Physical Education*
B.S. 1947, M.A. 1948, PH.D. 1964, Iowa
- CHUN, DAI HO, *Professor of Education*
B.A. 1930, M.A. 1937, Hawaii; PH.D. 1947, Ohio State
- CHUN, EDWIN Y., *Associate Professor of Agriculture*
B.S. 1933, Hawaii
- CHUNG, CHIN S., *Professor of Public Health*
B.S. 1951, Oregon State; M.S. 1953, PH.D. 1957, Wisconsin
- CHUNG, N. H. PAUL, *Assistant Professor of Business Economics and Statistics*
B.A. 1952, Chungang; M.A. 1956, Ball State; PH.D. 1963, Michigan State
- CLARK, ELIZABETH, *Associate Professor of Public Health*
B.S. 1950, Northwestern; M.P.H. 1954, California (Berkeley)
- CLARK, FERN, *Instructor in Nursing*
B.S. 1957, Hawaii
- CLARK, RICHARD H., *Assistant Professor of Mathematics*
B.S. 1940, Yale; M.A. 1949, Michigan
- CLINE, JAMES M., *Professor of English*
A.B. 1920, Union College; A.M. 1925, Harvard; PH.D. 1927, Princeton
- CLUTTER, ROBERT I., *Associate Professor of Oceanography*
B.S. 1951, Washington; PH.D. 1963, California (San Diego)
- COBB, ESTEL H., *Professor of Animal Science*
B.S. 1948, Oklahoma State; M.S. 1952, PH.D. 1958, Iowa State
- CODY, WILLIAM J. T., *Lecturer in Professional Nursing*
M.D. 1951, Tufts
- COLLIER, ROY W., *Assistant Professor of English as Second Language*
B.S. 1950, Ohio State; M.A. 1958, Pacific
- COLLIER, WILLIAM L., *Assistant in Agricultural Economics*
B.A. 1962, Hawaii
- COLLINS, DWANE R., *Professor of Education*
B.A. 1930, State College (Iowa); M.S. 1938, Iowa State; ED.D. 1941, Columbia
- COLLINS, MYRTLE T., *Instructor in Education*
B.A. 1937, State College (Iowa); M.A. 1960, Colorado College
- COMITINI, SALVATORE, *Associate Professor of Economics*
B.S. 1951, M.S. 1955, Alabama; PH.D. 1960, Washington

- CONGDON, CHARLES F., *Assistant Professor of Statistics*
B.S. 1934, Pa. State Teachers College (West Chester); M.ED. 1940, Hawaii; M.B.A. 1953, Columbia
- CONNOR, ANGIE, *Professor of Public Health*
B.S. 1933, Northwestern; M.D. 1937, Pa. Women's Medical College; M.P.H. 1952, California (Berkeley)
- CONNORS, JAMES J., *Assistant Professor of History*
B.A. 1958, M.A. 1960, Hawaii; PH.D. 1967, Yale
- CONTOIS, DAVID E., *Associate Professor of Microbiology*
B.A. 1950, California (Los Angeles); M.S. 1952, Hawaii; PH.D. 1958, California
- COOIL, BRUCE J., *Professor of Plant Physiology*
B.S. 1936, Washington State; M.S. 1939, Hawaii; PH.D. 1947, California
- COOK, EDWIN A., *Assistant Professor of Anthropology*
B.A. 1959, Arizona; PH.D. 1967, Yale
- COOKSEY, VIRGINIA, *Assistant Professor of Home Economics*
R.A. 1934, Iowa State College; M.A. 1946, Columbia
- COOPER, GENE R., *Lecturer in Art*
B.A. 1963, Hawaii
- CORAGGIO, PETER A., *Instructor in Music*
B.S. 1962, M.S. 1963, Juilliard School of Music
- CORBA, NICHOLAS B., *Associate Professor of Engineering*
B.S. 1940, California State College (Pennsylvania); M.ED. 1952, Pittsburgh
- CORBIN, DONALD A., *Professor of Accounting and Business Economics*
B.S. 1942, M.B.A. 1943, PH.D. 1954, California (Berkeley); C.P.A. 1947
- COWING, CEDRIC B., *Associate Professor of History*
B.A. 1948, M.A. 1950, Stanford; PH.D. 1956, Wisconsin
- COX, DOAK C., *Professor of Geology*
B.S. 1938, Hawaii; M.A. 1941, PH.D. 1965, Harvard
- COX, J. HALLEY, *Professor of Art*
B.A. 1933, San Jose State; M.A. 1937, California
- COX, JOHN R., *Assistant Professor of Travel Industry Management*
B.A. 1961, M.A. 1966, Washington State
- CRABTREE, PHILLIP, *Acting Assistant Professor of Music*
A.B. 1959, Cornell, M.A. 1963, Iowa
- CRAWFORD, S. CROMWELL, *Assistant Professor of Religion*
B.D. 1952, Serampore; M.A.T. 1959, Indiana; TH.D. 1965, Pacific School of Religion
- CREMER, PEGGY M., *Instructor in English (Hilo)*
B.A. 1963, M.A. 1964, California State
- CROCKETT, RUTH M., *Instructor in Education*
B.A. 1960, Beloit; M.L.S. 1961, Illinois
- CROOKER, ELIZABETH P., *Instructor in Education*
B.A. 1931, Smith; M.A. 1933, Columbia
- CROSSLEY, JOHN B., *Professor of Education*
B.A. 1929, Pomona; M.A. 1940, Claremont; D.LITT. 1945, Howard; ED.D. 1950, California (Los Angeles)
- CROWELL, DAVID H., *Professor of Psychology*
B.A. 1941, Drew; PH.D. 1950, Iowa
- CROZIER, VIRGINIA, *Lecturer in Library Studies*
B.A. 1931, Pomona; B.S.L.S. 1932, Emory
- CRYMES, RUTH H., *Associate Professor of English*
B.A. 1945, M.A. 1948, Oregon; PH.D. 1965, Columbia
- CULLEY, WILLARD T., *Lecturer in Music*
- CURRIE, EDWARD M., *Assistant Professor of Accounting*
B.S.C. 1948, Iowa State; M.S. 1965, PH.D. 1967, Minnesota
- CURRIER, RUSSELL L., *Instructor in English as Second Language*
A.B. 1955, Rochester
- CURTIS, DELORES M., *Assistant Professor of Education*
B.S. 1951, Indiana State Teachers; M.S. 1957, ED.D. 1963, Illinois
- CUTTING, WINDSOR C., *Professor of Pharmacology*
B.A. 1928, M.D. 1932, Stanford
- DAEUFER, CARL J., *Assistant Professor of Education*
B.S. 1953, Pa. State Teachers (Kutztown); M.ED. 1955, Temple
- DAME, JACKLYN H., *Instructor in Speech*
A.B. 1946, California; M.A. 1948, Stanford
- DANG, CHARLOTTE, *Lecturer in Library Studies*
B.ED. PROF. CERT. 1948, Hawaii; M.S. in L.S. 1952, Western Reserve
- DANGLER, EDGAR W., *Instructor in General Science*
B.S. 1942, Maine; M.S. 1947, Minnesota; M.S. 1965, Hawaii
- DAUER, DOROTHEA W., *Associate Professor of German*
M.A. 1937, Paris; PH.D. 1953, Texas
- DAUGHERTY, KENNETH I., *Associate Professor of Geophysics*
B.S. 1957, Morehead; M.S. 1964, Ohio
- DAVENPORT, DORIS L., *Associate Professor of Public Health*
A.B. 1942, Western Maryland College; M.P.H. 1944, Michigan
- DAVIDSON, JACK R., *Professor of Agricultural Economics*
B.S. 1953, Wyoming; M.S. 1956, Montana State; PH.D. 1960, California
- DAVIS, LARY V., *Assistant Professor of Zoology*
B.S. 1959, M.S. 1960, Puget Sound; PH.D. 1965, California
- DAVIS, MARILYN, *Lecturer in French*
B.S. 1954, Utah; M.A. 1962, Oregon
- DAVIS, ORREL, *Associate Professor of Education*
B.A. 1927, M.A. 1941, Northwestern
- DAVIS, WILLIAM, *Acting Assistant Professor of Anthropology*
B.A. 1958, Fresno State
- DAWS, A. GAVAN, *Assistant Professor of History*
B.A. 1955, Melbourne; M.A. 1960, PH.D. 1966, Hawaii

- DAY, A. GROVE, *Senior Professor of English*
B.A. 1926, M.A. 1943, PH.D. 1944, Stanford
- DEANGELO, RACHAEL W., *Professor of Library Studies*
B.S. 1928, Washington College; B.S. in L.S. 1933, M.S. in L.S. 1951, Columbia
- DECRISTOFARO, ELEANOR S., *Instructor of Nursing*
B.S. 1959, Hawaii; M.S. 1966, Boston
- DE FEO, VINCENT J., *Associate Professor of Anatomy*
B.S. 1949, Juniata; M.S. 1951, Rutgers; PH.D. 1954, Ohio State
- DEFRANCIS, JOHN, *Professor of Chinese*
B.A. 1933, Yale; M.A. 1941, PH.D. 1948, Columbia
- DELLIQUADRI, P. FREDERICK, *Professor of Social Work*
B.A. 1938, Colorado; M.S.W. 1941, Nebraska
- DELUCA, DIANA D. M. M., *Instructor in English*
B.A. 1966, M.A. 1967, Hawaii
- DEMELLO, WAYNE, *Lecturer in Music*
B.A. 1957, Northwestern
- DENNIFY, REUFL N., *Professor of American Studies*
B.A. 1932, Dartmouth
- DE SILVA, GAILLAY L. R., *Lecturer in Geography*
B.A. 1950, London
- DESOWITZ, ROBERT S., *Professor of Tropical Medicine*
B.A. 1948, Buffalo; PH.D. 1951; D.S.C. 1960, London
- DIETSCH, ELIOT, *Professor of Philosophy*
B.S. 1952, Wisconsin; PH.D. 1960, Columbia
- DEVOS, WINIFRID O., *Assistant Professor of Social Work*
B.A. 1945, M.A. 1947, Chicago
- DEWEY, ALICE G., *Associate Professor of Anthropology*
B.A. 1950, M.A. 1954, PH.D. 1959, Radcliffe
- DIAMOND, A. LEONARD, *Professor of Psychology*
B.A. 1947, Cincinnati; M.A. 1949, PH.D. 1951, Columbia
- DIAMOND, MILTON, *Associate Professor of Anatomy*
B.S. 1955, City College of New York; PH.D. 1962, Kansas
- DIGMAN, JOHN M., *Professor of Psychology*
B.A. 1948, PH.D. 1951, Ohio State
- DILLARD, ROBERT L., *Assistant Professor of Speech*
B.S. 1955, Southeast Missouri State; M.A. 1958, California (Los Angeles); PH.D. 1965, Missouri
- DIWAN, ARWIN, R., *Assistant Professor of Tropical Medicine*
B.S. 1952, Bombay; PH.D. 1965, London
- DIXON, PAUL W., *Assistant Professor of Psychology (Hilo)*
B.A. 1960, Blackburn; M.A. 1963, PH.D. 1966, Hawaii
- DOBSON, PETER N., JR., *Assistant Professor of Physics*
PH.D. 1965, Maryland
- DORITY, GUY H., *Assistant Professor of Chemistry (Hilo)*
B.S.C. 1954, Oglethorpe; M.A. 1959, North Carolina; PH.D. 1965, Hawaii
- DOTTS, CECIL K., *Associate Professor of Education*
A.B. 1928, Redlands; M.ED. 1935, Hawaii; ED.D. 1949, New York
- DOTY, MAXWELL S., *Professor of Botany*
B.S. 1939, M.S. 1941, Oregon State; PH.D. 1945, Stanford
- DOUGLASS, JAMES W., *Assistant Professor of Religion*
B.A. 1960, Santa Clara; M.A. 1962, Notre Dame
- DOUYERE, SYLVIA E., *Instructor in French*
Brevets and Supérieur, 1942; M.A. 1967, Hawaii
- DRAKE, LINDA R., *Instructor in General Engineering*
B.S. 1965, M.S. 1967, Kansas
- DROBNIAC, MARIE ANN, *Instructor in English*
B.A. 1963, College Misericordia; M.A. 1965, Loyola
- DROSTE, GEORGE H., *Assistant Professor of Library Studies*
Certificate 1955, Washington; Certificate 1958, Indiana
- DROSTE, HOWARD M., *Assistant Professor of Art (Hilo)*
B.A. 1951, M.F.A. 1953, Washington
- DROSTE, YONE, *Instructor in English (Hilo)*
A.B. 1941, MacMurray; A.M. 1954, Boston
- DUCE, ROBERT A., *Assistant Professor of Chemistry*
B.A. 1957, Baylor; PH.D. 1964, M.I.T.
- DUING, WALTER, *Assistant Professor of Oceanography*
PH.D. 1964, Kiel (Germany)
- DUMONT, JEAN-LOUIS, *Assistant Professor of French*
B.A. 1960, M.A. 1963, PH.D. 1967, Connecticut
- DUNCAN-HALL, TYRA L., *Instructor in English*
B.A. 1961, M.A. 1964, Michigan
- DUNLAP, MARJORIE S., *Professor of Nursing*
A.B. 1939, Missouri; M.P.S. 1948, Colorado; ED.D. 1959, Southern California
- DUNN-RANKIN, PETER, *Assistant Professor of Education*
B.S. 1953, M.S. 1954, Florida State; M.A. 1965, Louisiana State; ED.D. 1965, Florida
- DUNWORTH, JOHN, *Lecturer in Education*
B.A. 1949, M.A. 1952, California (Berkeley); ED.D. 1959, Southern California
- DURANT, MARY B. J., *Instructor in English*
B.A. 1962, M.A. 1966, Hawaii
- DYE, HARRIET T., *Instructor in English*
B.A. 1962, Kalamazoo College, M.A. 1966, Western Michigan
- DYER, ARMEL, *Assistant Professor of Speech*
B.S. 1933, M.A. 1938, Missouri; PH.D. 1968, Oregon
- DYKSTRA, GERALD, *Professor of Speech*
B.A. 1948, M.A. 1948, PH.D. 1955, Michigan

- ERICKSON, ROBERT J., *Acting Assistant Professor of Geography and Public Health*
B.A. 1963, M.A. 1965, Arizona State
- EBERT, THOMAS A., *Assistant Professor of Zoology*
B.S. 1961, Wisconsin; M.S. 1963, PH.D. 1966, Oregon
- ECKLOR, ERIC H., *Instructor in English*
A.B. 1955, M.A. 1965, San Francisco State
- EDEL, LEON, *Citizens' Chair in English Literature* (Spring 1969)
B.A. 1939, M.A. 1946, Cambridge
- EDWARDS, CAROL A., *Instructor in Mathematics (Hilo)*
B.A. 1960, California (Berkeley); M.A. 1962, Illinois
- EKERN, PAUL C., JR., *Associate Professor of Agronomy and Soil Science*
B.A. 1942, Westminster College; PH.D. 1950, Wisconsin
- EKROTH, LAUREN E., *Assistant Professor of Speech*
B.S. 1956, M.A. 1958, PH.D. 1967, Minnesota
- EBERT, SAMUEL H., *Professor of Pacific Languages and Linguistics*
B.A. 1928, Grinnell; B.LIT. 1931, Columbia; PH.D. 1950, Indiana
- ELLINGSWORTH, HUBER W., *Professor of Speech*
B.A. 1949, Pacific (Oregon); M.A. 1950, Washington State; PH.D. 1955, Florida State
- ELLIOTT, DONALD F., *Assistant Professor of Spanish*
B.A. 1931, Monmouth; M.A. 1936, Florida
- ELLIOTT, GORDON J., *Instructor in English as a Second Language*
B.A. 1951, Washington
- ELLIS, DEAN S., *Assistant Professor of Speech*
B.S. 1960, M.S. 1963, Utah; PH.D. 1965, Purdue
- ERNEST, WELDEN A., *Assistant Professor of History*
B.A. 1953, Buffalo; M.A. 1954, PH.D. 1967, Harvard
- ERNST, EARLE, *Senior Professor of Drama and Theatre*
B.A. 1933, Gettysburg; M.A. 1938, PH.D. 1940, Cornell
- ESTOQUE, MARIANO A., *Professor of Meteorology*
B.S. 1947, Philippines; M.S. 1948, PH.D. 1950, New York
- ETHERINGTON, A. BRUCE, *Professor of Architecture*
B.ARCH. 1947, Cornell
- EUCHER, MARK, *Acting Assistant Professor of French*
B.A. 1955, M.A. 1961, California (Berkeley)
- EVANS, FRANKLIN B., *Professor of Marketing*
A.A. 1941, B.A. 1943, M.B.A. 1954, PH.D. 1959, Chicago
- EVANS, JOHN R., *Professor of Engineering*
B.S. 1941, M.S. 1947, Michigan State
- EVERLY, HUBERT V., *Professor of Education*
B.ED. 1934, M.ED. 1938, Hawaii; PH.D. 1946, Ohio State
- EYDE, DAVID B., *Assistant Professor of Anthropology*
B.A. 1954, Hawaii; PH.D. 1966, Yale
- FAN, POW-FOONG, *Assistant Professor of Geosciences*
B.S. 1955, Wheaton College; M.A. 1963, PH.D. 1965, California
- FANCHER, JOANNA E., *Assistant Professor of Nursing*
B.A. 1950, Houghton; M.N. 1953, Western Reserve; M.A. 1963, Columbia
- FAND, RICHARD M., *Professor of Mechanical Engineering*
B.S. 1946, Rensselaer Polytechnic Institute; M.S. 1949, Columbia; PH.D. 1959, Cornell
- FANG, GAUTIER T., *Assistant Professor of Electrical Engineering*
B.S. 1955, National Taiwan University; M.S. 1962, PH.D. 1966, Minnesota
- FAUBION, SANDRA, *Instructor of Dental Hygiene*
B.S. 1966, M.P.H. 1967, California (Los Angeles)
- FELDMAN, REYNOLD M., *Assistant Professor of English*
B.A. 1960, M.A. 1962, PH.D. 1966, Yale
- FELLMETH, JANE B., *Instructor in English*
B.A. 1939, B.A. 1941, Akron; M.A. 1943, Ohio State
- FERGUSON, ELIZABETH, *Lecturer in Library Studies*
A.B. 1927, Oberlin; B.S. in L.S. 1930, Western Reserve
- FERGUSON, JOHN B., *Professor of Management and Industrial Relations*
B.A. 1933, M.B.A. 1935, Stanford; PH.D. 1960, Cornell
- FERGUSON, MAVIS B., *Instructor in Speech*
B.A. 1966, M.A. 1967, Hawaii
- FERGUSON, RONALD T., *Assistant Professor of History*
B.A. 1954, New York; M.A. 1961, Pennsylvania
- FIRTH, RAYMOND, *Pacific Islands Chair in Anthropology*
M.A. 1924, Auckland University College; PH.D. 1927, London School of Economics
- FISHER, RAYMOND, *Professor of Social Work*
A.B. 1934, M.S.C. 1939, Western Reserve
- FITZGERALD, PHYLLIS A., *Instructor of Nursing*
B.S. 1962, St. Louis; M.A. 1967, New York
- FITZSIMMONS, LORRAINE F., *Assistant Professor of Education*
B.A. 1929, M.A. 1931, Colorado State College of Education
- FLETCHER, SALLY, *Lecturer in Art*
B.A. 1955, California (Los Angeles)
- FLYNN, ELIZABETH A., *Acting Assistant Professor of English*
B.A. 1959, Mt. St. Vincent; M.A. 1960, Wisconsin
- FOCHTMAN, JACQUELIN, *Instructor in French*
B.A. 1965, M.A. 1967, Hawaii
- FOLSOME, CLAIR E., *Professor of Microbiology*
B.A. 1936, M.A. 1959, PH.D. 1960, Harvard
- FONG, DAVID, *Assistant Professor of English*
A.B. 1960, PH.D. 1967, Stanford; M.A. 1962, Columbia
- FOSTER, EDWARD L., *Instructor in Military Science*
- FOX, JOEL S., *Assistant Professor of Mechanical Engineering*
B.S. 1949, M.S. 1961, PH.D. 1966, Polytechnic Institute of Brooklyn

- FOX, MORRIS G., *Lecturer in Social Work*
A.B. 1934, Redlands; M.A. 1940, Chicago
- FOX, ROBERT L., *Professor of Soil Science*
B.S. 1948, M.A. 1950, PH.D. 1954, Missouri
- FRANK, HILMER A., *Associate Professor of Food Science*
B.A. 1949, Minnesota; M.S. 1952, PH.D. 1954, Washington State
- FRANKENSTEIN, JOHN, *Instructor in English as Second Language*
B.A. 1961, Stanford; M.A. 1967, San Francisco State College
- FREEDGOOD, LAURA A., *Instructor in English*
B.A. 1965, Vassar; M.A. 1967, Indiana
- FREIMARK, JOHN, *Instructor in English*
B.A. 1965, Wyoming; M.A. 1967, Claremont
- FREITAS, LEWIS P., *Assistant Professor of Finance*
A.B. 1947, Harvard; M.B.A. 1959, PH.D. 1965, Columbia
- FRIEDMAN, HARRY J., *Professor of Political Science*
B.LIT. 1948, Rutgers; M.S. 1949, Wisconsin; PH.D. 1956, Pittsburgh
- FRIEDMAN, THEODORE L., *Instructor in English*
B.S. 1961, Illinois; M.A. 1967, San Francisco State College
- FRIEDSON, ANTHONY M., *Assistant Professor of English*
A.B. 1951, Simpson College; M.A. 1954, PH.D. Iowa State
- FRIEND, DOUGLAS J. C., *Associate Professor of Botany*
B.S.C. 1950, PH.D. 1953, London
- FRIERSON, JAMES W., *Associate Professor of English*
B.A. 1929, LL.B. 1933, Tulane; PH.D. 1953, Stanford
- FROELICH, GERHARD, *Assistant Professor of German*
B.A. 1961, M.A. 1962, PH.D. 1966, Iowa
- FRYER, DONALD W., *Professor of Geography and Asian Studies*
B.S.C. 1941, M.Sc. 1942, London School of Economics; PH.D. 1958, London
- FUCHS, ROLAND J., *Associate Professor of Geography*
B.A. 1954, Columbia; M.A. 1957, PH.D. 1959, Clark
- FUJIKAWA, ASAKO, *Instructor in Japanese*
B.A. 1932, Hawaii; M.A. 1956, Columbia; M.A. 1960, Ryukoku
- FUJIMOTO, AKIRA, *Lecturer in Civil Engineering (Hilo)*
B.S. 1950, Hawaii
- FUJIMURA, THOMAS H., *Professor of English*
B.A. 1942, California; M.A. 1943, Nebraska; PH.D. 1950, Columbia
- FUJIOKA, NORITO, *Assistant Professor of Japanese*
B.A. 1948, M.A. 1952, Hawaii
- FUJITA, SHIRLEY Y., *Assistant Professor of Education*
B.F.D. 1943, Hawaii; M.A. 1956, New York
- FUKUDA, MITSUNO, *Junior Researcher in Microbiology*
B.A. 1933, Hawaii
- FULLER, STEPHEN RAY, *Instructor in Music (Hilo)*
B.A. 1965, St. Olaf; M.M. 1967, Southern California
- FULLMER, DANIEL W., *Professor of Education*
B.S.E. 1947, M.S.E. 1952, Western Illinois; PH.D. 1955, Denver
- FULTZ, JANE N., *Associate Professor of Education*
B.E.D. 1938, Hawaii; M.A. 1959, Ohio State; ED.D. 1966, New York
- FURER, GLORIA S., *Assistant Professor of Fashion Design and Merchandising*
B.S. 1945, Michigan State; M.E.D. 1964, Hawaii
- FURNISS, W. TODD, *Professor of English*
B.A. 1942, M.A. 1948, PH.D. 1952, Yale
- FURUKAWA, FRED M., *Instructor in Health and Physical Education*
B.S. 1955, M.F.D. 1964, Hawaii
- FURUMOTO, AUGUSTINE K., *Assistant Professor of Geology*
B.S. 1949, Dayton; M.S. 1955, Tokyo; PH.D. 1961, St. Louis
- FURUMOTO, HOWARD H., *Associate Professor of Animal Sciences*
B.S. 1942, M.S. 1948, D.V.M. 1950, Kansas; PH.D. 1966, Illinois
- FURUNO, SETSU, *Associate Professor of Public Health*
B.E.D. 1941, Hawaii; M.S.P.H. 1949, Columbia; PH.D. 1960, New York
- FURUSAWA, EIICHI, *Associate Professor of Pharmacology*
M.D. 1954, D.MED.SC. 1959, Osaka
- GABERSON, HOWARD A., *Associate Professor of Mechanical Engineering*
B.S. 1955, Michigan; M.S. 1957, PH.D. 1967, M.I.T.
- GALLAGHER, BRENT S., *Assistant Professor of Oceanography*
B.S. 1962, California (Los Angeles); PH.D. 1965, California (San Diego)
- GASIOROWSKI, ZYGMUNT, *Associate Professor of History*
B.S.C. 1945, London; M.A. 1947, PH.D. 1950, Berkeley
- GAUGGEL, GEORGE W., *Lecturer in Music*
A.B. 1933, Howard; B.MUS. 1938, M.MUS. 1941, Birmingham Conservatory
- GAULT, NEAL L., JR., *Professor of Medicine*
B.A. 1950, Texas; M.B. 1950, M.D. 1951, Minnesota
- GAULT, SARAH J., *Associate Professor of Psychiatry (Okinawa)*
B.A. 1942, Texas; M.B. 1951, M.D. 1951, Minnesota
- GAY, RUTH A., *Instructor in Botany*
B.F. 1955, Colorado State; M.S. 1967, Hawaii
- GETHING, THOMAS W., *Assistant Professor of Thai*
B.A. 1961, M.A. 1963, PH.D. 1966, Michigan
- GIBRONS, IAN R., *Associate Professor of Cytology*
B.A. 1954, PH.D. 1957, Cambridge
- GILBERT, HELEN, *Lecturer in Art*
B.A. 1943, Mills
- GILBERT, JAMES C., *Professor of Horticulture*
B.A. 1931, Pomona; M.A. 1933, Southern California; M.S. 1952, PH.D. 1959, Hawaii

- GILJE, JOHN W., *Assistant Professor of Chemistry*
B.CHEM. 1961, Minnesota; PH.D. 1965, Michigan
- GILL, SARAH, *Acting Assistant Professor of Art*
B.A. 1959, Smith; M.A. 1964, Columbia
- GILLESPIE, MARGARET C., *Associate Professor of Education*
B.ED. 1952, M.ED. 1957, Hawaii; ED.D. 1966, Stanford
- GILLETT, DOROTHY K., *Instructor in Music*
B.S. 1940, Ohio State
- GILMARTIN, MALVERN, JR., *Associate Professor of Oceanography*
A.A. 1950, Chaffey; B.A. 1954, Pomona; M.A. 1956, Hawaii; PH.D. 1960, British Columbia
- GILSON, THOMAS O., *Professor of Management*
B.A. 1938, Princeton; M.A. 1942, Columbia; PH.D. 1954, M.I.T.
- GINGLES, JOHN ROY, *Instructor in English*
B.A. 1965, M.A. 1966, Wyoming
- GLICK, CLARENCE E., *Professor of Sociology*
B.A. 1927, De Pauw; M.A. 1928, PH.D. 1938, Chicago
- GLICK, DORIS L., *Instructor in English*
B.A. 1929, M.A. 1930, PH.D. 1932, Iowa State
- GLICKMAN, DAVID, *Lecturer in Professional Nursing*
B.A. 1949, Wisconsin; LL.B. 1952, California (Hastings)
- GLISSMEYER, GLORIA, *Assistant Professor of English*
B.A. 1952, M.A. 1953, Utah
- GO, MATEO L. P., *Professor of Engineering*
B.C.E. 1942, PH.D. 1946, Cornell; S.M.C.E. 1943, M.I.T.
- GOLDSTEIN, MARSHALL N., *Associate Professor of Political Science*
B.A. 1955, Florida; PH.D. 1964, North Carolina
- GOO, EDWARD S. H., *Instructor in Mathematics*
B.ED. 1965, M.A. 1967, Hawaii
- GOO, GENEDINA B., *Instructor of Nursing*
B.S. 1953, St. Mary College; M.S. 1968, Hawaii
- GORDON, SARA, *Acting Assistant Professor of Economics*
B.A. 1957, California; M.A. 1962, Stanford
- GORTER, WYTZE, *Professor of Economics*
A.A. 1933, Marin Jr. College; A.B. 1936, PH.D. 1948, Stanford
- GOSLINE, WILLIAM A., *Professor of Zoology*
B.S. 1938 Harvard; PH.D. 1941, Stanford
- GOTANDA, YUKIO, *Lecturer in Social Work*
B.A. 1950, Hawaii; M.S.W. 1952, Michigan; J.D. 1956, Wisconsin
- GOTO, GFORGE, *Lecturer in Public Health*
M.D. 1951, Washington
- GOTO, SHOSUKE, *Associate Professor of Plant Pathology*
B.S. 1941, M.S. 1943, Alberta; PH.D. 1953, Minnesota
- GOYA, RAMON AKIRA, *Instructor in Health and Physical Education (Hilo)*
B.A. 1963, Hawaii; M.A. 1965, San Jose State
- GRACE, GEORGE W., *Professor of Linguistics*
LIC. 1948, Geneva; PH.D. 1958, Columbia
- GRACE, ROBERT A., *Assistant Professor of Civil Engineering*
B.E.S.C. 1960, Western Ontario; S.M. 1962, PH.D. 1966, M.I.T.
- GRANBORG, BERTIL S. M., *Associate Professor of Electrical Engineering*
CIVING. E.E. 1953, R. Inst. of Techn. (Stockholm); PH.D. 1961, Wisconsin
- GRAY, FREDERIC, *Instructor in French*
B.A. 1941, M.A. 1964, Hawaii
- GRAY, JAMES M., *Assistant Professor of English*
B.A. 1959, Carleton; M.A. 1961, PH.D. 1966, Southern California
- GRAYSON, HENRY W., *Professor of Business Economics*
B.A. 1937, Saskatchewan; M.A. 1947, PH.D. 1950, Toronto
- GREEN, RICHARD E., *Assistant Agronomist*
B.S. 1953, Colorado State; M.S. 1957, Nebraska; PH.D. 1962, Iowa State
- GREEN, ROGER, *Associate Professor of Anthropology*
B.A. 1954, B.S.C. 1955, New Mexico; PH.D. 1964, Harvard
- GREENBERG, MARVIN, *Associate Professor of Education*
B.S. 1957, New York; M.A. 1958, ED.D. 1962, Columbia
- GREENWOOD, FREDERICK C., *Professor of Biochemistry*
B.S. 1950, King's College (London); M.S. 1951, PH.D. 1953, Univ. College of London
- GREGORY, CHRISTOPHER, *Professor of Mathematics*
B.S. 1958, M.S. 1959, PH.D. 1941, California Institute of Technology
- GRIFFIN, AUGUSTUS H., *Assistant Professor of English*
B.A. 1929, Columbia; B.TH. 1934, Princeton; M.A. 1959, Hawaii
- GRIFFITT, WILLIAM B., *Assistant Professor of Psychology*
B.A. 1964, Kansas State; PH.D. 1967, Texas
- GRISWOLD, ROBERT G., *Assistant Professor of Mathematics*
B.S. 1960, M.S. 1963, PH.D. 1964, Rensselaer Polytechnic Institute
- GRONEMAN, CHRIS H., *Professor of Education*
B.S. 1931, M.S. 1935, Kansas State College; ED.D. 1950, Pennsylvania State
- GROSS, YUKIE T., *Associate Professor of Nursing*
B.A. 1947, Wells College; M.N. 1950, M.S. (M.H.N.) 1954, Yale
- GROSSMAN, JEROME, *Professor of Public Health*
B.A. 1945, California (Berkeley); M.P.H. 1946, PH.D. 1954, California (Berkeley)
- GROTH, ERIC E., *Associate Professor of Mathematics*
PH.D. 1936, Leipzig
- GROTH, HILDE, *Associate Professor of Psychology*
ABITUR (AA equiv.) 1941, Oberrealschule, Germany; A.B. 1953, PH.D. 1957, California (Los Angeles)
- GROVES, GORDON W., *Professor of Oceanography*
A.B. 1949, California (Los Angeles); M.S. 1951, PH.D. 1955, California (La Jolla)
- GUENTHERODT, INGRID, *Assistant Professor of German*
DIPLOMÜBERSETZER 1959, Mainz; PH.D. 1963, Texas
- GUNDERSEN, KAARE R., *Associate Professor of Microbiology*
PH.D. 1962, Gothenburg (Sweden)

- GUNN, JAMES D., *Instructor in Spanish*
B.A. 1964, Kalamazoo; M.A. 1966, Americas
(Mexico)
- GURIAN, JAY P., *Assistant Professor of American
Studies*
B.A. 1951, Syracuse; M.A. 1957, Hawaii;
PH.D. 1962, Minnesota
- GUSTUSON, DONALD I., *Associate Professor of
Health and Physical Education*
B.A. 1934, Whittier; M.Ed. 1950, Hawaii; ED.D.
1954, California (Los Angeles)
- HAAS, MICHAEL, *Associate Professor of Political
Science*
B.A. 1959, PH.D. 1964, Stanford; M.A. 1960, Yale
- HAAS, VALERIE S., *Instructor in Classics*
B.A. 1944, Hunter
- HABER, MERYL H., *Associate Professor of
Pathology*
B.S. 1956, M.S. 1958, M.D. 1959, Northwestern
- HACKLER, WINDSOR G., *Associate Director of
Overseas Cancer Program*
B.A. 1937, M.A. 1938, Northwestern
- HADLEY, GEORGE F., *Professor of Mathematics*
B.S. 1952, Carnegie Institute; A.M. 1954, PH.D.
1955, Harvard; M.S. 1958, M.I.T.
- HADLICH, ROGER L., *Associate Professor of Spanish*
B.A. 1951, Yale; M.A. 1957, Middlebury;
PH.D. 1961, Michigan
- HAHNEN, FRIDERICK P., JR., *Associate Professor
of Education*
B.A. 1949, Gettysburg; M.Ed. 1955, Western
Maryland; PH.D. 1965, Colorado State College
- HALE, HELENE H., *Lecturer in English (Hilo)*
B.S. 1938, M.A. 1940, Minnesota
- HALEY, SAMUEL R., *Assistant Professor of Zoology*
B.A. 1962, M.A. 1964, PH.D. 1967, Texas
- HALEY, THOMAS J., *Professor of Pharmacology*
B.S. 1938, M.S. 1942, Southern California;
PH.D. 1945, Florida
- HALL, JOHN B., *Assistant Professor of
Microbiology*
A.B. 1957, Kansas; PH.D. 1960, California
- HALMOS, PAUL R., *Professor of Mathematics*
B.S. 1931, M.S. 1935, PH.D. 1938, Illinois
- HALSTEAD, SCOTT B., *Professor of Tropical
Medicine*
B.A. 1951, Yale; M.D. 1955, Columbia
- HAMADA, HAROLD S., *Associate Professor of
Civil Engineering*
B.S. 1957, Hawaii; M.S. 1958, PH.D. 1962,
Illinois
- HAMAI, HERBERT T., *Instructor in Health and
Physical Education (Hilo)*
B.Ed. 1957, Hawaii; M.S. 1959, Illinois
- HAMAKER, GENE, *Associate Professor of American
Studies*
B.A. 1951, California (Berkeley); PH.D. 1958,
Nebraska
- HAMILTON, RICHARD A., *Professor of Horticulture*
B.S. 1937, N. Dakota Agricultural; M.S. 1940,
Ohio State; PH.D. 1953, Minnesota
- HAMILTON, THOMAS H., *Senior Professor of
Political Science*
B.A. 1936, LL.D. 1961, De Pauw; M.A. 1940, PH.D.
1947, Chicago; L.H.D. 1960, Alfred University;
LL.D. 1961, Rollins College; LL.D. 1961, Colgate;
D.H. 1967, Oakland University (Rochester,
Mich.); LL.D. 1967, Southern California
- HAMMOND, DALE A., *Instructor in Chemistry*
B.A. 1958, Brigham Young
- HAMPTON, IAN F. G., *Assistant Professor of
Physiology*
B.Sc. 1958; PH.D. 1967, London
- HARAMOTO, FRANK H., *Assistant Professor of
Entomology*
B.S. 1949, M.S. 1953, PH.D. 1964, Hawaii
- HARDY, D. ELMO, *Senior Professor of Entomology*
B.A. 1937, Brigham Young; PH.D. 1941, Kansas
- HARLING, JEAN, *Lecturer in Music*
B.S. 1944, Wayne
- HARMS, JOAN Y., *Instructor in Speech*
B.Ed. 1963, Hawaii; M.A. 1964, Northwestern
- HARMS, L. STANLEY, *Associate Professor of Speech*
B.A. 1955, Florida; M.A. 1957, PH.D. 1959,
Ohio State
- HARRENSTEIN, HOWARD P., *Professor of Civil
Engineering*
B.S. 1953, Kansas State; M.S. 1956, PH.D. 1959,
Iowa State
- HARRIS, IRA W., *Associate Professor of Library
Studies*
B.L.D. 1952, Pratt; M.L.S. 1957, PH.D. 1967,
Rutgers
- HARRISON, ROBERT, *Acting Assistant Professor of
Anthropology*
B.A. 1958, Hofstra College
- HARTEL, LT. COL. HAROLD W., *Professor of
Aerospace Studies*
M.S. 1961, Texas A & M
- HARTMAN, NELLIE M., *Assistant Professor of
Social Work*
B.A. 1931, M.A. 1933, Washington; M.A. 1949,
Chicago
- HARTMANN, RICHARD W., *Assistant Professor of
Horticulture*
B.A. 1956, Rutgers; M.S. 1957, Virginia Poly.
Inst.; PH.D. 1962, California (Los Angeles)
- HASIGAWA, NOBUKO, *Instructor in Japanese*
B.A. 1956, Rikkyo
- HASELWOOD, ROBERT W., *Associate Professor of
Engineering*
B.A. 1934, Stanford; M.S. 1936, Harvard
- HAVAAS, MARION, *Assistant Professor of Art*
B.S. 1945, M.S. 1952, Wisconsin; M.F.A. 1959,
Cranbrook Academy of Art
- HAYAKAWA, JOHN M., *Assistant Professor of
Public Health*
B.S. 1951, California; M.P.H. 1954, California
- HAYES, CHARLES F., *Assistant Professor of Physics*
A.B. 1963, Wheaton College; M.S. 1965,
PH.D. 1967, W. Virginia
- HAYES, ELOISE D., *Associate Professor of
Education*
B.Ed. 1939, Minn. State Teachers College (St.
Cloud); M.A. 1951, PH.D. 1953, North Carolina
- HAZAMA, DOROTHY O., *Assistant Professor of
Education*
B.Ed. 1952, Hawaii; M.A. 1955, New York

- HEINBERG, PAUL J., *Associate Professor of Speech*
B.S. 1949, M.A. 1950, Columbia; PH.D. 1956,
Iowa State
- HEINE, ELIZABETH M., *Assistant Professor of*
English
A.B. 1960, Cornell; A.M. 1961, Radcliffe;
PH.D. 1965, Harvard
- HENKE, BURTON L., *Professor of Physics*
A.B. 1944, Miami (Ohio); M.S. 1946, PH.D.
1953, California Institute of Technology
- HERAND, FRANK A., *Assistant Professor of Music*
PH.D. 1956, Zurich
- HERMAN, LOUIS M., *Associate Professor of*
Psychology
B.S.S. 1951, M.A. 1952, City College of N.Y.;
PH.D. 1961, Pennsylvania State
- HERRICK, ORPHA E., *Assistant Professor of*
Fashion Design and Merchandising
B.S. 1949, Northwestern State; M.S. 1954,
Wisconsin
- HERRICK, RAYMOND B., *Associate Professor of*
Poultry Science
B.S. 1950, Northwestern State; M.S. 1955,
PH.D. 1960, Wisconsin
- HERSHINOW, SHELDON J., *Instructor in English*
B.A. 1964, Oberlin; M.A. 1965, Chicago
- HERVEY, WESLEY D., *Assistant Professor of Speech*
B.A. 1949, California; M.A. 1951, Hawaii
- HERZBERG, MENDEL, *Professor of Microbiology*
B.S. 1948, M.A. 1950, PH.D. 1953, California
- HEYF, CHARLES FRANK, *Assistant Professor of*
Management
B.B.A. 1943, Texas; M.B.A. 1947, Maryland
- HIATT, ROBERT W., *Senior Professor of Zoology*
B.A. 1936, San Jose State; PH.D. 1941, California
- HICKS, ROBERT Z., *Instructor in Speech (Hilo)*
B.S. 1959, Michigan State; M.A. 1962, Michigan
- HIGA, HAROLD T., *Assistant Professor of Education*
B.M. 1949, M.M. 1950, Cincinnati
- HILKER, DORIS M., *Assistant Professor of Foods*
and Nutrition
B.S. 1949, Chicago; M.S. 1955, Loyola; PH.D.
1958, Tulane
- HIRAZUMI, YUICHIRO, *Associate Professor of*
Genetics
M.S. 1952, Hokkaido; DR.SC. 1960, Osaka
- HIRATA, LUCIE, *Instructor in Chinese*
B.A. 1962, Hawaii; M.A. 1964, Chicago
- HIRSCHY, IRA D., *Lecturer in Nursing*
B.S. 1927, Jamestown; M.A. 1929, M.D. 1933,
M.P.H. 1942, Michigan
- HOES, LINDA, *Lecturer in Music*
B.A. 1959, California (Los Angeles)
- HOFFER, BATES L., *Acting Assistant Professor of*
Japanese
B.A. 1962, Texas
- HOGAN, PATRICIA ANN, *Instructor in English*
B.A. 1964, M.A. 1966, New Mexico
- HOHL, HANS R., *Associate Professor of*
Microbiology
Diploma 1957, PH.D. 1960, Zurich
- HOKAMA, YOSHITSUGI, *Associate Professor of*
Pathology
A.B. 1951, M.A. 1953, PH.D. 1957, California
(Los Angeles)
- HOLLINGSHEAD, VIRGINIA, *Assistant Professor of*
English
B.S. 1949, Pittsburgh; M.A. 1951, Hawaii;
PH.D. 1960, Washington
- HOLMES, JOHN R., *Professor of Physics*
A.B. 1938, M.A. 1941, PH.D. 1942, California
(Berkeley)
- HOLTON, JAMES S., *Associate Professor of Spanish*
B.A. 1948, San Diego State; M.A. 1951, PH.D.
1956, California (Berkeley)
- HOLTZMANN, OLIVER V., *Associate Professor of*
Plant Pathology
B.S. 1950, M.S. 1952, Colorado State; PH.D.
1955, Washington State
- HONG, PILL-WHOON, *Associate Professor of*
Surgery (Okinawa)
M.D. 1942, Severance Union, Seoul, Korea
- HONG, SUK KI, *Professor of Physiology*
M.D. 1949, Yonsei; PH.D. 1956, Rochester
- HOOPER, PAUL F., *Instructor in History*
B.A. 1961, Eastern Washington; M.A. 1965,
Hawaii
- HOOVER, HELEN M., *Assistant Professor of*
Social Work
B.S. 1926, North Dakota; M.A. 1948, Chicago
- HOPKINS, MARY E., *Associate Professor of*
Personnel and Industrial Relations
B.A. 1940, M.A. 1958, Pittsburgh; PH.D. 1963,
Western Reserve
- HORAN, CLAUDE F., *Professor of Art*
B.A. 1942, San Jose State; M.A. 1946,
Ohio State
- HOREAU, MARTINE F., *Instructor in French*
Baccalaureats 1960, Institute Ste. Marie;
Licence 1967, Sorbonne
- HORMANN, BERNHARD L., *Professor of Sociology*
B.A. 1927, M.A. 1931, Hawaii; PH.D. 1949,
Chicago
- HORTON, SHELLEY L., *Instructor of Nursing*
B.S. 1960, Oregon; M.S. 1965, California
(San Francisco)
- HOSHOR, JOHN P., *Professor of Speech*
B.A. 1938, M.A. 1940, Washington;
PH.D. 1947, Iowa
- HOTCHKIN, GARY, *Assistant Professor of*
Food Service Administration
B.S. 1962, M.B.A. 1964, Michigan
- HSIAO, SIDNEY C., *Professor of Zoology*
B.A. 1928, Shanghai; M.A. 1933,
Yenching; PH.D. 1938, Harvard
- HTUN, KWAW MOE, *Assistant Professor of*
Mechanical Engineering
B.S. 1957, Lehigh; M.S. 1958, PH.D. 1965,
Wisconsin
- HUGH, WILLIAMS I., *Associate Professor of*
Animal Science
B.S.A. 1949, British Columbia; M.S. 1951,
PH.D. 1955, Minnesota
- HUHM, HALLA, *Lecturer in Music*
B.S. 1942, Jitsen Women's College
- HULL, VALERIE, *Instructor in Russian*
B.A. 1967, M.A. 1968, State Univ. of New York
- HUMMEL, PAUL L., *Assistant Professor of*
Civil Engineering
B.S. 1957, Hawaii; M.S. 1960, Nebraska

- HUNG, FRED C.**, *Associate Professor of Economics*
B.A. 1947, St. John's (China); PH.D. 1955,
Washington
- HUNT, JAMES**, *Lecturer in Library Studies*
PH.B. 1951, M.A. 1955, Detroit; M.A.L.S. 1959,
Michigan
- HUNT, JOHN A.**, *Associate Professor of Genetics*
B.A. 1956, PH.D. 1960, Cambridge
- HUNTER, CHARLES H.**, *Professor of History*
B.A. 1927, M.A. 1928, PH.D. 1935, Stanford
- HUNTSBERRY, WILLIAM E.**, *Associate Professor of English*
B.A. 1942, Michigan State Normal; M.A. 1949,
Hawaii
- HURWITZ, SAMUEL J.**, *Professor of History*
B.A. 1934, Brooklyn; M.A. 1940, PH.D. 1946,
Columbia
- HWANG, HU HSIFEN**, *Associate Professor of Electrical Engineering*
B.S.C. 1949, National Chiao-Tung University;
M.S.C. 1956, PH.D. 1959, Lehigh
- HWANG, SUK R.**, *Instructor in Mathematics and Physics (Hilo)*
B.S. 1956, Central Missouri State; M.S. 1961,
Arizona State
- HYLIN, JOHN W.**, *Associate Professor of Agricultural Biochemistry*
B.A. 1950, Marietta; M.S. 1953, Purdue;
PH.D. 1957, Columbia
- IGI, THOMAS H.**, *Professor of Business Economics and Statistics*
B.A. 1940, Hawaii; M.A. 1942, PH.D. 1950,
Wisconsin
- IHARA, TERUO**, *Associate Professor of Education*
B.S. 1940, Hawaii; M.A. 1949, PH.D. 1959,
Ohio State
- IHRIG, JUDSON L.**, *Associate Professor of Chemistry*
B.S. 1949, Haverford; M.A. 1951, PH.D. 1952,
Princeton
- IKEDA, HIROKO**, *Associate Professor of Japanese and Anthropology*
B.A. 1936, Tokyo Joshi Daigaku; PH.D. 1956,
Indiana
- IKEDA, YASUHIKO**, *Instructor in Mathematics*
B.A. 1965, M.A. 1967, Hawaii
- IN, ANDREW W. S.**, *Professor of Education*
B.ED. 1941, Hawaii; M.A. 1949, PH.D. 1951,
New York
- INADA, KENNETH K.**, *Associate Professor of Philosophy*
B.A. 1949, Hawaii; M.A. 1951, Chicago;
PH.D. 1960, Tokyo
- INGILS, CHESTER R.**, *Associate Professor of Education*
B.A. 1947, Pomona; M.A. 1956, Claremont;
ED.D. 1958, Stanford
- INN, AGNES M. S.**, *Associate Professor of Elementary Education*
B.ED. 1940, Hawaii; M.A. 1952, New York;
ED.D. 1966, California (Berkeley)
- INSKEEP, RICHARD G.**, *Professor of Chemistry*
B.A. 1944, Miami; M.S. 1947, PH.D. 1949,
Illinois
- INSKO, CHESTER A.**, *Assistant Professor of Psychology*
A.B. 1957, PH.D. 1963, California; M.A. 1958,
Boston
- ISHIDA, JACK T.**, *Associate Professor of Agricultural Economics*
B.A. 1942, M.A. 1947, Hawaii; PH.D. 1960,
Purdue
- ISHII, MAMORU**, *Associate Professor of Plant Pathology*
B.S. 1947, Hawaii; PH.D. 1953, California
- ISHIMOTO, WINIFRED H.**, *Assistant Professor of Social Work*
B.A. 1950, M.S.W. 1952, Hawaii
- IVEY, ZANE**, *Assistant Professor of Nursing*
B.S. 1958, M.S. 1960, California (Los Angeles)
- IWANAGA, ISAAC I.**, *Assistant Professor of Animal Sciences*
B.S. 1928, Hawaii
- IWATA, RUTH Y.**, *Instructor of Nursing*
B.S. 1959, Hawaii; M.S. 1962, St. John's
- IYENGAR, P. K. M.**, *Assistant Professor of Management*
B.E. 1957, University College of Engineering (India); M.B.A. 1964, Hawaii; PH.D. 1968,
Columbia
- JACKSON, ERNEST A.**, *Associate Professor of European Languages*
B.A. 1948, Boston; M.A. 1951, Yale;
PH.D. 1962, Michigan
- JACKSON, ERNEST H.**, *Associate Professor of Education*
B.A. 1948, M.A. 1952, Pacific; ED.D. 1962,
Southern California
- JACKSON, LOWELL D.**, *Professor of Education*
B.A. 1948, M.S. 1949, ED.D. 1957, Southern
California
- JACKSON, MABEL**, *Lecturer in Library Studies*
B.S. in L.S. 1931, Washington; M.A.L.S. 1937,
California (Berkeley)
- JACOBS, LAURENCE W.**, *Assistant Professor of Marketing*
B.S. 1961, Pennsylvania; M.B.A. 1963,
PH.D. 1966, Ohio State
- JACOBSEN, LYLE E.**, *Professor of Accounting*
B.S.C. 1951, Dana College; M.A. 1955, Nebraska;
PH.D. 1958, Illinois; C.P.A. 1955
- JAMBOR, HAROLD A.**, *Professor of Social Work*
B.A. 1935, Reed; M.A. 1939, Chicago;
D.S.W. 1965, Southern California
- JEFFERIES, JOHN TREVOR**, *Astronomer, Professor of Physics*
B.S. 1947, D.S. 1962, Western Australia;
M.A. 1949, Cambridge
- JEFFRYES, JAMES A.**, *Acting Assistant Professor of Education*
B.A. 1955, Wayne; M.A. (Educ.) 1958, Colorado;
M.A. (Math) 1964, Hawaii

- JEN, CHING-HWA, *Instructor in Chinese*
B.A. 1963, National Chengchi; M.A. 1965,
National Taiwan
- JEN, SHIEN-MIN, *Instructor in Chinese*
B.A. 1955, National Taiwan; M.A. 1965,
New York
- JENKINS, ESTHER C., *Associate Professor of
Education*
B.A. 1931, Alderson-Broadbudd; M.A. 1947,
PH.D. 1962, Ohio State
- JENNER, PHILIP N., *Instructor in Asian Studies*
B.A. 1946, Washington
- JENNEY, E. ROSS, *Professor of Public Health*
B.S.C. 1927, Southern California; M.D. 1931,
Northwestern; M.P.H. 1949, California
(Berkeley)
- JHUNG, MAJ. BRYSON, *Assistant Professor of
Military Science*
B.B.A. 1954, Hawaii
- JOHNSON, DONALD D., *Professor of History*
B.A. 1938, California (Los Angeles); M.A. 1941,
PH.D. 1946, Southern California
- JOHNSON, GERALD L., *Acting Assistant Professor
of Mechanical Engineering*
B.S. 1960, Alberta; M.S. 1963, Michigan
- JOHNSON, JACQUELINE E., *Assistant Professor of
Technical Nursing*
B.S. 1949, Adelphi; M.S. 1962, St. John's
- JOHNSON, JEANNETTE, *Instructor in English
as Second Language*
B.A. 1961, M.A. 1966, Hawaii
- JOHNSON, RAY W., *Associate Professor of
Education*
B.A. 1927, College of Emporia; M.ED. 1940,
E.D.D. 1952, Southern California
- JOHNSON, RUBELLITE, *Instructor in Hawaiian*
B.A. 1954, Hawaii
- JOHNSON, WALTER, *Professor of History*
B.A. 1937, Dartmouth; M.A. 1938, PH.D. 1941,
Chicago
- JONAS, MAURICE, *Assistant Professor of French*
PH.D. 1963, Michigan
- JORDAAN, JAN M., JR., *Associate Professor of
Civil Engineering*
B.S. 1952, Witwatersrand (South Africa);
M.S. 1953, Wisconsin; C.E. 1955, sc.D. 1958,
M.I.T.
- JORDAN, RALPH E., *Lecturer in Psychology*
M.A. 1950, California
- JOSEPHSON, KENNETH, *Associate Professor of Art*
A.A.S. 1953, B.F.A. 1957, Rochester Institute of
Technology; M.S. 1960, Illinois Institute of
Technology
- JUNG, MARY M., *Instructor of Nursing (on leave)*
B.S. 1953, M.S. 1958, Rochester
- KAGAWA, GRACE, *Instructor in Medical Technology*
B.A. 1941, Kansas
- KAHANANUI, DOROTHY, *Lecturer in Hawaiian*
B.S. 1931, New York; M.ED. 1936, Hawaii
- KAINA, LORRAINE M., *Instructor in Health and
Physical Education*
B.S. 1951, M.ED. 1965, Hawaii
- KAMEMOTO, FRED I., *Associate Professor of
Zoology*
A.B. 1950, M.S. 1951, George Washington;
PH.D. 1954, Purdue
- KAMEMOTO, HARUYUKI, *Professor of Horticulture*
B.S. 1944, M.S. 1947, Hawaii; PH.D. 1950,
Cornell
- KAMIDA, ALAN, *Lecturer in Library Studies*
B.A. 1954, Michigan State; M.L.S. 1959, Rutgers
- KAMINS, ROBERT M., *Professor of Economics*
B.A. 1940, M.A. 1948, PH.D. 1950, Chicago
- KAMINS, SHIRLEY R., *Instructor in English*
B.A. 1960, M.A. 1965, Hawaii
- KANAANA, PATRICIA, *Lecturer in Spanish*
B.A. 1963, Yankton College
- KANE, ROBERT E., *Associate Professor of Anatomy*
B.S. 1953, M.I.T.; PH.D. 1947, Johns Hopkins
- KANEHIRO, YOSHINORI, *Associate Professor of
Soils*
B.S. 1942, M.S. 1948, PH.D. 1964, Hawaii
- KANG, HUGH H. W., *Assistant Professor of
Asian Studies and History*
B.A. 1956, Berea College; M.A. 1958, Chicago;
PH.D. 1964, Washington
- KANNO, JERRY K., *Instructor in Mathematics*
B.A. 1963, Hawaii; M.A. 1965, Missouri
- KANNO, LEILA L., *Acting Assistant Professor of
Speech (Hilo)*
B.ED. 1956, M.A. 1963, Hawaii
- KARIEL, HENRY S., *Professor of Political Science*
B.A. 1948, Washington; M.A. 1950, Stanford;
PH.D. 1954, California (Berkeley)
- KARNES, JOAN S., *Instructor in English*
B.A. 1962, Augustana College; M.A. 1966, Utah
- KARTSOUNIS, MARY, *Instructor in English (Hilo)
(on leave)*
A.B. 1963, California (Berkeley); M.A. 1966,
San Francisco State
- KATZ, JERRY M., *Assistant Professor of Sociology*
B.A. 1958, New York; M.A. 1964, PH.D. 1967,
California
- KAU, MANUEL C. W., *Lecturer in Public Health*
D.D.S. 1948, Northwestern; M.P.H. 1949,
Michigan
- KAULILI, LORDIE, *Lecturer in Hawaiian*
B.A. 1941, Hastings College
- KAY, E. ALISON, *Professor of General Science*
B.A. 1950, Mills; B.A. 1952, M.A. 1956,
Cambridge; PH.D. 1957, Hawaii
- KEARNEY, JOHN P., *Instructor in English*
B.A. 1963, Notre Dame; M.A. 1965, Wisconsin
- KEARNEY, SUSAN M., *Instructor in English*
B.A. 1960, M.S. 1961, Illinois
- KEELER, JOSEPH T., *Associate Professor of
Agricultural Economics*
B.S. 1951, California; M.S. 1953, Illinois
- KEFFORD, NOEL P., *Professor of Botany*
B.S.C. 1948, M.SC. 1950, Melbourne; PH.D. 1954,
London
- KELLER, LARISSA V., *Instructor in Russian*
B.A. 1961, Hawaii; M.A. 1963, Middlebury
- KELLET, EDMUND I., *Lecturer in Art*
B.S. 1956, Hawaii
- KENNEDY, DANIEL A., *Assistant Professor of
Education*
B.S. 1955, Murray State; M.A. 1960,
Indiana State; E.D.D. 1965, Oregon

- KENNEDY, VIRGINIA N., *Instructor in English*
B.A. 1935, San Diego State; M.S. 1938,
Western Reserve
- KENT, LT. COL. JOHN W., *Associate Professor of
Military Science*
B.A. 1949, Oklahoma
- KEPPEL, ANN M., *Associate Professor of
Education*
M.S. 1945, La Crosse; M.S. 1954, PH.D. 1960,
Wisconsin
- KERR, MARIAN, *Associate Professor of Music*
B.M. 1929, M.M. 1944, Oberlin
- KHAN, MOHAMMAD A., *Assistant Professor of
Geodesy*
B.S. 1957, M.S. 1963, Punjab, PH.D. 1967,
Hawaii
- KIEFER, EDGAR F., *Associate Professor of
Chemistry*
B.S. 1957, Stanford; PH.D. 1960, California
Institute of Technology
- KIM, HAZEL T., *Assistant Professor of Nursing*
B.S.N.E.D. 1950, Catholic University; M.E.D. 1962,
Hawaii
- KIM, SHINKYUNG, *Assistant Professor of
Business Economics and Statistics*
B.A. 1957, Westmar; M.A. 1960, Wichita State;
PH.D. 1964, Wayne State
- KIMURA, SUEKO, *Associate Professor of Art*
B.A. 1936, M.F.A. 1959, Hawaii
- KINARIWALA, BHARAT, *Professor of Electrical
Engineering*
B.S. 1950, Benares Hindu University; M.S.
1954, PH.D. 1957, California (Berkeley)
- KINCH, DONALD M., *Professor of Agricultural
Engineering*
B.S. 1938, Nebraska; M.S. 1940, Minnesota;
PH.D. 1943, Michigan State
- KING, ARTHUR R., JR., *Professor of Education*
B.A. 1946, Washington; M.A. 1950, Ph.D. 1955,
Stanford
- KINGHORN, KENNETH, *Instructor in American
Studies*
B.A. 1963, Morehead State; M.A. 1966, Hawaii
- KINGREY, KENNETH G., *Professor of Art*
B.E.D. 1940, M.A. 1942, California (Los Angeles)
- KIRKPATRICK, ARTHUR L., *Assistant Professor of
Business Economics and Foreign Trade*
B.A. 1935, M.A. 1937, Illinois
- KIRTLEY, BACIL F., *Associate Professor of English*
B.A. 1949, M.A. 1950, Texas; PH.D. 1955, Indiana
- KISER, SANDRA J., *Instructor in English*
B.A. 1964, M.A. 1966, Ohio
- KIVETT, SSGT. SHERRAL R., *Instructor in
Aerospace Studies*
- KLEMAS, REGINA MARIE, *Instructor in English*
B.A. 1962, Pennsylvania; M.A. 1966, Maryland
- KLIM, DONALD G., *Instructor in General Science*
B.S. 1955, Central Conn. State; M.S. 1962,
New Hampshire
- KLOPF, DONALD W., *Associate Professor of Speech*
B.A. 1953, M.A. 1955, Hawaii; PH.D. 1958,
Washington
- KNOWLTON, EDGAR C., *Professor of European
Languages*
B.A. 1941, M.A. 1942, Harvard; PH.D. 1959,
Stanford
- KNOX, ROBERT M., *Instructor in Art (Hilo)*
B.A. 1963, California (Berkeley); M.A. 1965,
San Francisco State
- KORAYASHI, KATSUMI, *Instructor in Japanese*
B.F.A. 1964, M.F.A. 1966, Hawaii
- KOBAYASHI, VICTOR N., *Assistant Professor of
Education*
ED.B. 1957, M.ED. 1960, Hawaii; PH.D. 1964,
Michigan
- KOHLER, DOROTHY I., *Assistant Professor of
Mathematics*
B.A. 1940, Woman's College, North Carolina;
M.S. 1958, Kentucky
- KOFLING, CHARLENE L., *Instructor in Home
Economics*
B.S. 1964, M.S. 1966, Nebraska
- KOGA, YOSHI, *Assistant Professor of Dental
Hygiene*
B.ED. 1951, Hawaii; M.A. 1953, Columbia
- KOKAME, GLENN M., *Associate Professor of
Surgery*
B.S. 1951, M.D. 1955, Tulane
- KON, MEGUMI, *Lecturer in Civil Engineering
(Hilo)*
B.S. 1952, Hawaii
- KONNO, YUKIO, *Instructor in Japanese*
B.A. 1959, Kokugakuin University
- KORNHAUSER, DAVID H., *Professor of Geography
and Asian Studies*
B.A. 1941, Bucknell; M.A. 1951, PH.D. 1956,
Michigan
- KOSAKI, RICHARD H., *Professor of Political Science
(Hilo)*
B.A. 1949, Hawaii; M.A. 1952, PH.D. 1956,
Minnesota
- KOSHI, JAMES H., *Professor of Animal Science*
B.S. 1948, Colorado State; PH.D. 1955,
Minnesota
- KOZUMA, MAJ. HARRY T., *Assistant Professor of
Aerospace Studies*
B.S. 1955, Hawaii; M.S. 1963, AFIT
- KRAEMER, HAZEL V., *Professor of Human
Development*
A.B. 1934, M.A. 1938, PH.D. 1945, California
(Berkeley)
- KRAUSE, ERVIN D., *Assistant Professor of English*
B.S. 1953, Iowa State; M.A. 1957, Nebraska
- KRAUSE, LORETTA, *Assistant Professor of Speech*
B.A. 1960, Minnesota; M.A. 1961, Nebraska
- KRAUSS, IRVING, *Associate Professor of Sociology*
B.A. 1950, PH.D. 1961, California; M.A. 1955,
Chicago
- KRAUSSE, SYLVIA, *Instructor in German*
B.A. 1964, M.A. 1966, Hawaii
- KRIEGER, DAVID M., *Lecturer in Education*
B.A. 1963, Occidental College
- KRUMMF, GUNTER, *Assistant Professor of
Geography*
DIPLO. OFC. PUB. 1962, Munich; PH.D. 1966,
Washington
- KUBO, WINIFRED R., *Instructor of Nursing*
B.S. 1961, Northwestern; M.S. 1964,
California (San Francisco)
- KUCERA, GEOFFREY Z., *Assistant Professor of
Education*
B.S. 1959, M.A. 1960, Florida; PH.D. 1968,
Michigan State

- KUMABE, KAZUYE T., *Assistant Professor of Social Work*
A.B. 1943, Utah; M.S.W. 1960, Hawaii
- KUNIMOTO, ELIZABETH N., *Instructor in Speech*
B.A. 1951, Michigan; M.A. 1965, Hawaii
- KUO, FRANKLIN F., *Professor of Electrical Engineering*
B.S. 1955, M.S. 1956, PH.D. 1958, Illinois
- KURODA, YASUMASA, *Associate Professor of Political Science*
B.A. 1956, M.A. 1959, PH.D. 1962, Oregon
- KWOK, D. WYNN-YE, *Associate Professor of History*
B.A. 1954, Brown; M.A. 1956, PH.D. 1959, Yale
- KYSELKA, WILL, *Assistant Professor of Education*
B.S. 1947, M.S. 1949, M.A. 1951, Michigan
- LAMKE, WALLACE E., *Instructor in General Science*
B.A. 1962, St. Mary's; M.A. 1965, California
- LAMLEY, HARRY J., *Assistant Professor of History*
B.A. 1953, Reed; M.A. 1960, PH.D. 1964, Washington
- LAMOUREUX, CHARLES H., *Associate Professor of Botany*
B.S. 1953, Rhode Island; M.S. 1955, Hawaii; PH.D. 1961, California
- LAMPARD, WILLIAM D., *Professor of Human Development*
B.A. 1941, Chicago; M.A. 1947, ED.D. 1952, Columbia
- LANDGRAF, LIBERT K., *Lecturer in Agriculture (Hilo)*
B.S. 1960, Montana
- LANGFORD, STEPHEN A., *Lecturer in Geology*
B.A. 1963, Amherst
- LANGHANS, EDWARD A., *Associate Professor of Drama*
B.A. 1948, M.A. 1949, Rochester; M.A. 1951, Hawaii; PH.D. 1955, Yale
- LARRABEE, SUMI, *Instructor in Japanese*
B.A. 1948, Tokyo Joshi Daigaku
- LARSEN-BADSE, JORGEN, *Associate Professor of Mechanical Engineering*
M.S. 1958, PH.D. 1961, Royal Danish Technical University
- LARSON, ARNOLD B., *Associate Professor of Agricultural Economics*
B.S. 1949, M.S. 1951, Minnesota; PH.D. 1960, Stanford
- LARSON, HAROLD O., *Associate Professor of Chemistry*
B.S. 1943, Wisconsin; M.S. 1947, Purdue; PH.D. 1950, Harvard
- LARSON, RICHARD L., *Associate Professor of English*
A.B. 1949, A.M. 1950, PH.D. 1963, Harvard
- LARSON, VALENTINE K., *Assistant Professor of Speech*
B.A. 1935, Fresno State; M.A. 1942, Southern California
- LASKI, LT. COL. JOSEPH S., *Professor of Aerospace Studies*
B.B.A. 1956, George Washington; M.B.A. 1961, Texas; PH.D. 1965, American University
- LAST, WALTER A., *Assistant Professor of Chemistry*
B.A. 1955, Clare College (Cambridge); PH.D. 1962, Birkbeck College (London)
- LAU, L. STEPHEN, *Associate Professor of Civil Engineering*
B.S. 1953, M.S. 1955, PH.D. 1959, California
- LAUL, LOUIS, III, *Instructor in Military Science*
- LAURILA, SIMO L., *Professor of Geodesy*
B.S.C. 1946, M.S.C. 1948, PH.D. 1953, Finland's Institute of Technology
- LAVOIE, RONALD L., *Assistant Professor of Meteorology*
B.A. 1954, New Hampshire; M.S. 1956, Florida State
- LEAHFY, WILLIAM J., *Associate Professor of Mathematics*
S.B. 1955, S.M. 1957, S.M. 1958, PH.D. 1962, M.I.T.
- LEBRA, WILLIAM P., *Professor of Anthropology and Asian Studies*
B.A. 1948, M.A. 1949, Minnesota; PH.D. 1958, Harvard
- LEDoux, LARRY V., *Instructor in English*
A.B. 1965, M.A. 1966, Sacramento State
- LEE, CORRINE H., *Instructor of Dental Hygiene*
B.ED. 1950, Hawaii
- LEE, DONG JAE, *Instructor in Korean*
B.A. 1958, Hankuk University; M.A. 1963, Hawaii
- LEE, JAE R., *Associate Professor of Medicine (Okinawa)*
M.D. 1954, Seoul National University
- LEE, MARY V., *Instructor in English*
A.B. 1943, Stanford; M.A. 1963, Oklahoma
- LEE, OLIVER M., *Assistant Professor of Political Science*
B.A. 1951, Harvard; M.A. 1955, PH.D. 1962, Chicago
- LEE, PETER H., *Associate Professor of Korean*
B.A. 1951, College of St. Thomas; M.A. 1953, Yale; PH.D. 1958, Munchen
- LEE, RICHARD K. C., *Professor of Public Health*
M.D. 1933, Tulane; DR.P.H. 1938, Yale
- LEE, SAMUEL S. O., *Associate Professor of Accounting*
B.B.A. 1952, M.B.A. 1959, Hawaii; PH.D. 1964, Columbia
- LEE, YOUNG-SOOK CHANG, *Assistant Professor of Korean*
M.A. 1951, Michigan
- LEFFORGE, ORLAND S., *Associate Professor of Speech*
B.A. 1936, Manchester College; M.A. 1940, PH.D. 1953, Wisconsin
- LEFTON, NORMAN, *Acting Assistant Professor of Economics*
B.S. 1955, Illinois; A.M. 1963, Chicago
- LEIB, AMOS P., *Associate Professor of English*
B.S. 1938, Haverford; M.A. 1947, Hawaii; PH.D. 1963, Tulane
- LEIB, EDNA LEE, *Assistant Professor of Education*
B.A. 1936, Meredith; M.A. 1940, Iowa
- LENNEY, JAMES F., *Associate Pharmacologist*
A.B. 1939, Washington; PH.D. 1947, M.I.T.

- LENOX, GEORGE, *Lecturer in Art*
B.D. 1951, Michigan
- LENZ, CHARLES E., *Professor of Electrical Engineering*
S.B. 1951, S.M. 1953, M.I.T.; PH.D. 1957, Cornell
- LESSIN, ALEXANDER, *Acting Assistant Professor of Anthropology*
B.A. 1961, M.A. 1964, California (Los Angeles)
- LESTER, MARK PRO, *Assistant Professor of English*
B.A. 1956, Pomona; M.A. 1961, PH.D. 1964, California (Berkeley)
- LETON, DONALD A., *Professor of Education*
B.S. 1947, Central State; M.A. 1949, PH.D. 1955, Minnesota
- LETON, JANE B., *Instructor of Nursing*
B.S. 1945, Skidmore; M.S. 1962, California (Los Angeles)
- LEVENBERG, KENNETH, *Assistant Professor of Mathematics (Hilo)*
B.S. 1940, City College of N.Y.; M.S. 1949, Wisconsin
- LEVI, WERNER, *Professor of Political Science*
J.D. 1934, Fribourg (Switzerland); M.A. 1943, PH.D. 1944, Minnesota
- LEVINE, AARON, *Lecturer in Political Science*
B.S. 1941, California (Berkeley); M.G.A. 1951, Pennsylvania
- LEVY, ALFRED J., *Associate Professor of English*
B.A. 1949, Clark; M.A. 1950, PH.D. 1957, Wisconsin
- LEWIS, HENRY, *Assistant Professor of Anthropology*
B.A. 1948, Fresno State
- LEWIS, DAVID W., *Associate Professor of Psychology*
A.B. 1949, Princeton; M.A. 1951, Stanford; PH.D. 1957, Minnesota
- LI, KWAN-MING, *Assistant Professor of Pharmacology*
B.S.C. 1944, Nanking; PH.D. 1966, Hong Kong
- LIGHTON, IRA J., *Associate Professor of Foods and Nutrition*
PH.B. 1949, Chicago; B.S. 1950, M.S. 1951, PH.D. 1954, Illinois
- LICHTY, LENNA G., *Instructor in English*
B.S. in Ed. 1931, M.A. 1936, Southern California
- LIEU, VAN T., *Instructor in Chemistry*
B.S. 1961, California (Berkeley); M.S. 1964, Hawaii
- LIM, HELEN K., *Instructor in Mathematics*
B.A. 1957, West Virginia Wesleyan; M.A. 1962, Southern California
- LIM, YOUNGIL, *Assistant Professor of Economics*
B.A. 1958, Howard; M.A. 1963, PH.D. 1965, California (Los Angeles)
- LIN, SHU, *Assistant Professor of Electrical Engineering*
B.S. 1959, National Taiwan University; M.S. 1964, PH.D. 1965, Rice
- LINN, JAMES R., *Associate Professor of Speech*
B.A. 1949, M.A. 1950, Alberta; M.F.A. 1953, Hawaii; PH.D. 1964, Southern California
- LINTAULT, ROGER, *Instructor in Art*
B.S. 1960, N.Y. State University College (New Paltz); M.F.A. 1962, Southern Illinois
- LITTLE, HAROLD F., *Associate Professor of Biology (Hilo)*
B.A. 1954, Lycoming; M.S. 1956, PH.D. 1959, Pennsylvania State
- LITTLE, JAMES R., *Acting Assistant Professor of Health and Physical Education*
B.S. 1958, Arizona State; M.ED. 1960, Missouri
- LLOYD, ROBERT M., *Assistant Professor of Botany*
B.A. 1960, Pomona; M.A. 1962, California (Santa Barbara); PH.D. 1968, California (Berkeley)
- LO, CHING-TANG, *Associate Professor of Chinese*
B.A. 1952, M.A. 1956, National Univ. of Taiwan; D.LITT. 1961, Ministry of Education, Taiwan
- LOH, PHILIP C. S., *Professor of Microbiology*
B.S. 1950, Morningside; M.S. 1953, Iowa State; M.P.H. 1954, PH.D. 1958, Michigan
- LOOK, ROBERT K. T., *Lecturer in Professional Nursing*
D.D.S. 1955, Maryland
- LOUIS, EDITH L., *Assistant Professor of Education*
B.A. 1931, M.ED. 1940, Hawaii
- LOVE, LUCILLE L., *Assistant Professor of Nursing*
B.S., N.E. 1955, M.S.N. 1961, Catholic University
- LOWE, HOWARD D., *Professor of Accounting and Finance*
B.S. 1945, M.S. 1948, Brigham Young; D.B.A. 1957, Indiana; C.P.A. 1949
- LOWERS, JAMES K., *Professor of English*
B.A. 1955, M.A. 1937, PH.D. 1950, California (Los Angeles)
- LUCAS, BRODER F., *Lecturer in Economics*
B.S. 1923, Cornell; M.S.A. 1950, Tennessee
- LUM, CHEONG, *Assistant Professor of Education*
B.ED. 1952, Hawaii; M.A. 1958, New York
- LUM, JEAN L. J., *Assistant Professor of Nursing (on leave)*
B.S. 1960, Hawaii; M.S. 1961, California (San Francisco)
- LUM, RICHARD S., *Assistant Professor of Music*
B.ED. 1951, Hawaii; M.MUS.ED. 1953, Northwestern
- LUM, THOMAS C. H., *Lecturer in Civil Engineering*
B.S. 1951, Washington; M.S. 1959, Illinois
- LUOMALA, KATHARINE, *Professor of Anthropology*
B.A. 1931, M.A. 1933, PH.D. 1936, California
- LUTZKY, SEYMOUR E., *Professor of American Studies*
B.A., B.J. 1942, Missouri; M.A. 1948, PH.D. 1951, Iowa State
- MACDONALD, GORDON A., *Senior Professor of Geology and Geophysics*
B.A. 1933, M.A. 1934, California (Los Angeles); PH.D. 1938, California
- MACGREGOR, BEATRIX B., *Assistant Professor of Education*
B.S. 1945, M.S. 1952, Trenton State College
- MACMILLAN, IAN T., *Instructor in English*
B.S. 1963, State University College (Oneonta, N.Y.); M.F.A. 1965, M.A. 1966, Iowa

- MACQUEEN, EVELYN S., *Assistant Professor of Drama and Theatre*
 PH.B. 1956, Detroit; M.A. 1959, Wayne State; PH.D. 1966, Michigan
- MADER, ADOLF G., *Assistant Professor of Mathematics*
 M.S. 1961, Tübingen (Germany); PH.D. 1964, New Mexico State
- MAHONEY, CARL, *Assistant Professor of Architecture*
 Diploma 1959, Arch Assn Schl of Arch (London)
- MALAHOFF, ALEXANDER, *Assistant Geophysicist*
 B.S.C. 1961, New Zealand; M.S.C. 1962, Wellington (New Zealand); PH.D. 1965, Hawaii
- MALTRY, JOSEPH, *Assistant Professor of English*
 B.A. 1952, M.A. 1954, Stanford; PH.D. 1963, Wisconsin
- MAMIYA, RICHARD T., *Associate Professor of Surgery*
 B.S. 1950, Hawaii; M.D. 1954, St. Louis
- MAMMITZSCH, ULRICH H. R., *Assistant Professor of History*
 B.A. 1959, Germany; M.A. 1961, Southern Illinois
- MANCHESTER, CURTIS A., JR., *Professor of Geography*
 B.A. 1955, M.A. 1938, PH.D. 1946, Michigan
- MANDEL, MORTON, *Associate Professor of Biophysics*
 B.C.E. 1944, City College of N.Y.; M.S. 1949, PH.D. 1957, Columbia
- MANFY, FLORENCE A., *Assistant Professor of English*
 B.A. 1947, M.A. 1951, Hawaii
- MANGHNANI, MURTI, *Assistant Geophysicist*
 B.S.C. 1957, M.S.C. 1958, Indian School of Mines and Applied Geology (India); A.I.S.M. 1958, PH.D. 1962, Montana State
- MANN, J. ADIN, *Assistant Professor of Chemistry*
 B.S. 1954, PH.D. 1962, Iowa State
- MANN, RONALD P., *Instructor in English*
 B.A. 1964, Pittsburgh
- MANOHARAN, ARTHUR, *Associate Professor of Public Health*
 M.B.B.S. 1951, Madras; D.P.H. 1957, London; DR.P.H. 1960, Columbia
- MANSSON, HELGE H., *Assistant Professor of Psychology*
 B.A. 1960, California (Los Angeles); PH.D. 1965, New York
- MARETZKI, AUDREY, *Assistant Professor of Foods and Nutrition*
 B.S. 1957, M.S. 1960, Pennsylvania State
- MARETZKI, THOMAS W., *Professor of Anthropology*
 B.A. 1951, Hawaii; PH.D. 1957, Yale
- MARGULIES, HERBERT F., *Associate Professor of History*
 B.A. 1950, Reed; M.A. 1951, PH.D. 1955, Wisconsin
- MARK, SHELLEY, *Lecturer in Economics*
 B.A. 1943, PH.D. 1956, Washington; M.S. 1944, Columbia
- MARKEY, BEATRICE G., *Associate Professor of Political Science (Hilo)*
 PH.D. 1953, Chicago; M.S. 1952, D.P.A. 1956, Southern California
- MARKHAM, GEORGE, *Assistant Professor of Public Health*
 B.S. 1949, Idaho State College; M.S. 1950, Idaho; M.P.H. 1964, D.S.C. 1967, Tulane
- MARTIN, ROBERT M., *Professor of Education*
 B.S. 1937, Linfield College; M.A. 1946, PH.D. 1949, Washington
- MARUYAMA, AYLENE H. K., *Instructor in Professional Nursing*
 B.S. 1964, Hawaii; M.S.N. 1965, Washington
- MASON, CHARLES W., *Assistant Professor in English as Second Language*
 B.A. 1949, Roosevelt; M.ED. 1951, Colorado; PH.D. 1968, Southern Illinois
- MASON, LEONARD E., *Professor of Anthropology*
 B.A. 1935, M.A. 1941, Minnesota; PH.D. 1955, Yale
- MASON, RICHARD G., *Assistant Professor of Drama and Theatre*
 B.A. 1950, Swarthmore; M.F.A. 1953, Yale
- MATSON, FLOYD W., *Associate Professor of American Studies*
 A.B. 1950, M.A. 1953, PH.D. 1960, California (Berkeley)
- MATSUI, ADELINA V. D. S., *Associate Pharmacologist*
 M.D. 1950, Faculdade de Medicina da Universidade de Minas Gerais, Belo Horizonte, M.G. (Brazil)
- MATSUMOTO, HIROMU, *Professor of Agricultural Biochemistry*
 B.S. 1944, M.S. 1945, Hawaii; PH.D. 1955, Purdue
- MATSUMOTO, Y. SCOTT, *Associate Professor of Public Health*
 B.S. 1949, M.A. 1945, PH.D. 1957, American
- MATSUYAMA, SEIYA, *Associate Professor of Radiology (Okinawa)*
 M.D., 1960, Nagasaki University
- MATTHEWS, DONALD C., *Professor of Zoology*
 B.A. 1931, PH.D. 1935, Wisconsin
- MAUKELE, PATRICIA A., *Instructor in Hawaiian*
 B.ED. 1966, Hawaii
- MAURER, WALTER H., *Associate Professor of Sanskrit and History*
 B.A. 1943; Vermont; PH.D. 1962, Pennsylvania
- MAY, MICHAEL, *Associate Professor of Speech Pathology and Audiology*
 B.A. 1962, City College of New York; M.A. 1963, Ohio; PH.D. 1967, Stanford
- MCALISTER, DOROTHY, *Lecturer in Library Studies*
 B.ED. 1936, Illinois State Normal; B.S.L.S. 1942, Illinois
- MCALISTER, HOWARD C., *Associate Professor of Physics*
 B.S. 1948, M.S. 1950, Wyoming; PH.D. 1959, Colorado
- MCCARDLE, H. ROY, *Instructor in Business Administration*
 B.S. 1941, Columbia; M.B.A. 1962, Hawaii
- MCCABE, SUMIE F., *Assistant Dean, Graduate Division*
 B.ED. 1946, M.A. 1949, Hawaii
- MCCARTHY, HAROLD E., *Professor of Philosophy*
 B.A. 1937, M.A. 1942, PH.D. 1947, California (Berkeley)

- MCCLEAR, SHEILA A., *Instructor in English*
A.B. 1965, Nazareth College; M.A. 1966,
Michigan
- MCCUTCHEON, ELIZABETH N., *Assistant Professor*
of English
B.A. 1954, William Smith; M.A. 1956, PH.D.
1961, Wisconsin
- MCCUTCHEON, JAMES M., *Associate Professor of*
History and American Studies
B.A. 1934, Hobart; M.S. 1955, PH.D. 1959,
Wisconsin
- MCDONALD, RAY L., *Assistant Professor of*
Chemistry
A.B. 1955, San Diego State; PH.D. 1960,
Oregon State
- MCGAW, MAJ. CHARLES D., *Assistant Professor*
of Military Science
B.S. 1958, Murray State
- MCINTOSH, DEAN K., *Assistant Professor of*
Education
B.S. 1959, Colorado; M.A. 1964, F.D. 1966,
California (Los Angeles)
- MCINTOSH, THELMA A., *Associate Professor of*
Education
B.A. 1931, M.A. 1950, F.D. 1955, North Texas
State
- MCKAUGHAN, HOWARD P., *Professor of Linguistics*
B.A. 1945, California (Los Angeles); M.TH.
1946, Dallas Theological Seminary; M.A. 1952,
PH.D. 1957, Cornell
- MCKAY, DOUGLAS, *Acting Assistant Professor of*
Spanish
B.A. 1962, Utah; M.A. 1964, Oregon State
- MCKAY, R. NEIL, *Associate Professor of Music*
B.A. 1953, Western Ontario; M.A. 1955, PH.D.
1956, Eastman School of Music
- MCKAY, ROBERT H., *Assistant Professor of*
Biochemistry
B.S. 1953, Washington; PH.D. 1959, California
(Berkeley)
- MCLAIN, DENNIS A., *Assistant Specialist in*
Horticulture
B.S. 1964, California State Polytechnic; M.S.
1966, Michigan State
- MCLARTY, JOYCE R., *Instructor in Asian and*
Pacific Languages
B.A. 1964, Tufts; M.A. 1966, Hawaii
- MCLFOD, RUSSELL, *Instructor in Chinese*
B.A. 1956, M.A. 1963, Hawaii
- MCMANUS, DOROTHY, *Instructor in English*
B.A. 1964, College of New Rochelle; M.A.T.
1965, Notre Dame; M.A. 1967, New York
- MCMAMARA, MAJ. MICHAEL J., *Assistant Professor*
of Military Science
B.A. 1958, Rutgers
- MCFEIL, DON W., *Assistant Professor of Library*
Studies
B.A. 1957, Buena Vista College; M.S. in L.S.
1959, Kentucky
- MCVAY, HARUE O., *Assistant Professor of Art*
B.A. 1950, Hawaii; M.A. 1951, Ohio State
- MELLER, NORMAN, *Professor of Political Science*
LL.B. 1936, B.A. 1942, California (Berkeley);
M.A. 1951, PH.D. 1955, Chicago
- MENDELSON, GERRY B., *Assistant Professor of*
Education
B.S. 1955, M.A. 1960, New York; ED.D. 1967,
Indiana
- MENIKOFF, BARRY, *Assistant Professor of English*
B.A. 1960, Brooklyn; M.S. 1962, PH.D. 1966,
Wisconsin
- MERRITT, FRED C., *Associate Professor of Social*
Work
B.A. 1941, Montana; M.S.W. 1949, Denver
- MI, MING-PI, *Associate Professor of Genetics*
B.S. 1954, National Taiwan; M.S. 1959, PH.D.
1963, Wisconsin
- MICCIO, JOSEPH V., *Professor of Management*
B.B.A. 1938, St. Johns; M.A. 1940, New York;
LL.D. (Hon.) 1963, Fairleigh Dickinson;
ED.D. 1965, New York
- MICHALSKI, JOHN, *Assistant Professor of*
European Languages
B.A. 1953, Toledo; M.A. 1954, Northwestern
- MIDDLEBROOK, JUDITH, *Assistant Professor of*
English
B.A. 1957, Radcliffe; M.A. 1959, PH.D. 1967,
Yale; M.S. 1964, Columbia
- MIKAMI, KAY K., *Lecturer in Music*
SHIHAN, 1939, Miyagi Koto (Japan)
- MIKASA, HENRY Y., *Assistant Professor of*
Civil Engineering
B.S. 1956, Hawaii; M.S. 1961, Southern
California
- MIKLIUS, WALTER, *Associate Professor of*
Economics
B.A. 1958, California State (Los Angeles); M.A.
1960, PH.D. 1964, California (Los Angeles)
- MILLER, DAVID R., *Instructor in English (Hilo)*
(on leave)
A.B. 1964, M.A. 1966, San Francisco State
- MILLER, HELEN N., *Instructor in French*
B.ED., 5th Yr. Diploma 1951, M.A. 1967,
Hawaii; DIPLOMA 1962, Paris
- MILLER, HUGH M., *Exchange Professor of Music*
B.A. 1930, Oregon; M.A. 1938, PH.D. 1942,
Harvard
- MILLER, T/SGT. RICHARD L., *Instructor in*
Avospace Studies
- MILLER, STEVEN, *Acting Assistant Professor of*
German
B.A. 1962, M.A. 1965, California (Davis)
- MINETTE, HENRI P., *Lecturer in Microbiology*
(Hilo)
B.S. 1939, Arizona; M.P.H. 1964, DR.P.H. 1965,
Tulane
- MINN, GERALDINE H., *Instructor in Speech and*
Education
B.ED. 1966, M.ED. 1967, Hawaii
- MITCHELL, WALLACE C., *Associate Professor of*
Entomology
B.S. 1942, M.S. 1949, PH.D. 1955, Iowa State
- MITSUDA, TITSUICHI, *Associate Professor of*
Engineering
B.S. 1949, Rose Polytechnic Institute; M.S. 1952,
PH.D. 1956, Illinois
- MIWA, RALPH M., *Associate Professor of*
Political Science
B.A. 1948, M.A. 1950, Hawaii; PH.D. 1953,
Johns Hopkins
- MIAHIRA, ALLEN, *Lecturer in Animal Science*
D.V.M. 1954, M.S. 1960, Iowa State
- MIAMURA, HENRY, *Lecturer in Music*
B.M. 1960, Eastman School of Music

- MIYOI, CLIFFORD J., *Lecturer in Accounting & Finance*
B.A. 1952, Hawaii; M.B.A. 1957, Pennsylvania
- MOBERLY, RALPH M., JR., *Associate Professor of Geology*
B.A. 1950, PH.D. 1956, Princeton
- MOELLER, MARCIA L., *Instructor of Nursing*
B.S.N. 1963, M.S.N. 1964, Wayne
- MOELY, BARBARA E., *Assistant Professor of Psychology*
B.A. 1962, M.A. 1964, Wisconsin; PH.D. 1967, Minnesota
- MOES, ROBERT, *Acting Assistant Professor of Art*
B.A. 1958, Southern California; M.A. 1963, Michigan
- MOH, ZA-LEE, *Associate Professor of Civil Engineering*
B.S.C.E. 1950, National Taiwan; M.S.C.E. 1953, PH.D. 1960, Purdue
- MONTES, MATIAS, *Associate Professor of Spanish*
B.A. 1948, Havana Institute; PH.D. 1952, Havana
- MONTES, YARA, *Instructor in Spanish*
PH.D. 1952, Havana
- MOOKINI, EDWIN H., *Professor of Mathematics*
B.S. 1947, M.S. 1948, Chicago; PH.D. 1964, California (Los Angeles)
- MOON, CARL A., *Assistant Professor of English (Hilo)*
B.A. 1949, Ohio State; M.A. 1951, Minnesota
- MOORE, ANNELIESE W., *Assistant Professor of European Languages*
B.A. 1958, Hawaii; M.A. 1959, California (Berkeley)
- MOORE, RICHARD E., *Assistant Professor of Chemistry*
B.S. 1957, San Francisco; M.S. 1959, PH.D. 1962, California (Berkeley)
- MOORE, ROBERT A., *Lecturer in Geography*
B.A. 1963, Hawaii
- MOORE, SHIRLEY J., *Instructor in Education*
B.S. 1961, M.A. 1962, Missouri
- MOORE, TERENCE O., *Assistant Professor of Physiology*
A.B. 1961, A.M. 1963, PH.D. 1966, Missouri
- MORRIS, JAMES D., *Associate Professor of Education*
B.S. 1955, Northern State College; M.A. 1957, F.D. 1961, North Dakota
- MORRIS, MARJORIE G., *Lecturer in Social Work*
A.B. 1934, Ohio; M.S.W. 1947, Missouri
- MORRIS, V. DIXON, *Acting Assistant Professor of History*
B.A. 1958, Centenary College of Louisiana
- MORTON, NEWTON E., *Professor of Genetics*
B.A. 1951, Hawaii; M.S. 1952, PH.D. 1955, Wisconsin
- MOWER, HOWARD F., *Associate Professor of Biochemistry*
B.S. 1951, PH.D. 1955, California Institute of Technology
- MOY, JAMES H., *Assistant Professor of Food Science and Technology*
B.S. 1957, M.S. 1958, Wisconsin; PH.D. 1965, Rutgers
- MUELLER-DOMBOIS, DIETER, *Assistant Professor of Botany*
DIPLOM LANDWIRT 1951, Stuttgart-Hohenheim; B.S.C.F. 1955, PH.D. 1960, British Columbia
- MUIR, BARRY S., *Associate Professor of Zoology*
B.A. 1956, M.A. 1958, PH.D. 1961, Toronto
- MUN, ORVILLE, *Lecturer in Education*
B.A. 1951; M.A. 1952, Colorado State College
- MUNCHMEYER, FREDERICK C., *Associate Professor of Mechanical Engineering*
B.S. 1942, Coast Guard Academy; M.S. 1948, M.I.T.
- MURPHY, GARTH I., *Professor of Oceanography*
B.A. 1943, M.A. 1948, California (Berkeley); PH.D. 1965, California (San Diego)
- MURPHY, THOMAS D., *Professor of History*
B.A. 1933, M.A. 1934, Wesleyan; PH.D. 1939, Yale
- MYTINGER, BEVERLY, *Lecturer in Professional Nursing*
M.P.H. 1957, Michigan
- MYTINGER, ROBERT E., *Associate Professor of Public Health*
B.S. 1948, DR.P.H. 1965, California (Los Angeles); M.P.H. 1950, California (Berkeley)
- NAGLEY, WINFIELD E., *Professor of Philosophy*
B.A. 1940, PH.D. 1947, Southern California; B.D. 1943, San Francisco Theological Seminary
- NAGOSHI, JACK T., *Associate Professor of Social Work*
B.A. 1951, M.S.W. 1953, Hawaii
- NAJITA, KAZUTOSHI, *Assistant Professor of Electrical Engineering*
B.S. 1953, Illinois Institute of Technology; M.S. 1955, Brown
- NAKAMURA, IRENE H., *Assistant Professor of Education*
B.ED. 1943, Hawaii; M.ED. 1963, Hawaii
- NAKASONE, HENRY Y., *Associate Professor of Horticulture*
B.A. 1943, M.S. 1952, PH.D. 1960, Hawaii
- NAKATSUJI, DOROTHY, *Instructor of Nursing*
B.S. 1955, M.S. 1962, Utah
- NAMBA, RYOJI, *Associate Professor of Entomology*
B.S. 1948, M.S. 1950, Michigan State; PH.D. 1953, Minnesota
- NAUGHTON, JOHN J., *Professor of Chemistry*
B.S. 1936, College of the City of N.Y.; M.S. 1940, PH.D. 1942, New York
- NAYA, SEIJI, *Associate Professor of Economics*
B.B.A. 1958, Hawaii; M.A. 1962, PH.D. 1965, Wisconsin
- NEFF, CHARLES B., *Associate Professor of Political Science*
B.A. 1954, Pomona; M.A. 1959, PH.D. 1961, Yale
- NEIL, J. MEREDITH, *Assistant Professor of American Studies*
B.A. 1959, Yale; M.S. 1963, Wisconsin; PH.D. 1966, Washington State

- NELSON, FRANK G., *Professor of English (Hilo)*
A.B. 1930, Park College; M.A. 1931, Haverford;
PH.D. 1937, California (Berkeley)
- NELSON, TORLEF, *Professor of Education*
B.S. 1942, M.S. 1947, Oregon; ED.D. 1952,
Washington
- NEOGY, PRITHWISH, *Professor of Art*
B.A. 1940, Calcutta; M.A. 1948, Harvard
- NEWBY, IDUS A., *Associate Professor of History*
B.S. 1951, Georgia Southern College; M.A. 1957,
South Carolina; PH.D. 1962, California (Los
Angeles)
- NEWHOUSE, W. JAN, *Assistant Professor of
General Science*
B.S. 1949, Dartmouth; M.S. 1952, New
Hampshire; PH.D. 1967, Hawaii
- NEWMAN, MARTIN, *Instructor in Art*
B.F.A. 1965, Illinois; M.P.A. 1967, Rhode Island
School of Design
- NEWTON, OLIVE C., *Instructor in English*
B.A. 1931, Adrian College; M.A. 1942, Ohio
State
- NIFDZIFLSKI, HENRI, *Associate Professor of French*
B.A. 1959, M.A. 1963, PH.D. 1964, Connecticut
- NISHIDA, TOSHIYUKI, *Professor of Entomology*
B.S. 1941, M.S. 1947, Hawaii; PH.D. 1953,
California
- NISHIMURA, EDWIN T., *Professor of Pathology*
A.B. 1940, M.D. 1945, Wayne State
- NISHIMURA, HIROKO, *Instructor in Japanese*
B.A. 1960, Aichi Women's College; M.A. 1962,
Waseda
- NIWAI, JITSUO, *Lecturer in Civil Engineering
(Hilo)*
B.S. 1938, Carnegie Institute of Technology
- NIYIKAWA, AGNES M., *Associate Professor of
Education*
B.A. 1945, Tokyo Joshi Daigaku; B.A. 1952,
Hawaii; M.A. 1954, Bryn Mawr; PH.D. 1960,
New York
- NOBUHARA, WALTER S., *Associate Professor in
Dental Hygiene*
D.D.S. 1958, Michigan
- NOBUSAWA, NOBUO, *Associate Professor of
Mathematics*
B.S. 1953, M.Sc. 1955, PH.D. 1958, Osaka
- NODA, DANIEL S., *Associate Professor of Education*
B.D. 1941, Hawaii; PH.D. 1952, Ohio State
- NODA, KAORU, *Associate Professor of Science
(Hilo)*
B.A. 1950, Grinnell; M.S. 1953, PH.D. 1956, Iowa
- NOGUCHI, TAKA, *Instructor in Japanese*
B.A. 1930, Tokyo Woman's Christian College
- NOREM, JON G., *Assistant Professor of Accounting*
B.S.B.A. 1962, M.S. 1965, North Dakota; C.P.A.
1965
- NORRIS, BEN, *Professor of Art*
B.A. 1931, Pomona
- NORRIS, GEORGE B., JR., *Instructor in Military
Science*
- NORTON, TED R., *Professor of Pharmacology
(Medicinal Chemistry)*
A.B. 1940, College of the Pacific; PH.D. 1943,
Northwestern
- NOSE, KATASHI, *Assistant Professor of Physics*
B.S. 1937, Hawaii; ED.M. 1961, Harvard
- NOYES, ROBERT W., *Professor of Anatomy*
A.B. 1941, M.D. 1943, California (Berkeley)
- NUGENT, CHARLES A., JR., *Professor of Medicine*
M.D. 1951, Yale
- NUNN, G. RAYMOND, *Professor of History and
Asian Studies (on leave)*
B.A. 1950, London; M.A. 1954, PH.D. 1957,
Michigan
- OAKES, WILLIAM F., *Professor of Psychology*
B.A. 1951, M.A. 1952, Wichita; PH.D. 1956,
Minnesota
- O'BRIEN, ETHEL M., *Associate Professor of Health
and Physical Education*
B.A. 1937, California; M.F.D. 1950, Hawaii;
ED.D. 1958, Oregon
- ODA, JUNE, *Lecturer in Social Work*
B.S. 1952; 5th Yr. Cert. 1953, Hawaii; M.S.
1960, Smith
- O'HARROW, STEPHEN, *Instructor in Vietnamese*
B.A. 1962, Michigan; M.A. 1965, London
- OKADA, ROY K., *Instructor in English*
B.A. 1963, 5th Yr. Cert. 1964, Hawaii; M.A.
1965, California (Los Angeles)
- OLSON, MARIAN, *Professor of Nursing*
B.S. 1953, Nebraska; M.A. (Nurs.) 1961, M.A.
(Psych.) 1962, Iowa; PH.D. 1966, California
(Los Angeles)
- OMPS, JAMES R., *Professor of Accounting*
B.S. 1951, Brigham Young; M.LITT. 1957,
PH.D. 1961, Pittsburgh; C.P.A. 1958
- OMURO, WAYNE S., *Lecturer in Social Work*
B.A. 1949, California (Los Angeles); M.S. 1952,
Columbia
- ONO, HIROSHI, *Assistant Professor of Psychology*
B.A. 1960, Dartmouth College; PH.D. 1965,
Stanford
- ONOPA, ROBERT L., *Instructor in English*
B.A. 1964, Illinois; M.A. 1966, Connecticut
- ORRALL, FRANK Q., *Professor of Physics and
Astronomy*
B.S. 1950, Massachusetts; A.M. 1954, PH.D.
1956, Harvard
- ORTOLANI, BENITO, *Associate Professor of Drama
and Theatre*
LICENSE 1959, Hochschule Sankt Georgen
(Frankfurt); PH.D. 1961, Vienna
- OSHIMA, HARRY T., *Professor of Economics*
B.A. 1940, Hawaii; PH.D. 1955, Columbia
- OWEN, JAMES L., *Assistant Professor of Speech*
B.A. 1956, Southern California (Los Angeles);
M.A. 1960, Montana; PH.D. 1967, Denver
- OWENS, MONIKA, *Instructor in French*
B.A. 1965, Harpur; M.A. 1967, Hawaii
- OXFORD, WAYNE H., *Instructor in Speech*
B.A. 1954, M.A. 1960, California (Los Angeles)
- OZAKI, FLORA T., *Assistant Professor of Nursing*
B.S. 1948, Hawaii; M.A. 1954, Columbia
- OZAWA, THEODORE Y., *Instructor in Education*
B.A. 1954, B.ED. 1959, M.F.D. 1963, Hawaii

- PAGE-CALLIS, JACQUELINE R., *Instructor in General Sciences*
B.A. 1959, Chicago; M.A. 1961, De Paul
- PAIGE, GLENN D., *Professor of Political Science*
B.A. 1955, Princeton; M.A. 1957, Harvard; PH.D. 1959, Northwestern
- PALAFIX, ANASTACIO L., *Assistant Professor of Poultry Science*
B.S. 1940, M.S. 1941, Washington State
- PALMER, DANIEL D., *Assistant Professor of Pharmacology*
B.S. 1952, Michigan; M.D. 1956, Minnesota
- PALUMBO, NICHOLAS E., *Associate Professor of Comparative Medicine*
B.S. 1952, D.V.M. 1959, Missouri
- PANG, MORRIS S. Y., *Assistant Professor of Education*
B.E.D. 1950, M.ED. 1962, Hawaii
- PANG-CHING, GLENN K., *Assistant Professor of Audiology*
B.S. 1957, Los Angeles State; M.S. 1958, Purdue; PH.D. 1966, Southern California
- PANKIWSKYJ, KOST ANDRIJ, *Assistant Professor of Geology*
B.S. 1959, M.I.T.; PH.D. 1964, Harvard
- PARK, CHAI BIN, *Associate Professor of Public Health*
M.D. 1949, Seoul National; M.P.H. 1956, DR.P.H. 1959, California (Berkeley)
- PARKER, GARY J., *Assistant Professor of Linguistics*
B.A. 1959, Harpur; PH.D. 1964, Cornell
- PASBY, BRIAN F., *Assistant Professor of Oceanography*
B.S. 1959, Kings' College (London); M.S. 1960, University College (London)
- PASLES, CHRISTOPHER, *Instructor in English*
B.A. 1965, Virginia; M.A. 1966, Claremont
- PASSLER, JUTTA, *Instructor in German*
B.A. 1960, M.A. 1964, California (Berkeley)
- PATTERSON, MARY, *Associate Professor of Nursing*
B.S. 1942, Columbia; M.A. 1947, New York; D.ED. 1967, California (Los Angeles)
- PAYNE, EDWARD, *Lecturer in Professional Nursing*
M.D. 1934, Northwestern
- PEARSON, JOHN W., *Associate Professor of Anesthesiology (Okinawa)*
B.A. 1951, B.M., B.CH. 1953, M.A. and D.M. 1966, Oxford (England)
- PEARSON, RICHARD J., *Assistant Professor of Anthropology*
B.A. 1960, Toronto; PH.D. 1966, Yale
- PE BENITO, FELIPE, *Instructor in Tagalog*
B.S.E. 1952, Central Philippines University
- PENDLETON, EDWIN C., *Professor of Business Economics and Industrial Relations*
B.S. 1932, M.S. 1934, PH.D. 1950, California (Berkeley)
- PETERS, GAIL F., *Instructor in English*
B.A. 1962, M.A. 1964, Hawaii
- PETERS, MICHAEL W., *Assistant Professor of Physics*
B.S. 1959, California Institute of Technology; PH.D. 1964, Wisconsin
- PETERSON, FRANK I., *Assistant Professor of Hydrology*
B.A. 1963, Cornell, M.A. 1965, PH.D. 1967, Stanford
- PETERSON, MARILYN L., *Instructor in English*
B.A. 1961, M.A. 1965, Trinity
- PETERSON, RICHARD E., *Assistant Professor of Business Economics and Statistics*
A.B. 1954, Stanford; M.A. 1966, California
- PETERSON, VINCENT Z., *Professor of Physics*
B.A. 1943, Pomona; PH.D. 1950, California
- PETERSON, W. WESLEY, *Professor of Electrical Engineering*
A.B. 1948, B.S.E. 1949, M.S.E. 1950, PH.D. 1954, Michigan
- PFEIFFER, RUTH, *Lecturer in Music*
B.A. 1952, Silliman (Philippines); M.A. 1957, Union Theological Seminary (N.Y.)
- PFEIFFER, WILLIAM R., *Assistant Professor of Music*
B.MUS. 1932, Chicago Musical College; B.A. 1939, Hastings; M.A. 1965, Hawaii
- PHILIPP, ELIZABETH M., *Instructor in German*
B.A. 1942, California (Berkeley)
- PHILIPP, PERRY F., *Professor of Agricultural Economics*
B.S. 1940, PH.D. 1951, California
- PICARD, ANTHONY J., *Assistant Professor of Education*
B.S. 1960, W. Chester State College; M.A. 1962, Villanova; PH.D. 1967, Ohio State
- PICKENS, ALEX L., *Associate Professor of Education*
B.A. 1950, Southern Methodist; M.A. 1952, North Texas State; ED.D. 1954, Columbia
- PIERSOL, ROBERT J., *Assistant Professor of Marketing*
B.S. 1948, Illinois; M.B.A. 1959, Stanford; D.B.A. 1967, Harvard
- PIETTE, LAWRENCE H., *Professor of Biophysics*
B.S. 1953, M.S. 1954, Northwestern; PH.D. 1957, Stanford
- PIIANAIA, ABRAHAM, *Lecturer in Geography*
B.A. 1953, Hawaii
- PILECKI, GERALD A., *Associate Professor of English (Hilo)*
B.A. 1949, M.A. 1951, Toronto; PH.D. 1961, Cornell
- PIRIE, PETER N. D., *Associate Professor of Geography*
B.A. 1953, M.A. 1954, Auckland; PH.D. 1964, National (Australia)
- PITTS, FORREST R., *Professor of Geography*
B.A. 1948, M.A. 1949, PH.D. 1955, Michigan
- PLAISTER, THEODORE H., *Associate Professor in English as Second Language*
B.S. 1950, California; M.A. 1960, Michigan
- PLUCKNETT, DONALD L., *Associate Professor of Agronomy*
B.S. 1953, M.S. 1957, Nebraska; PH.D. 1961, Hawaii
- POEPOE, ABRAHAM, JR., *Lecturer in Education*
B.A. 1951, 5th Yr. Cert. 1952, Whitman; 5th Yr. Cert. 1958, Hawaii
- POLEMIS, BERNICE M., *Professor of Social Work*
A.B. 1940, Whitman; A.M. 1941, PH.D. 1943, Illinois
- POLLACK, RICHARD, *Assistant Professor of Economics*
B.A. 1955, M.A. 1956, Washington; PH.D. 1967, Wisconsin

- POND, DONALD H., *Assistant Professor of Economics and Asian Studies*
B.A. 1958, Swarthmore; PH.D. 1968, Cornell
- PONG, WILLIAM, *Associate Professor of Physics*
B.S. 1951, M.S. 1952, PH.D. 1954, Cincinnati
- POOLE, RICHARD T., *Assistant Professor of Horticulture*
B.S. 1953, Principia; B.S. 1959, S. W. Louisiana; M.S.A. 1961, PH.D. 1964, Florida
- PORTER, M. ROSEAMONDE, *Professor of Education*
B.S. 1930, M.A. 1934, PH.D. 1938, Ohio State
- POTTENGER, FRANCIS M., *Acting Assistant Professor of Education*
B.S. 1951, Otterbein; M.ED. 1957, Xavier; M.S. 1954, New Mexico
- POTTER, ROBERT E., *Associate Professor of Education*
A.B. 1947, M.F.D. 1948, Ohio; ED.D. 1954, Illinois
- POYZER, MARVIN F., *Professor of Education*
B.S. 1938, North Dakota; M.A. 1948, Colorado State College of Education; ED.D. 1954, Bradley
- PREBLE, DUANE, *Assistant Professor of Art*
B.A. 1949, California (Los Angeles); M.F.A. 1963, Hawaii
- PRESSMAN, KENNETH S., *Instructor in English*
B.A. 1962, Northwestern; M.A. 1963, New York
- PSACHROPOULOS, GEORGE, *Acting Assistant Professor of Economics*
B.A. 1960, College of Business and Economics (Athens); M.A. 1966, Chicago
- PUTMAN, EDISON W., *Associate Professor of Plant Physiology*
B.A. 1942, PH.D. 1952, California (Berkeley)
- RACKLEY, WALTRAUD, *Lecturer in German*
- RAMAGE, COLIN S., *Professor of Meteorology*
B.S. 1940, Victoria University College (New Zealand); SC.D. 1961, New Zealand
- RAMANATHAN, S., *Assistant Pharmacologist*
B.S.C. 1954, M.A. 1957, Madras (India); PH.D. 1963, Bangalore (India)
- RANTALA, JOHN W., *Assistant Professor of Education*
B.S. 1951, Stout Institute; M.ED. 1953, Illinois
- RAPSON, RICHARD L., *Assistant Professor of History*
B.A. 1958, Amherst; PH.D. 1966, Columbia
- RAYMOND, PATRICIA G., *Instructor in English*
B.A. 1961, Northern Illinois; M.A. 1963, Illinois
- RAYNER, MARTIN D., *Assistant Professor of Physiology*
B.A. 1958, PH.D. 1962, Cambridge
- RE, MARGUERITE, *Instructor in English*
B.A. 1964, M.A. 1965, Wisconsin
- REDDIN, MARY E., *Assistant Professor of Education*
B.A. 1939, National College of Education; M.A. 1943, Northwestern; ED.D. 1967, Indiana
- REED, HELEN C., *Instructor in Education*
B.ED. 1931, National College of Education; M.A. 1947, Columbia
- REED, ROBERT M., *Associate Professor of Education*
B.A. 1956, Iowa; M.A. 1958, Michigan
- REESE, ERNST S., *Associate Professor of Zoology*
B.A. 1953, Princeton; PH.D. 1960, California (Los Angeles)
- REID, IAN E., *Associate Professor of Education*
B.S. 1957, M.S. 1960, PH.D. 1964, Utah
- REIS, S/SGT. JOHN E. H., *Instructor in Air Science*
- REIT, ANN BRYANT, *Assistant Professor of Nursing*
B.S. 1965, Mount Saint Mary's College; M.N.S. 1966, California (San Francisco)
- RESIG, JOHANNA, *Assistant Micropaleontologist*
B.S. 1954, M.S. 1966, Southern California; DR. REV. NAT. 1965, Kiel (Germany)
- RIAN, NORMAN D., *Professor of Music*
B.A. 1935, St. Olaf College; M.A. 1939, Eastman School of Music; ED.D. 1960, Columbia
- RICHARDS, GRIFFITH G., *Acting Assistant Professor of Speech*
B.A. 1957, California (Berkeley); M.A. 1959, Stanford
- RICHIE, JEANNE, *Assistant Professor of Public Health*
B.S. 1945, California; M.A. 1952, Columbia; M.P.H. 1958, Harvard
- RICHMAN, EUGENE, *Professor of Management*
B. IND. E. 1942, Rensselaer Polytechnic; M.A.D.E. 1949, D.ENG.SC. 1951, New York
- RICHSTAD, JIM A., *Assistant Professor of Journalism*
B.A. 1954, Washington; PH.D. 1967, University of Minnesota
- RICKARD, DAVID T., *Instructor in English as Second Language*
B.A. 1951, Cascade College; B.D. 1953, Asbury Seminary
- RIDER, RICHARD L., *Professor of Speech*
A.B. 1937, Nebraska; M.F.A. 1947, Yale; PH.D. 1958, Illinois
- RIGGS, FRED W., *Professor of Political Science*
B.A. 1938, Illinois; M.A. 1941, Fletcher School; PH.D. 1948, Columbia
- RITTER, E. GENE, *Associate Professor of Speech Pathology*
A.B. 1950, William Jewell College; M.A. 1956, PH.D. 1962, Missouri
- ROBERTS, HAROLD S., *Senior Professor of Business Economics and Industrial Relations*
B.S.S. 1934, College of the City of N.Y.; M.A. 1938, PH.D. 1944, Columbia
- ROBERTS, NORMAN F., *Instructor in English as Second Language*
B.A. 1960, M.A. 1963, Hawaii
- ROBIN, LOUIS, *Lecturer in Education*
B.A. 1950, M.A. 1961, Fresno State
- ROBINSON, HESTER A., *Professor of Art*
B.A. 1931, Miami; M.A. 1939, Ohio State
- ROELOFS, THOMAS H., *Assistant Professor of Electrical Engineering*
B.F.E. 1960, M.E.E. 1961, PH.D. 1964, Cornell
- ROFF, TOSHIKO, *Instructor in Japanese*
B.A. 1958, Rikkyo
- ROGERS, KENNETH, *Associate Professor of Mathematics*
B.A. 1951, Trinity College, Cambridge; PH.D. 1954, Cambridge
- ROGERS, TERENCE A., *Professor of Physiology*
B.S. 1952, British Columbia; PH.D. 1955, California

- ROMANOWSKI, ROMAN R., *Associate Professor of Horticulture*
B.S. 1953, M.S. 1957, Wisconsin; PH.D. 1961, Cornell
- ROSEN, JAMES M., *Assistant Professor of Art*
B.S. 1957, Wayne; M.F.A. 1958, Cranbrook Academy
- ROSENBERG, MORTON M., *Senior Professor of Poultry Science*
B.S. 1938, Rutgers; M.S. 1940, Texas A. & M.; PH.D. 1948, Wisconsin
- ROSS, EDWARD, *Professor of Food Science*
B.S. 1932, Pennsylvania State; PH.D. 1937, California
- ROSS, ERNEST, *Professor of Poultry Science*
B.S. 1946, Arizona; M.S. 1952, PH.D. 1955, Ohio State
- ROSSBACHER, PETER G., *Associate Professor of Russian*
PH.D. 1959, University of Kiel
- ROTAR, PETER P., *Associate Professor of Agronomy*
B.S. 1955, M.S. 1957, Washington State; PH.D. 1960, Nebraska
- ROULEAU, PATRICIA A., *Lecturer in Education*
B.S.N. 1947, Washington
- ROUNSEVILLE, EUGENE, *Associate Professor of Pathology*
B.S. 1954, St. Mary's College; M.D. 1958, Stanford
- RUMMEL, RUDOLPH J., *Associate Professor of Political Science*
B.A. 1959, M.A. 1961, Hawaii; PH.D. 1963, Northwestern
- RUSSELL, ARMAND K., *Associate Professor of Music*
B.A. 1953, M.A. 1954, Washington; D.M.A. 1958, Eastman School of Music
- RUSSELL, LOIS R., *Lecturer in Music*
- RUST, VAL DEAN P., *Assistant Professor of Education*
B.A. 1960, Brigham Young; M.A. 1962, Utah; PH.D. 1967, Michigan
- RYANS, DAVID G., *Professor of Education*
B.A. 1932, DePauw; A.M. 1933, PH.D. 1937, Minnesota
- SAAKE, ALVIN C., *Professor of Health and Physical Education*
B.S. 1937, Ithaca College; M.A. 1946, ED.D. 1954, New York
- SACHS, RALPH R., *Professor of Public Health*
M.D. 1936, Wayne; A.B. 1932, M.P.H. 1942, Michigan
- SADLER, JAMES C., *Associate Professor of Geosciences*
B.S. 1941, Tennessee Polytechnic Institute; M.A. 1947, California (Los Angeles)
- SAGAWA, YONFO, *Professor of Horticulture*
B.A. 1950, M.A. 1952, Washington University; PH.D. 1956, Connecticut
- SAIGO, YOSHITO, *Lecturer in Japanese (Hilo)*
B.A. 1931, Hawaii
- SAIKI, PUSY S., *Assistant Professor of Education*
B.ED. 1954, M.ED. 1959, Hawaii
- SAKAI, MAY H., *Instructor in Nursing*
B.S.N. 1953, Marquette; M.S. 1961, Colorado
- SAKAI, ROBERT K., *Professor of History and Asian Studies*
B.A. 1941, California (Berkeley); M.A. 1949, PH.D. 1953, Harvard
- SAKAMAKI, SHUNZO, *Professor of History*
B.A. 1927, M.A. 1928, Hawaii; PH.D. 1939, Columbia
- SAKAMOTO, SOICHI, *Assistant Professor of Health and Physical Education*
B.ED. 1948, Hawaii
- SAKSENA, S. K., *Professor of Philosophy*
B.A. 1925, M.A. 1927, Allahabad; PH.D. 1939, London
- SAKUMOTO, RAYMOND E., *Assistant Professor of Sociology*
B.A. 1955, M.A. 1957, Hawaii; PH.D. 1965, Northwestern
- SANBORN, DONALD A., *Assistant Professor of Education*
B.A. 1957, Pomona; M.S. 1959, Indiana; PH.D. 1967, Claremont Graduate School
- SANDERSON, RICHARD A., *Associate Professor of Education*
B.A. 1952, Cornell; M.A. 1958, PH.D. 1961, Southern California
- SANDERSON, SARAH E., *Assistant Professor of Speech*
A.B. 1953, Fairmont State; M.A. 1955, Bowling Green State; PH.D. 1965, Southern California
- SANFORD, WALLACE G., *Professor of Agronomy*
B.A. 1947, Pomona; M.S. 1949, Maryland; PH.D. 1952, California (Los Angeles)
- SARAYDAR, ALMA C., *Assistant Professor of French*
B.A. 1945, California (Los Angeles); M.A. 1953, Chicago; CERTIFICATE 1952, Paris; PH.D. 1965, California (Berkeley)
- SASAKI, KYOHEI, *Associate Professor of Business Analysis and Statistics*
B.A. 1944, Tokyo; PH.D. 1954, Columbia
- SATO, ESTHER M. T., *Assistant Professor of Education*
B.A. 1938, William Jewell College; M.A. 1939, Columbia
- SATO, JESSIE J., *Assistant Professor of Education*
B.S. 1944, Hawaii; M.A. 1950, Columbia
- SATO, MAMORU, *Instructor in Art*
B.A. 1963, M.F.A. 1965, Colorado
- SATO, MASAHITO, *Instructor in Japanese*
B.A. 1963, International Christian; M.A. 1966, Indiana
- SATO, YAEKO, *Instructor in Japanese*
B.A. 1953, Waseda
- SAVAGE, NANCY G., *Instructor of Nursing*
B.S. 1955, College of Mt. St. Joseph; M.S. 1961, Catholic University
- SAVILLE, ALLISON W., *Associate Professor of History*
B.A. 1953, PH.D. 1963, Washington; M.A. 1954, Columbia
- SCHAAFMA, HENRY M., JR., *Assistant Professor of English as Second Language*
B.A. 1958, Michigan; M.A. 1965, Leeds

- SCHALEGER, LARRY L., *Associate Professor of Chemistry*
B.A. 1957, Grinnell; PH.D. 1961, Minnesota
- SCHNEIDER, SUZANNE, *Acting Assistant Professor of Nursing*
A.B. 1949, Stanford; M.S.W. 1952, California (Berkeley)
- SCHREIBER, WILLIAM F., *Assistant Professor of German*
B.A. 1961, Colorado; M.A. 1962, PH.D. 1967, Southern California
- SCHUEER, PAUL J., *Professor of Chemistry*
B.S. 1943, Northeastern; M.A. 1947, PH.D. 1950, Harvard
- SCHOFIELD, EDWARD T., *Professor of Library Studies*
B.S.ED. 1933, B.S. in L.S. 1950, New Jersey State Teachers; M.A. 1947, ED.D. 1954, New York
- SCHULTZ, LUCILLE M., *Instructor in English*
A.B. 1964, Ursuline College; M.A. 1966, Detroit
- SCHUTZ, ALBERT J., *Assistant Professor of Linguistics*
B.S. 1948, Purdue; PH.D. 1962, Cornell
- SCHWADRON, ABRAHAM A., *Professor of Music*
ED.B. 1953, Rhode Island; M.A. 1957, Connecticut; MUS.A.D. 1962, Massachusetts
- SCHWANEKAMP, MARY S., *Instructor in English*
B.S. 1965, Cincinnati; M.A. 1967, Arkansas
- SCHWARTZ, ARNOLD D., *Professor of Public Health*
A.B. 1947, California (Berkeley); M.D. 1950, California (San Francisco); M.P.H. 1956, Harvard
- SCHWITTERS, SYLVIA, *Instructor in Human Development*
B.S. 1964, Hawaii; M.S. 1965, Illinois
- SCOTT, FRANK S., *Professor of Agricultural Economics*
B.S. 1943, Oregon State; M.A. 1947, Missouri; PH.D. 1953, Illinois
- SCOTT, ROBERT L., *Assistant Professor of English*
B.S. 1950, Willamette; M.A. 1953, Hawaii
- SEFF, KARL, *Assistant Professor of Chemistry*
B.S. 1949, California (Berkeley); PH.D. 1964, M.I.T.
- SEGLIM, GLENN A., *Instructor in English as Second Language*
B.A. 1958, Washington
- SEICHI, GEORGE M., *Instructor in Health and Physical Education*
B.ED. 1961, Hawaii; M.S. 1964, Indiana
- SEIDL, LUDWIG, *Assistant Researcher in Ocean Engineering*
DIPL. ING. 1964, Vienna University of Technology
- SEIFERT, FRIEDRICH, *Associate Professor of Religion*
TH.D. 1959, Pacific School of Religion
- SEO, KAP-KYUNG, *Associate Professor of Business Economics and Statistics*
B.A. 1956, South Carolina; M.B.A. 1957, Xavier; PH.D. 1960, Cincinnati
- SEYMOUR, RICHARD K., *Professor of German*
B.A. 1951, M.A. 1952, Michigan; PH.D. 1956, Pennsylvania
- SHAPIRO, MICHAEL J., *Assistant Professor of Political Science*
B.A. 1962, Tufts; M.A. 1964, Hawaii; PH.D. 1966, Northwestern
- SHAPIRO, SAMUEL I., *Assistant Professor of Psychology*
B.A. 1961, Brooklyn College; A.M. 1962, Michigan; M.S. 1965, PH.D. 1966, Pennsylvania State
- SHARMA, JAGDISH P., *Assistant Professor of History*
B.A. 1955, Agra; B.A. 1959, School of Oriental & African Studies (London); PH.D. 1962, London
- SHARP, HAROLD S., *Associate Professor of Library Studies*
B.S. 1954, M.A.L.S. 1957, Indiana
- SHAW, RALPH R., *Professor of Library Studies*
B.A. 1928, Western Reserve; B.S. 1929, M.S. 1931, Columbia; PH.D. 1950, Chicago
- SHELLENBERGER, F. A., *Junior Agricultural Engineer*
B.S. 1964, Oklahoma State
- SHEN, YAO, *Professor of English and Asian Studies*
B.A. 1935, Yenching; M.A. 1938, Mills; ED.D. 1944, Michigan
- SHERMAN, G. DONALD, *Senior Professor of Soil Science*
B.S. 1933, M.S. 1937, Minnesota; PH.D. 1940, Michigan State
- SHERMAN, MARTIN, *Professor of Entomology*
B.S. 1941, M.S. 1943, Rutgers; PH.D. 1948, Cornell
- SHIBATA, SHOJI, *Associate Professor of Pharmacology*
M.D. 1952, Nara Medical College; PH.D. 1957, Kyoto
- SHIMAMOTO, YOSHIKO, *Instructor of Nursing*
B.S. 1958, M.P.H. 1966, Minnesota
- SHIMAOKA, HELENE R., *Assistant in Research*
B.B.A. 1954, Hawaii
- SHINODA, MINORU, *Professor of History*
B.A. 1937, Hawaii; PH.D. 1957, Columbia
- SHUPE, JOHN W., *Professor of Civil Engineering*
B.S. 1948, Kansas State; M.S. 1951, California; PH.D. 1958, Purdue
- SIEGL, BARBARA Z., *Assistant Professor of Microbiology*
B.A. 1960, Chicago; M.A. 1963, Columbia; PH.D. 1966, Yale
- SIEGEL, SANFORD M., *Professor of Botany*
M.S. 1950, PH.D. 1953, Chicago
- SIEGENTHALER, CARLA, *Lecturer in Geography*
B.A. 1964, Western Reserve
- SIKKEMA, MILDRED, *Professor of Social Work*
M.S.S. 1939, Smith; B.S. 1937, PH.D. 1964, Chicago
- SILVA, JAMES A., *Assistant Soil Scientist*
B.S. 1951, M.S. 1959, Hawaii; PH.D. 1964, Iowa State
- SIMPSON, THOMAS, *Associate Professor of Medicine (Okinawa)*
B.S. 1940, Northwestern; M.D. 1943, Johns Hopkins

- SIMSON, GEORGE K., *Assistant Professor of English*
A.B. 1952, Whitman; M.A. 1957, Washington State; PH.D. 1963, Minnesota
- SINCLAIR, MARJORIE P., *Assistant Professor of English*
B.A. 1935, M.A. 1937, Mills
- SINTON, WILLIAM M., *Professor of Physics and Astronomy*
A.B. 1949, PH.D. 1953, Johns Hopkins
- SITTLER, RICHARD C., *Associate Professor of English as Second Language*
B.A. 1946, M.A. 1948, PH.D. 1952, Iowa
- SIU, JAMES K. M., *Assistant Professor of Mathematics*
B.A. 1953, M.A. 1956, Hawaii
- SKINSNES, OLAF, *Professor of Pathology*
B.A. 1939, St. Olaf; M.S. 1946, M.D. 1947, PH.D. 1947, Chicago
- SLATER, MARY R., *Instructor in English*
B.A. 1960, Connecticut College; M.A. 1961, Chicago
- SMITH, ALBERT C., *Gerrit Parmile Wilder Chair in Botany*
B.A. 1926, Columbia College; PH.D. 1933, Columbia
- SMITH, ALBERT C., *Assistant Professor of Biology (Hilo)*
B.A. 1956, California (Los Angeles); PH.D. 1966, California (Irvine)
- SMITH, BARBARA B., *Professor of Music*
B.A. 1942, Pomona; M.M. 1943, Eastman School of Music
- SMITH, CLIFFORD W., *Assistant Professor of Botany*
B.S.C. (Hon.) 1962, College of North Wales; M.SC. 1963, PH.D. 1965, Manchester
- SMITH, ELSIE R., *Associate Professor of Professional Nursing*
B.S. 1940, M.S. 1942, Idaho
- SMITH, HARRY A., *Lecturer in Law*
B.S. 1929, J.D. 1932, New York; M.A. 1962, Michigan State
- SMITH, JAMES R., JR., *Instructor in Education*
B.A. 1957, M.A. 1959, Wyoming
- SMITH, MAX B., *Lecturer in Animal Science*
D.V.M. 1946, Colorado State
- SMUCK, EDWARD THOMAS, *Associate Professor of History (Hilo)*
B.A. 1946, Chico; M.A. 1947, PH.D. 1952, California (Berkeley)
- SOHL, KATHRYN E., *Instructor in English*
B.A. 1964, Oberlin; M.A. 1966, Chicago
- SOLHEIM II, WILHELM G., *Professor of Anthropology*
B.A. 1947, Wyoming; M.A. 1949, California; PH.D. 1959, Arizona
- SOLOMON, MARGARET C., *Assistant Professor of English*
B.A. 1960, Hawaii; M.A. 1961, California (Berkeley); PH.D. 1967, Claremont
- SONODA, PHYLLIS, *Instructor in Medical Technology*
B.S. 1952, Hawaii; M.S. 1952, Northwestern
- SOOD, SATYA PAL, *Associate Professor of Chemistry (Hilo) (on leave)*
B.S. 1942, Punjab; A.P.I. 1952, Acton Technical College; M.S. 1956, State University of N.Y.; PH.D. 1963, Hawaii
- SOONG, CHARLES B., JR., *Instructor in English as Second Language*
B.A. 1937, Yenching (China); M.A. 1947, Claremont
- SPENCER, CHARLES H., *Professor of Accounting*
B.S. 1936, M.S. 1941, D.B.A. 1953, Indiana
- SPENCER, MARGARET I., *Assistant Professor of Chinese*
B.A. 1952, Minnesota; M.A. 1961, Michigan
- SPIELMANN, HEINZ, *Associate Professor of Agricultural Economics*
B.A. 1949, M.A. 1954, Washington; PH.D. 1962, Washington State
- SPRINGEL, NONA F., *Instructor in Social Science*
B.A. 1951, Georgia; M.ED. 1964, Hawaii
- STAATS, ARTHUR W., *Professor of Psychology and Educational Psychology*
B.A. 1949, M.A. 1953, PH.D. 1956, California (Los Angeles)
- STALKER, JOHN N., *Professor of History*
B.A. 1943, Wooster; M.A. 1948, PH.D. 1950, Wisconsin
- STANDAL, BLUEBELL R., *Assistant Professor of Foods and Nutrition*
B.S. 1942, Calcutta; M.S. 1948, PH.D. 1952, California
- STANLEY, RICHARD W., *Associate Professor of Animal Science*
B.S. 1956, M.S. 1958, PH.D. 1961, Pennsylvania State
- STANLEY, WILLIAM E., *Lecturer in Environmental Health and Sanitary Engineering*
B.S. 1912, Kansas State; M.S. 1916, Purdue
- STAROSTA, STANLEY, *Acting Assistant Professor of Linguistics*
B.A. 1961, Wisconsin
- STASACK, EDWARD A., *Assistant Professor of Art*
B.F.A. 1955, M.F.A. 1956, Illinois
- STAUFFER, ROBERT B., *Professor of Political Science*
B.S. 1942, Pa. State Teachers College (West Chester); M.S. 1947, Oklahoma; PH.D. 1954, Minnesota
- STEAHR, THOMAS E., *Assistant Professor of Sociology*
B.A. 1959, California; M.A. 1965, California State
- STEIGER, WALTER R., *Professor of Physics*
B.S. 1948, M.I.T.; M.S. 1950, Hawaii; PH.D. 1953, Cincinnati
- STEIN, BURTON, *Professor of History*
B.A. 1948, Illinois; M.A. 1953, PH.D. 1958, Chicago
- STELLMACHER, HERBERT B., *Assistant Professor of Marketing*
B.A. 1935, Texas; M.B.A. 1952, Southern Methodist
- STEMPEL, DANIEL, *Professor of English*
B.A. 1941, College of the City of N.Y.; M.A. 1942, PH.D. 1949, Harvard

- STENGER, VICTOR J., *Assistant Professor of Physics*
B.S. 1936, Newark; M.S. 1939, PH.D. 1963,
California (Los Angeles)
- STERNSTEIN, LARRY, *Assistant Professor of
Geography*
B.S. 1935, City College of N.Y.; M.A. 1958,
Syracuse
- STEVENS, ROBERT D., *Professor of Library Studies*
A.B. 1942, Syracuse; B.S. 1947, Columbia;
M.A. 1954, PH.D. 1965, American
- STEVICK, RUTH A., *Instructor in English*
B.A. 1965, M.A. 1967, Wayne State
- STEWART, DONALD L., *Instructor in Philosophy*
B.A. 1951, Temple; M.A. 1962, California
(Berkeley)
- STILLIANS, BRUCE M., *Assistant Professor of
English*
B.A. 1952, M.A. 1955, PH.D. 1962, Iowa State
- STONER, GERALDINE, *Assistant Professor of
Foods and Nutrition*
B.S. 1960, M.S. 1963, Iowa
- STOUT, WILLIAM T., JR., *Assistant Professor of
Mathematics*
B.S. 1961, Southwest Missouri State; M.S. 1963,
Illinois
- STOUTEMYER, DAVID R., *Instructor in General
Engineering*
B.S. 1963, California Institute of Technology;
S.M. 1965, M.I.T.
- STRAUSS, FREDERICK B., *Assistant Professor of
Mathematics*
B.A. 1950, M.A. 1962, PH.D. 1964, California
(Los Angeles)
- STRETT, JOHN M., *Associate Professor of
Geography*
B.A. 1948, PH.D. 1960, California (Berkeley)
- STRoup, EDWARD D., *Associate Oceanographer*
B.A. 1956, Hawaii; M.A. 1958, Johns Hopkins
- STUEBE, CAROL, *Instructor in German*
B.A. 1966, Wisconsin
- STUEBER, RALPH K., *Associate Professor of
Education*
B.S. 1950, M.S. 1955, PH.D. 1961, Wisconsin
- STUIVER, WILLEM, *Professor of Mechanical
Engineering*
IR. 1951, Delft; PH.D. 1960, Stanford
- SUEHIRO, RICHARD Y., *Assistant Professor of
Public Health*
B.A. 1949, Hawaii; M.A. 1951, Indiana;
M.P.H. 1962, Michigan
- SUGITA, HIROSHI, *Instructor in Japanese*
B.A. 1964, Tokyo University of Foreign Studies;
M.A. 1966, International Christian
- SUINN, RICHARD M., *Associate Professor of
Psychology*
B.A. 1955, Ohio State; M.A. 1957, PH.D. 1959,
Stanford
- SUMMERSGILL, TRAVIS L., *Professor of English*
B.A. 1939, Bucknell; M.A. 1940, PH.D. 1948,
Harvard
- SUTTON, GEORGE H., *Professor of Geophysics*
B.S. 1950, Muhlenberg; M.A. 1953, PH.D. 1957,
Columbia
- SWANN, FLOYD T., *Assistant Professor of
Economics and Business (Hilo)*
B.S. 1951, M.B.A. 1955, Miami
- SWIFT, DAVID W., *Assistant Professor of
Sociology*
A.B. 1950, M.A. 1960, PH.D. 1967, California
- SWINDALE, LESLIE D., *Professor of Soil Science*
B.S. 1948, M.S. 1950, Victoria University
College; PH.D. 1955, Wisconsin
- SZILARD, RUDOLPH S., *Professor of Civil
Engineering*
Grad. C.E. 1942, Dipl. Eng. (M.S.) 1943,
Royal Tech., Doctor of Eng., 1962, Technical
Univ. of Stuttgart
- TABB, DAVID, *Acting Assistant Professor of
Political Science*
B.A. 1962, Antioch; M.A. 1963, Massachusetts;
PH.D. 1968, N. Carolina
- TACKE, CHARLOTTE, *Assistant Professor of Nursing*
B.S.N.E. 1947, M.S.N.S.A. 1960, Minnesota
- TAKAGAKI, TETSUO, *Instructor in Japanese*
B.A. 1957, Wakayama College; M.A. 1966,
San Francisco State
- TAKAHASHI, CHARLENE, *Instructor in Home
Economics*
B.S. 1962, Westmar College (Iowa); M.S. 1966,
Nebraska
- TAKAHASHI, MAKOTO, *Associate Professor of
Agriculture*
B.S. 1928, M.S. 1937, Hawaii
- TAKAHASHI, YOSHI, *Instructor in Japanese*
B.A. 1938, Tokyo Musical Academy; M.A. 1952,
San Francisco Theology Seminary
- TAKASAKI, RICHARD S., *Professor of Social Work*
B.S. 1940, Hawaii; M.A. 1949, Columbia;
M.P.A. 1960, Harvard
- TAKASE, AYAKO M., *Assistant Professor of
Social Work*
B.A. 1934, Hawaii; M.S. 1941, Columbia
- TAKEUCHI, KEIKO, *Instructor in Japanese*
B.A. 1957, Ochanomizu Women's University;
M.A. 1965, San Francisco State College
- TAM, EDWIN, *Associate Professor of Social Work*
B.A. 1950, M.S.W. 1956, Hawaii
- TAMASHIRO, MINORU, *Associate Professor of
Entomology*
B.S. 1951, M.S. 1954, Hawaii; PH.D. 1960,
California
- TAOKA, GEORGE T., *Assistant Professor of
Civil Engineering*
B.S. 1958, Oregon State; M.S. 1960, PH.D. 1964,
Illinois
- TATFISHI, HOOVER Y., *Instructor in Japanese*
B.A. 1957, Hawaii
- TAYLOR, H. LELAND, *Instructor in English*
A.B. 1963, Pacific Christian; M.A. 1965,
Kansas State College (Fort Hays)
- TAYLOR, MARGARET G., *Instructor in Library
Studies*
B.A. 1952, M.A. 1961, Michigan; M.L.S. 1962,
California (Los Angeles)
- TAYLOR, PATRICIA L., *Instructor in Medical
Technology*
B.S. 1958, Indiana

- TAWIL, JACK, *Acting Assistant Professor of Economics*
A.B. 1960, Harvard
- TEEVAN, T. FOSTER, *Assistant Professor of English*
B.A. 1936, Puget Sound; M.A. 1949, PH.D. 1957, Washington
- TEMPLE, HUNTER, *Lecturer in Economics*
B.A. 1959, Colgate; M.A. 1967, Purdue
- TERAZAKI, T. DAVID, *Professor of Art*
Equiv. to B.A. 1944, Equiv. to M.E. 1947, Tokyo
- TESTER, ALBERT L., *Senior Professor of Zoology*
B.A. 1931, M.A. 1932, PH.D. 1936, Toronto
- TERN, KENNETH I., *Acting Assistant Professor of Chinese*
B.A. 1961, Wisconsin
- THOMPSON, DONNIS H., *Assistant Professor of Health and Physical Education*
B.S. 1955, M.S. 1959, George Williams College; Ed.D. 1967, Colorado State College
- THOMPSON, LAURENCE C., *Professor of Linguistics*
B.A. 1949, Middlebury; M.A. 1950, PH.D. 1954, Yale
- THOMPSON, PHYLLIS H., *Assistant Professor of English*
B.A. 1948, Connecticut College; M.A. 1949, Duke; PH.D. 1958, Wisconsin
- THOMPSON, WILLIAM Y., *Lecturer in Engineering (Hilo)*
B.S. 1950, Hawaii
- TILTON, LEAH, *Instructor in Nursing*
B.S. 1964, Hunter; M.A. 1967, New York
- TINKER, SPENCER W., *Associate Researcher in Education*
B.S. 1931, Washington; M.S. 1934, Hawaii
- TINNISWOOD, WILLIAM W., *Professor of Engineering*
B.S. 1938, California; M.S. 1948, Idaho
- TOKUYAMA, GEORGE H., *Lecturer in Public Health*
B.A. 1947, Hawaii; M.P.H. 1956, California
- TOM, ALBERT O. Y., *Lecturer in Environmental Health and Sanitary Engineering*
B.S. 1944, Hawaii; M.S. 1948, S.C.D. 1951, M.I.T.
- TOM, CHOW LOY, *Assistant Professor of Education*
B.ED. 1941, Hawaii; B.S. 1945, M.S. 1953, Illinois
- TOM, K. S., *Lecturer in Professional Nursing*
M.D. 1939, Loyola
- TOMINAGA, HENRY K., *Assistant Professor of Health and Physical Education*
B.S. 1953, Springfield; M.S. 1954, Pennsylvania State; Ed.D. 1964, Colorado State College
- TOPHAM, HELEN A., *Assistant Professor of English*
B.A. 1935, Rutgers; M.A. 1950, M.F.A. 1956, Hawaii
- TOPPING, DONALD M., *Assistant Professor of Linguistics*
A.B. 1954, M.A. 1956, Kentucky; PH.D. 1963, Michigan State
- TOWNSEND, JAMES T., *Assistant Professor of Psychology*
B.A. 1961, Fresno State; PH.D. 1966, Stanford
- TOWNSLEY, SIDNEY J., *Professor of Marine Zoology*
B.A. 1948, California; M.S. 1950, Hawaii; PH.D. 1954, Yale
- TOYAMA, JEAN M., *Instructor in Education*
B.A. 1964, Hawaii; M.A. 1967, Purdue
- TRAPIDO, JOEL, *Professor of Drama and Theatre*
B.A. 1935, PH.D. 1942, Cornell; M.A. 1936, New York
- TRIFONOVITCH, GREGORY I., *Acting Assistant Professor in English as Second Language*
B.A. 1960, Wheaton College
- TRINE, JOE ARDEN, *Assistant Professor of Accounting*
B.B.A. 1959, M.B.A. 1960, Wisconsin; C.P.A. 1963, Illinois
- TROXELL, MARY, *Associate Professor of Fashion Design and Merchandising*
B.S. 1931, Iowa; M.S. 1962, New York
- TRUBITT, ALLEN ROY, *Assistant Professor of Music*
B.M.ED. 1953, M.M.ED. 1954, Roosevelt; D.MUSIC 1964, Indiana
- TRUJILLO, EDUARDO E., *Assistant Professor of Plant Pathology*
B.S.A. 1956, M.S. 1957, Arkansas; PH.D. 1962, California
- TSUBOI, PATRICIA F., *Instructor in English as Second Language*
B.A. 1962, Redlands; M.A. 1966, Hawaii
- TSUI, MILLIE, *Lecturer in Library Studies*
A.A. 1947, Bakersfield College; B.A. 1954, M.L.S. 1955, California (Berkeley)
- TSUZAKI, STANLEY M., *Assistant Professor of Linguistics*
B.A. 1952, Hawaii; M.A. 1954, Colorado State; M.S. 1961, PH.D. 1963, Michigan
- TUAN, SAN FU, *Professor of Physics*
B.A. 1954, M.A. 1958, Oxford (England); PH.D. 1958, California (Berkeley)
- TULL, CHRISTINE L., *Associate Professor of Home Economics Education*
B.S. 1928, William and Mary; M.A. 1949, New York
- TUNG, TZE-KUEI, *Associate Professor of Civil Engineering*
B.S. 1946, M.I.T.; M.S. 1948, California (Berkeley); PH.D. 1964, California (Los Angeles)
- TURNBULL, MURRAY, *Professor of Art*
B.F.A. 1941, Nebraska; M.A. 1949, Denver
- TUTHILL, LEONARD D., *Professor of Entomology*
B.A. 1929, M.A. 1930, Kansas; PH.D. 1941, Iowa State
- TYSON, KATHERINE C., *Assistant Professor of Social Work*
B.A. 1938, Hawaii; M.S. 1946, Pittsburgh
- UCHIMA, FLOYD Y., *Assistant Professor of Music*
B.ED. 1950, Hawaii; M.MUS.ED. 1951, Northwestern
- UDA, LOWELL M., *Instructor in English*
B.A. 1962, Utah; M.F.A. 1967, Iowa
- UEHARA, BETTY K., *Assistant Professor of Education*
B.ED. 1947, Hawaii; M.A. 1958, New York
- UEHARA, GORO, *Associate Professor of Soils*
B.S. 1931, M.S. 1955, Hawaii; PH.D. 1959, Michigan State

- UMURA, HERBERT S., *Assistant Professor of Pathology*
A.B. 1953, Washington; M.D. 1960, Nebraska
- UMBEL, OMA, *Associate Professor of Fashion Design and Merchandising*
B.S. 1932, West Virginia; M.S. 1933, New York
- UNO, HIROBUMI, *Lecturer in Social Work*
B.A. 1942, Hawaii; M.S.W. 1951, Pittsburgh; PH.D. 1966, Chicago
- UPADHYA, JYOTSNA, *Instructor of Nursing*
B.S. 1956, M.S. 1961, Delhi
- URATA, UKIO, *Assistant Soil Scientist*
B.S. 1951, M.S. 1953, Hawaii; PH.D. 1959, Cornell
- UYEHARA, YUKUO, *Professor of Japanese*
B.A. 1931, M.A. 1936, Hawaii
- VALENTIN, PAT, *Lecturer in Music*
- VAN DEGRIFT, PAUL D., *Associate Professor of Health and Physical Education*
D.O. 1939, College of Osteopathic Physicians and Surgeons; M.D. 1962, California College of Medicine
- VAN HOFTEN, ELLEN, *Lecturer in History*
A.B. 1964, A.M. 1965, Stanford
- VAN NIEL, ROBERT, *Professor of History; Chairman, Southeast Asia Area Committee*
B.A. 1947, M.A. 1948, Ohio State; PH.D. 1954, Cornell
- VAN WEEI, PIETER B., *Professor of Zoology*
PH.D. 1937, State University of Utrecht
- VASCONCELLOS, HENRY B., *Associate Professor of Health and Physical Education*
B.A. 1941, M.A. 1959, San Jose State
- VAUGHN, STEPHANIE R., *Instructor in English*
B.A. 1965, M.A. 1967, Ohio State
- VAUGHT, RAYMOND, *Professor of Music*
B.A. 1938, M.A. 1940, Idaho; M.M. 1946, Eastman School of Music; PH.D. 1959, Stanford
- VELLA, DOROTHY B., *Instructor in English*
B.A. 1941, Western Reserve; M.A. 1942, Radcliffe
- VILLA, WALTER F., *Professor of History*
B.A. 1947, M.A. 1950, PH.D. 1954, California
- VEYLUPEK, MAJ. JOHN A., *Associate Professor of Aerospace Studies*
B.S. 1954, Nebraska
- VIGLIELMO, VALDO H., *Professor of Japanese*
B.A. 1948, M.A. 1952, PH.D. 1956, Harvard
- VINE, RICHARD W., *Professor of Music*
B.M. 1936, St. Olaf College; M.M. 1938, MacPhail College of Music
- VON BEKESY, GEORG, *Hawaiian Telephone Company Chair in Science*
PH.D. 1923, Budapest; M.D. (Hon.) 1955, Wilhem; M.D. (Hon.) 1959, Berne; D.Sc. (Hon.) 1965, Pennsylvania
- VOULGARPOULOS, EMMANUEL, *Associate Professor of Public Health*
B.S. 1952, Tufts; M.D. 1957, Louvain; M.P.H. 1962, Johns Hopkins
- WAKITA, MINORU, *Instructor in Japanese*
B.A. 1960, Jochi University
- WALLRABENSTEIN, PAUL P., *Lecturer in Agricultural Economics*
PH.D. 1941, Ohio State
- WALSH, PAUL A., *Assistant Professor of Education*
B.S. 1939, M.E.D. 1962, C.A.G.S. 1963, ED.D. 1966, Boston
- WALSH, WINIFRED A., *Professor of Social Work*
B.S. 1936, Nevada; M.A. 1943, PH.D. 1965, Chicago
- WANG, CHEN, *Instructor in Chinese*
B.A. 1937, National Normal; M.A. 1956, Washington
- WANG, JAW-KAI, *Associate Professor of Agricultural Engineering*
B.S. 1953, National Taiwan; M.S. 1956, PH.D. 1958, Michigan State
- WARGO, ROBERT J. J., *Acting Assistant Professor of Philosophy*
B.A. 1962, California (Los Angeles); M.A. 1963, Michigan
- WARNER, ROBERT M., *Professor of Horticulture*
B.A. 1930, Ohio Wesleyan; M.S. 1937, PH.D. 1940, Iowa State
- WARSH, LOUIS P., *Assistant Professor of History (Hilo)*
A.B. 1947, California (Santa Barbara); M.A. 1950, California (Berkeley)
- WATANABE, KAREN, *Lecturer in Spanish*
B.A. 1965, Hawaii
- WATANABE, KINICHI, *Senior Professor of Physics*
B.S. 1936, PH.D. 1940, California Institute of Technology
- WATANABE-DAUFER, MICHAEL S., *Professor of Physics*
B.S. 1933, DR.SC. 1940, Tokyo; DR.SC. 1935, Paris
- WATERS, WILLIAM L., *Instructor in Chemistry*
B.A. 1961, Kenyon College
- WATSON, DAVID L., *Associate Professor of Psychology*
B.A. 1959, Vanderbilt; M.S. 1961, PH.D. 1963, Yale
- WATSON, DONALD P., *Professor of Horticulture*
B.S.A. 1934, Toronto; M.S. 1937, London; PH.D. 1948, Cornell
- WATSON, LORINDA E., *Assistant Professor of Speech*
B.A. 1934, Washington; M.A. 1958, Hawaii
- WATT, IAN P., *Citizen's Chair in English Literature (Fall 1968)*
M.A. 1928, McGill; DR.-ES-LETTERS 1932, Paris
- WAUGH, JOHN L. T., *Associate Professor of Chemistry*
B.S.C. 1943, PH.D. 1949, Glasgow; A.R.I.C. 1943, London
- WAYMAN, OLIVER, *Professor of Animal Science*
B.S. 1947, Utah State; PH.D. 1951, Cornell
- WEAVER, HERBERT B., *Professor of Psychology*
B.A. 1933, M.A. 1934, PH.D. 1942, Pennsylvania
- WEAVER, PAUL F., JR., *Associate Professor of Electrical Engineering*
B.S.E.E. 1946, M.E.E. 1952, PH.D. 1959, Cornell
- WEDDLE, LAUREL E., *Assistant Professor of Foods and Nutrition*
B.S. 1939, Texas Tech. College; M.S. 1954, Texas

- WEGNER, ELDON L., *Assistant Professor of Sociology*
B.A. 1963, Redlands; M.A. 1965, PH.D. 1967, Wisconsin
- WEINBAUM, CARL M., *Associate Professor of Mathematics*
B.S. 1958, Queens College; A.M. 1960, Harvard; PH.D. 1963, New York
- WEINBERG, JERRY L., *Assistant Professor of Astrophysics*
B.A. 1958, St. Lawrence; PH.D. 1963, Colorado
- WEINSTEIN, MICHAEL G., *Assistant Professor of Sociology*
PH.B. 1963, Wayne State; M.A. 1966, Harvard
- WELCH, JOHN P., *Instructor in English*
B.A. 1962, Contra Costa College, B.A. 1965, San Francisco State College, M.F.A. 1967, Iowa
- WELD, EVELYN B., *Acting Assistant Professor of European Languages (Hilo) (on leave)*
B.A. 1940, Hofstra; M.A. 1941, New York
- WELDEN, TERRY, *Assistant Professor of Speech*
B.A. 1954, West Virginia; M.A. 1957, Pittsburgh; PH.D. 1961, Michigan State
- WELDON, EDWARD J., JR., *Associate Professor of Electrical Engineering*
B.S.E.E. 1958, Manhattan College; M.S.E.E. 1960, PH.D. 1963, Florida
- WELFEN, LAWRENCE T., *Associate Professor of English*
B.A. 1949, M.A. 1950, PH.D. 1959, Washington
- WELLINGTON, TAEKO I., *Instructor in Japanese*
B.A. 1950, Keio (Japan); M.S.J. 1954, Northwestern
- WENKAM, NAO, *Assistant Professor of Home Economics*
B.S. 1948, M.S. 1950, Chicago
- WENSKA, WALTER P., *Instructor in English*
B.A. 1964, M.A. 1966, Hawaii
- WEST, LINDA P., *Lecturer in Business Economics and Statistics*
B.S.ED. 1961, Central State College; M.S. 1966, Oklahoma State
- WEST, STANLEY, *Professor of Library Studies*
A.B. 1933, California (Berkeley); L.L.B. 1938, Florida; B.S. in L.S. 1942, Columbia
- WESTCOTT, NINA A., *Assistant Professor of Education*
B.A. 1958, St. Mary's College; M.A. 1962, De Paul; PH.D. 1967, Arizona
- WESTON, DONNA M., *Instructor of Nursing*
B.S. 1954, Utah; M.N. 1965, Washington
- WHAN, FOREST L., *Visiting Professor of Speech*
B.S. 1928, Kansas State; A.M. 1931, Illinois; PH.D. 1938, Iowa
- WHEELWRIGHT, JESSIE, *Lecturer in Library Studies*
B.A. 1934, California (Berkeley); M.S.L.S. 1950, Simmons
- WHITE, GEORGE, *Assistant Professor in Nursing*
B.S. 1950, M.ED. 1950, Texas
- WHITE, JOHN A., *Professor of History*
B.A. 1933, California; M.A. 1940, Columbia; PH.D. 1947, Stanford
- WHITE, JOHN E., *Instructor in History (Hilo)*
B.S. ED. 1952, Bloomsburg State; B.A. 1961, Maryland; M.A. 1967, Boston
- WHITEHILL, ARTHUR M., *Professor of International Management*
B.S. 1942, M.A. 1944, PH.D. 1945, Virginia
- WHITMAN, NANCY C., *Associate Professor of Education*
A.B. 1954, A.M. 1956, PH.D. 1961, Illinois
- WHITTOW, G. CAUSEY, *Professor of Physiology*
B.SC. 1952, England; PH.D. 1957, Malaya
- WIEDERHOLT, NED B., *Lecturer in Public Health*
B.A. 1950, B.ARCH. 1952, Minnesota; M.ARCH. 1954, Harvard
- WIENS, HEROLD J., *Professor of Geography and Director of Asian Studies*
B.A. 1935, California; M.A. 1947, PH.D. 1949, Michigan
- WIESE, LOWELL, *Associate Professor of Pediatrics (Okinawa)*
B.A. 1948, Valparaiso (Indiana); M.D. 1959, Tennessee
- WILEY, BONNIE, *Assistant Professor of English and Journalism*
B.A. 1948, Washington; M.S. 1957, Columbia; PH.D. 1965, Southern Illinois
- WILEY, WILLIAM J., *Instructor in Education*
B.A. 1946, Southern California; M.A. 1963, Chapman College; M.A. 1967, Hawaii
- WILKENS, FREDERICK J., *Acting Assistant Professor of Spanish*
B.A. 1959, Redlands; M.A. 1965, California (Los Angeles)
- WILKINSON, C. LOUISE, *Instructor in English*
B.A. 1966, Whitman College; M.A. 1967, Chicago
- WILL, RICHARD Y., *Assistant Professor of Education*
B.A. 1952, Minnesota; B.ED. 1957, M.ED. 1960, Hawaii
- WILLIAMS, DOROTHY D., *Instructor of Nursing*
B.S. 1955, New York; M.S.N. 1961, Catholic
- WILLIAMS, JANE, *Instructor in English*
B.A. 1965, M.A. 1967, Michigan
- WILLIAMS, JOHN A., *Assistant Professor of Civil Engineering*
B.S. 1952, M.S. 1954, PH.D. 1965, California
- WILLIAMSON, JACK, *Assistant Professor of Mathematics*
B.S. 1962, M.S. 1963, Carnegie Institute of Technology; PH.D. 1967, Wisconsin
- WILSON, C. PEARS, *Professor of Agricultural Economics*
B.S. 1938, M.S. 1940, Kansas State; PH.D. 1958, California
- WILSON, JAMES C., *Assistant Professor of English as Second Language*
B.A. 1955, Vanderbilt; M.A. 1959, ED.S. 1966, George Peabody College for Teachers
- WILSON, WILLARD, *Senior Professor of English*
B.A. 1929, LL.D. (Hon.) 1961, Occidental; M.A. 1930, Columbia; PH.D. 1939, Southern California
- WINCHESTER, BETTY JO, *Acting Assistant Professor of History*
B.A. 1961, Baylor; M.A. 1964, Indiana
- WINKLER, RALPH, *Assistant Professor of Music*
B.MUS. 1959, Eastman School of Music

- WINNICK, THEODORE, *Professor of Biochemistry*
B.A. 1935, California (Los Angeles); PH.D.
1939, California
- WINNIE, JOHN A., *Assistant Professor of
Philosophy*
B.A. 1962, New York State (Albany)
- WINTER, THOMAS N., *Acting Assistant Professor
of Classics*
B.A. 1964, Michigan State; M.A. 1965,
Northwestern
- WINTERS, LEE E., JR., *Associate Professor of
English*
B.A. 1947, Michigan; M.A. 1952, PH.D. 1956,
California
- WINTERS, LILY C., *Associate Professor of Chinese*
B.A. 1937, Yenching; M.A. 1950, Hawaii
- WISE, JOHN, *Professor of Economics*
B.S. 1952, PH.D. 1955, London
- WISNOSKY, JOHN, *Instructor in Art*
B.F.A. 1962, M.F.A. 1964, Illinois
- WISWELL, ELLA L., *Associate Professor of
European Languages*
DIPLOMA 1931, Paris; B.A. 1941, Hawaii
- WITTERMANS, TAMME, *Associate Professor of
Sociology*
PH.D. 1955, London
- WITTICH, WALTER A., *Professor of Education*
B.S. 1932, M.A. 1934, PH.D. 1943, Wisconsin
- WOLFF, RICHARD J., *Assistant Professor of Physics*
B.A. 1962, Carleton; PH.D. 1967, California
(Berkeley)
- WOLFF, ROBERT J., *Associate Professor of
Public Health*
PH.D. 1953, Michigan
- WOLSTENCROFT, R. DAVID, *Associate Professor of
Physics and Astronomy*
B.S.C. 1959, University College of London;
PH.D. 1962, Cambridge
- WOLZ, CARL, *Assistant Professor of Drama and
Theatre and Music*
B.A. 1950, Chicago; M.A. 1965, Hawaii
- WON, GEORGE Y., *Assistant Professor of
Sociology*
B.A. 1955, M.A. 1957, Hawaii; PH.D. 1962,
Michigan State
- WONG, HELENE H., *Associate Professor of Speech*
B.A. 1942, M.A. 1947, Stanford; PH.D. 1955,
Louisiana State
- WONG, KAUPENA, *Lecturer in Music*
B.A. 1951, Hawaii
- WONG, RUTH E. M., *Assistant Professor of
Mathematics*
B.ED. 1948, Hawaii; M.S. 1960, Illinois
- WOOD, RICHARD E., *Acting Assistant Professor of
German*
B.A. 1963, M.A. 1967, Cambridge
- WOODS, RICHARD D., *Acting Assistant Professor
of Spanish*
B.A. 1956, Montana; M.A. 1960, National
University of New Mexico
- WOOLLARD, GEORGE P., *Professor of Geophysics*
B.S. 1932, M.S. 1934, Georgia Institute of
Technology; A.M. 1935, PH.D. 1937, Princeton
- WORKMAN, EVERLY J., *Professor of Physics (Hilo)*
B.S. 1924, D.S.C. 1955, Whitman; PH.D. 1930,
Virginia
- WORTH, ROBERT M., *Professor of Public Health*
B.A. 1950, California; M.A. 1954, California
(San Francisco); M.P.H. 1958, Harvard; PH.D.
1962, California (Berkeley)
- WRATHALL, JAY W., *Assistant Professor of
Chemistry*
B.S. 1957, M.S. 1959, Brigham Young; PH.D.
1962, Ohio State
- WRIGHT, DONALD R., *Instructor in Military Science*
- WU, I-PAI, *Assistant Agricultural Engineer*
B.S.A.E. 1955, National Taiwan; M.S.A.E. 1960,
PH.D. 1963, Purdue
- WULFF, LOUISE M., *Instructor in Medical
Technology*
B.S. 1932, Wisconsin; M.S. 1966, Hawaii
- WYRTKI, KLAUS, *Professor of Oceanography*
S.C.D. 1930, Kiel (Germany)
- XIGOGIANIS, LOUIS P., *Instructor in English as
Second Language*
B.A. 1953, Illinois; M.A. 1964, Hawaii
- YAMADA, CHIE, *Lecturer in Music*
NATORI DIPLOMA, Tokyo
- YAMADA, JUNE K., *Instructor in Speech*
B.ED. 1965, M.A. 1967, Hawaii
- YAMADA, YUKIHIRO, *Instructor in Japanese*
B.A. 1960, Rikkyo; M.A. 1962, International
Christian
- YAMAMOTO, GEORGE K., *Assistant Professor of
Sociology*
B.A. 1947, M.A. 1949, Hawaii
- YAMAMOTO, HARRY, *Associate Professor of Food
Science*
B.S. 1955, Hawaii; M.S. 1958, Illinois; PH.D.
1962, California (Davis)
- YAMAMURA, DOUGLAS S., *Professor of Sociology*
B.F.D. 1938, M.ED. 1941, Hawaii; PH.D. 1949,
Washington
- YAMASAKI, BEATRICE T., *Assistant Professor of
Philosophy*
B.A. 1950, Mount Holyoke; M.A. 1954, Hawaii;
PH.D. 1962, Bryn Mawr
- YAMASHITA, PEARL N., *Assistant Professor of
Education*
B.F.D. 1942, Hawaii; M.A. 1948, Iowa State
- YAMAURA, YOICHI, *Instructor in Japanese*
B.A. 1951, Chuo University
- YANAGIMACHI, RYUZO, *Assistant Professor of
Anatomy*
B.S. 1952, PH.D. 1960, Hokkaido
- YANAGISAKO, ALVIN Y., *Instructor in Sociology*
B.A. 1960, M.A. 1964, Hawaii
- YANG, SARAH L., *Assistant Professor of Education*
B.A. 1931, Colorado State College of Education;
M.F.D. 1952, Hawaii
- YASNER, ELAINE, *Lecturer in Music*
B.M., 1965, Oberlin

- YASUNOBU, KERRY T., *Professor of Biochemistry*
B.S. 1950, PH.D. 1954, Washington
- YEE, PHILLIP K. H., *Lecturer in Civil Engineering*
B.S. 1938, Hawaii
- YEE, WARREN, *Associate Professor of Horticulture*
B.S. 1942, Hawaii; M.S. 1959, Purdue
- YEH, YEONG-HER, *Assistant Professor of Economics*
B.A. 1955, Taiwan; M.A. 1959, PH.D. 1965, Minnesota
- YEH, ZUEI-ZONG, *Associate Professor of Mathematics*
B.A. 1953, Minnesota; M.A. 1956, PH.D. 1959, Princeton
- YOKOYAMA, MITSUO, *Associate Professor of Genetics*
M.D. 1950, Jutendo Medical School; PH.D. 1958, Tokyo Medical and Dental
- YONAN, ALAN M., *Instructor in Speech (Hilo)*
B.S. 1957, M.A. 1958, Michigan State
- YOSHIDA, NORMAN J., *Instructor in English (Hilo)*
B.A. 1965, Michigan State; M.A. 1967, California (Los Angeles)
- YOSHIKAWA, MUNEO, *Instructor in Japanese*
B.A. 1962, Linfield College; M.A. 1967, Hawaii
- YOSHISHIGE, GEORGE S., *Junior Specialist in Education*
B.A. 1953, M.ED. 1967, Hawaii
- YOUNG, FRANKLIN, *Associate Professor of Foods and Nutrition*
A.B. 1951, Mercer; B.S.A. 1952, M.A.G. 1954, PH.D. 1960, Florida
- YOUNG, H. Y., *Associate Professor of Agronomy*
B.S. 1932, M.S. 1933, Hawaii
- YOUNG, JOHN, *Professor of Japanese*
B.A. 1942, Tokyo; B.S. 1949, M.S. 1951, Georgetown; PH.D. 1955, Johns Hopkins
- YOUNG, REGINALD H. F., *Assistant Professor of Public Health*
B.S. 1959, M.S. 1965, Hawaii; SC.D. 1967, Washington
- YOUNG, THOMAS B., *Instructor in English*
B.A. 1964, Princeton; M.F.A. 1967, Iowa
- YUEN, CLARA K. S. Y., *Assistant Professor of Tropical Medicine*
B.S. 1951, Hawaii; M.S. 1953, Wisconsin; PH.D. 1964, California (Los Angeles)
- YUEN, JACK K., *Associate Professor of Engineering*
B.S. 1951, Hawaii; M.S. 1965, Colorado State
- YUEN, PAUL C., *Professor of Electrical Engineering*
B.S. 1952, Chicago; M.S. 1955, PH.D. 1960, Illinois Institute of Technology
- YURMAN, RICHARD H., *Instructor in English*
B.S. 1958, Massachusetts Institute of Technology, A.M. 1961, Boston
- ZAKAS, CAPT. LOUIS H., *Assistant Professor of Military Science*
B.S. 1960, Arizona State
- ZEITLIN, HARRY, *Associate Professor of Chemistry*
B.A. 1937, Harvard; M.S. 1948, PH.D. 1951, Hawaii
- ZIRKER, JACK B., *Professor of Physics and Astronomy*
B.S. 1949, City College of N.Y.; PH.D. 1956, Harvard

VISITING FACULTY

- ALBAUM, GERALD, *Visiting Associate Professor of Marketing*
B.A. 1934, M.B.A. 1958, Washington; PH.D. 1962, Wisconsin
- ALLMENDINGER, E. EUGENE, *Visiting Associate Professor in Ocean Engineering*
B.S. 1941, Michigan; M.S. 1950, New Hampshire
- AYRES, BARBARA, *Visiting Associate Professor of Anthropology*
B.A. 1947, Coe College; M.A. 1949, North Carolina; PH.D. 1956, Radcliffe
- BASSHAM, JAMES A., *Visiting Professor of Biochemistry*
B.S. 1945, PH.D. 1949, California (Berkeley)
- BORPEL, JACQUES O., *Visiting Professor of French*
LICENCE ES LETTRES, 1948; DIPLOME D'ETUDES SUPERIEURES, 1949; CAPES, 1952, Paris
- BRISTOL, MELVIN L., *Visiting Assistant Professor of Botany*
A.B. 1960, A.M. 1962, PH.D. 1965, Harvard
- BWY, DOUGLAS, *Visiting Assistant Professor of Political Science*
B.A. 1960, San Diego State; M.A. 1965, PH.D. 1968, Northwestern
- CHANG, SEN-DOU, *Visiting Associate Professor of Geography*
B.A. 1949, Chi-nan University (Shanghai); M.A. 1955, Wisconsin; PH.D. 1961, Washington
- DE HEER, GERRIT K., *Visiting Associate Professor of Indonesian*
B.A. 1953, M.A. 1961, California (Berkeley)
- DIWAN, ROMESH K., *Visiting Associate Professor of Economics*
M.A. 1955, Delhi; PH.D. 1964, Birmingham
- DUBOIS, GEORGE B., *Visiting Professor of Mechanical Engineering*
A.B. 1927, M.E. 1929, Cornell
- DYKSTRA, GERALD, *Visiting Professor of English*
B.A., M.A. 1948, PH.D. 1955, Michigan
- FEUER, LEWIS S., *Visiting Professor of Philosophy*
(Feb. 1, 1966)
B.S. 1931, College of City of New York; A.M. 1932, PH.D. 1935, Harvard
- FIRTH, RAYMOND, *Visiting Professor of Anthropology, Pacific Chair in Anthropology*
M.A., Auckland University; PH.D., London School of Economics
- FRODSHAM, JOHN D., *Visiting Professor of Chinese*
B.A. 1953, M.A. 1956, Cambridge, England; PH.D. 1963, Australian National University
- GORDON, ADRIAN H., *Visiting Associate Professor of Geosciences*
B.S. 1935, M.S. 1936, California Institute of Technology
- HASSE, HELMUT, *Visiting Professor of Mathematics*
PH.D. 1921, Marburg
- HSU, EDWARD Y., *Visiting Instructor in Travel Industry Management*
A.B. 1929, Columbia
- JENNINGS, JESSE D., *Visiting Professor of Anthropology*
B.A. 1929, Montezuma College; PH.D. 1943, Chicago
- JEZERNIK, MISHA D., *Visiting Professor of Political Science*
M.A., PH.D., Ljubljana
- KAPLAN, ABRAHAM, *Visiting Professor of Philosophy*
B.A. 1937, College of St. Thomas; PH.D. 1942, California (Los Angeles)
- KAPLAN, ROBERT M., *Visiting Associate Professor of Marketing*
B.A. 1959, British Columbia; M.B.A. 1961, Harvard; PH.D. 1966, Michigan State
- KINLOCH, HECTOR G., *Visiting Associate Professor of American Studies*
B.A. 1949, M.A. 1953, Cambridge; M.A. 1954, PH.D. 1960, Yale
- LASCELLES, ROGER N., *Visiting Instructor in Travel Industry Management*
B.S.C. 1962, Queen's University
- MANDEL, ARTHUR, *Visiting Professor of Economics*
PH.D. 1932, Berlin
- MARCUS, MARVIN, *Visiting Colleague in Mathematics*
B.A. 1950, PH.D. 1954, California (Berkeley)
- MATLAW, MYRON, *Visiting Professor of English and Drama*
A.B. 1949, Hofstra College; M.A. 1950, PH.D. 1953, Chicago
- MCCAULEY, ROBERT F., *Visiting Professor of Public Health*
B.S. 1939, New Mexico State College; M.S. 1949, Michigan State College; sc.d. 1952, M.I.T.
- RICHARDSON, RICHARD J., *Visiting Assistant Professor of Political Science*
B.A. 1957, Harding College; M.A. 1961, PH.D. 1966, Tulane
- SMITH, CLIFFORD W., *Visiting Assistant Professor of Botany*
M.S.C. 1963, PH.D. 1965, Manchester
- THOM, BRUCE G., *Visiting Assistant Professor of Geography*
B.A. 1961, Sydney; PH.D. 1966, Louisiana State
- YOTOPOULOS, PAN A., *Visiting Associate Professor of Economics*
B.A. 1956, Athens (Greece); M.A. 1957, Kansas; PH.D. 1962, California (Los Angeles)

AFFILIATE GRADUATE FACULTY

- APT, WALTER J., PH.D., *Nematologist*, Pineapple Research Institute
- BARKLEY, RICHARD A., PH.D., *Chief, Oceanography Investigation*, Bureau of Commercial Fisheries, U. S. Fish & Wildlife Service
- BARROW, TERENCE, PH.D., *Anthropologist*, Bishop Museum
- BATESON, GREGORY, M.A., *Associate Director of Research*, Oceanic Institute, Makapuu
- BERNSTEIN, LEO, M.D., *Former Director*, State Department of Health
- BREKKE, JOHN E., M.S., *Food Technologist*, Hawaii Fruit Laboratory, USDA
- DAVIS, CLIFTON J., B.S., *Chief, Entomology Branch*, State Department of Agriculture
- DAVIS, DANIEL A., M.S., *District Geologist*, U. S. Geological Survey
- EMORY, KENNETH P., PH.D., *Anthropologist*, Bishop Museum
- FELTON, GEORGE E., PH.D., *Technical Director*, Dole Corporation
- FORCE, ROLAND W., PH.D., *Director*, Bishop Museum
- FOSBERG, FRANCIS RAYMOND, PH.D., *Special Adviser on Tropical Biology*, Smithsonian Institute
- FUJINO, KAZUO, PH.D., *Chief of Subpopulations Program*, Bureau of Commercial Fisheries, U. S. Fish & Wildlife Service
- GALLIMORE, RONALD G., PH.D., *Research Associate*, Bishop Museum
- GERTEL, KARL, PH.D., *Research Economist*, U. S. Department of Agriculture
- GRESSITT, J. LINSLEY, PH.D., *Entomologist*, Bishop Museum
- GUDEMAN, HOWARD E., PH.D., *Director, Psychological Services and Training*, Hawaii State Hospital
- HALPERIN, SIDNEY L., PH.D., *Clinical Psychologist*, Tripler General Hospital
- HEINICKE, RALPH M., PH.D., *Director of Chemistry and Food Research*, Dole Corporation
- HEINZ, DON J., PH.D., *Head, Department of Genetics and Pathology*, Experiment Station, HSPA
- HENDRICKSON, J. R., PH.D., *Director*, Oceanic Institute
- HILTON, H. WAYNE, PH.D., *Principal Chemist*, Experiment Station, HSPA
- HOWARD, ALAN, PH.D., *Anthropologist*, Bishop Museum
- ISOBE, MINORU, PH.D., *Head, Agronomy Department*, Experiment Station, HSPA
- JOYCE, C. R., PH.D., *Medical Entomologist*, State Department of Health
- KERNS, KENNETH R., M.S., *Plant Breeder*, Pineapple Research Institute
- KONDO, YOSHIO, PH.D., *Malacologist*, Bishop Museum
- KRAUSS, BEATRICE, M.S., *Plant Physiologist*, Pineapple Research Institute
- LINK, EDWIN A., D.ENG. (Hon.), *Director and Consultant*, General Precision Inc., Ocean Systems, Inc.
- LOOMIS, HAROLD, PH.D., *Tsunami Research Group*, Environmental Science Services Administration
- MARR, JOHN, M.A., *Hawaii Area Director*, Bureau of Commercial Fisheries, U. S. Fish & Wildlife Service
- McLAREN, KAZUE, M.P.H., *Assistant Director*, Public Health Nursing Branch, State Department of Health
- MILLER, GAYLORD, PH.D., *Chief, Tsunami Research*, ESSA
- NICKELL, LOUIS G., PH.D., *Principal Physiologist and Biochemist*, Experiment Station, HSPA
- PATY, JEANNE E., M.P.H., *Chief, Health Education Office*, State Department of Health
- POWERS, HOWARD A., PH.D., *Scientist in Charge*, U. S. Geological Survey
- PRICE, SAUL, M.S., *Regional Climatologist*, Water Resources Research Center
- QUISENBERRY, WALTER B., M.D., *Director*, State Department of Health
- REYNOLDS, WILLIAM N., M.S., *Senior Project Engineer*, Experiment Station, HSPA
- ROSEN, LEON, M.D., *Head, Pacific Research Section*, National Institute of Allergy and Infectious Diseases, U. S. Department of Health, Education and Welfare
- ROTHSCHILD, BRIAN J., PH.D., *Chief, Skipjack Ecology Program*, Bureau of Commercial Fisheries, U. S. Fish & Wildlife Service
- SAKIMURA, KANJYO, *Entomologist*, Pineapple Research Institute
- SECKEL, GUNTER R., M.S., *Oceanographer*, Bureau of Commercial Fisheries, U. S. Fish & Wildlife
- SHIM, WALTON K. T., M.D., *Assistant Director*, Birth Defects Center, Children's Hospital
- SINOTO, YOSHIHIKO, SC.D., *Archeologist*, Bishop Museum
- SMITH, JIMMIE B., PH.D., *Head, Plant Breeding Section*, Pineapple Research Institute
- STEINER, LOREN F., M.S., *Research Entomologist and Investigations Leader*, Hawaii Fruit Fly Investigations, U. S. Department of Agriculture
- TAKATA, MICHIO, M.S., *Director, Division of Fish & Game*, State Department of Agriculture and Conservation
- TOM, ALBERT Q. Y., PH.D., *Vice-President*, Sunn, Low, Tom & Hara Inc., Consulting Engineers
- VAN ROYEN, PIETER, PH.D., *Chairman and Botanist*, Department of Botany, Bishop Museum
- WAGNER, WARREN, PH.D., *Professor of Botany; Director, Botanical Gardens*, University of Michigan
- WAXMAN, SORRELL H., M.D., *Kapiolani Maternity Hospital*
- WALLRABENSTEIN, PAUL P., PH.D., *Agricultural Statistician in Charge*, Statistical Reporting Service, U. S. Department of Agriculture
- WILSON, NIXON A., PH.D., *Acarologist*, Bishop Museum
- WISMER, CHESTER A., PH.D., *Senior Pathologist*, Experiment Station, HSPA
- YEN, DOUGLAS E., M.AGR.SC., *Ethnobotanist*, Bishop Museum
- YOSHIMOTO, CARL M., PH.D., *Specialist, Taxonomy of Hymenoptera*, Bishop Museum
- YUEN, CLARA K. S., PH.D., *Research Microbiologist*, NIH, NIAID, Pacific Research Section, Honolulu (Queen's Hospital)

COLLEGE OF ARTS & SCIENCES

Student Services Office

- *ABRUMS, TOM E., *Academic Adviser*
 *ASCHER, LEONARD W., *Pre-Business Adviser*
 *BILSBORROW, ELEANOR J., *Academic Adviser*
 *CARROLL, BERNARD G., *Academic Adviser*
 *CHU, GEORGE W., *Pre-Medical Adviser*
 *GRIFFING, AUGUSTUS H., *Academic Adviser*
 *HACKLER, WINDSOR G., *Academic Adviser*
 *HOSHOR, JOHN P., *Associate Dean*
 *JOHNSON, JEANETTE, *Academic Adviser*
 *KOEHLER, DOROTHY I., *Academic Adviser*
 *LARSON, VALENTINE K., *Academic Adviser*
 *LUM, CHEONG, *Pre-Education Adviser*
 *MATTHEWS, DONALD C., *Academic Adviser*
 MERRITT, GRACE, *Academic Adviser, Director of KOKUA*
 B.A. 1941, Montana; M.A. 1949, Denver
- *MICHALSKI, JOHN, *Academic Adviser*
 OMORI, RACHEL T., *Academic Adviser*
 B.ED. 1944, 5th Yr. Cert. 1945, Hawaii
 *ORTELT, JUDITH A., *Pre-Nursing Adviser*
 *OWENS, MONIKA, *Academic Adviser*
 *OXFORD, WAYNE H., *Academic Adviser*
 *PAGE-CALLIS, JACQUELINE R., *Academic Adviser*
 SETTLE, JOYCE, *Academic Adviser*
 B.F.D. 1959, M.A. 1962, Hawaii
 TOYOTA, WINIFRED K., *Academic Adviser*
 B.F.D. 1946, 5th Yr. Cert. 1947, Hawaii; M.A. 1950, New York
 *TRINE, J. ARDEN, *Pre-Business Adviser*
 *YOSHIKAWA, BENG POH, *Academic Adviser*
 *ZEITLIN, HARRY, *Academic Adviser*

COLLEGE OF GENERAL STUDIES

- ABBOTT, WILLIAM L., *Assoc. Specialist*
 B.A. 1948, M.A. 1951, Wisconsin
- *BILGUS, CAROLYN B., *Regional Training Officer, Headmistress*
 BROWN, HAROLD P., *Asst. Specialist*
 B.S. 1944, Michigan; M.A. 1955, Stanford
- CARPENTER, THOMAS F., *Jr. Specialist*
 B.A. 1957, Kansas State; M.A. 1960, Northwestern
- *CHANTINSY, JOHN G., *Specialist and Assistant Dean*
 FARRAND, LANGDON S., *Asst. Specialist*
 B.A. 1939, Reed College
- FLEECE, JEFFERY A., *Assoc. Specialist and Assistant Dean*
 B.A. 1941, Central College (Missouri); M.A. 1942, Vanderbilt; PH.D. 1952, Iowa
- HARDIN, HERB H., *Training Coordinator*
 HOLWAY, IVA T., *Asst. Specialist*
 LL.B. 1940, Lincoln University
- JOHNSON, HARRIET L., *Jr. Specialist*
 B.S. 1938, M.A. 1948, Ohio State
- *KLOPF, DONALD W., *Assoc. Specialist*
 LARDIN, HARRY E., *Program Coordinator*
 B.S. 1934, West Point
- MORIWAKI, TAKESHI, *Asst. Specialist*
 B.A. 1951, M.A. 1952, PH.D. 1962, Indiana State College
- PLITZ, GUY H., *Jr. Specialist*
 A.B. 1960, Dartmouth; B.D. 1963, Church Divinity School of the Pacific
- REPAS, ROBERT F., *Specialist*
 B.A. 1944, Wisconsin; M.A. 1963, Michigan State
- SAKAI, HESTER H., *Asst. Specialist*
 B.B.A. 1953, M.B.A. 1954, Hawaii
- SIGAL, BENJAMIN C., *Specialist*
 B.A. 1927, Pittsburgh; LL.B. 1930, Harvard
- YONAN, ALAN M., *Asst. Specialist*
 B.S. 1957, M.A. 1958, Michigan State

DRAMA AND THEATRE

- CALDEIRA, ARTHUR B., *Jr. Researcher in Drama and Theatre*
 B.A. 1951, Hawaii
- MIJI, TAKEO, *Jr. Specialist in Drama and Theatre*
 B.A. 1955, Hawaii

* Degrees listed under "Instruction."

HAWAII CURRICULUM CENTER

- *BENNETT, HANNAH LOU, *Asst. Professor of Education*
- *BILOUS, CAROLYN B., *Asst. Professor of Education (on leave)*
- *BRANTLEY, L. REED, *Professor of Education*
BREWERTON, LAWRENCE H., *Elementary Teacher*
A.A. 1956, Los Angeles City; B.A. 1958, California State; M.S. 1960, Southern California
- BROWN, ALVIN, *Reproductions Operations Manager*
B.S. 1960, Pacific Union College
- *BROWNELL, JOHN A., *Assoc. Director*
- BURGET, ANTHONY, *Curriculum Specialist*
B.A. 1960, Miami; M.A. 1964, Columbia
- BURTON, LEON H., *Cultural Resource Coordinator*
B.A. 1956, Hawaii; M.A. 1957, ED.D. 1963, Columbia
- CARTER, MARJORIE, *Chief, Graphic Arts Section*
- CASEY, PATRICIA R., *Music Teacher*
B.M. 1949, Marylhurst College; M.A. 1964, Washington
- CHERRY, ERNEST J., *Asst. Director of Administration (on leave)*
B.A. 1948, Colorado State
- *COLLINS, MYRTLE T., *Instructor in Education (on leave)*
- CONRAD, RAY W., *Social Studies Teacher*
A.B. 1959, Georgetown; M.ED. 1965, Hawaii
- COWIE, GWENDOLEN, *Art Teacher*
B.A. 1954, Radcliffe; M.A.T. 1967, Wesleyan
- CRAWFORD, RUTH V., *French Teacher*
B.A. 1965, Trinity; M.A. 1967, Alberta, Edmonton, Canada
- *CROCKETT, RUTH M., *Instructor in Education*
- CROOKER, ELIZABETH P., *Instructor in Education*
- *CURTIS, DELORES M., *Asst. Professor of Education*
- DEMANCHE, EDNA LOUISE, *Science Teacher*
B.S. 1940, St. Vincent; M.S. 1964, Notre Dame
- DYKSTRA, GERALD, *Chief Curriculum Consultant*
B.A. 1948, M.A. 1948, PH.D. 1955, Michigan
- ENOKI, DONALD, *Curriculum Planner*
B.A. 1959, Hawaii; M.A. 1966, Columbia
- FUJITA, GRACE, *Administrative Assistant*
B.A. 1945, Hawaii
- *GREENBERG, MARVIN, *Asst. Professor of Education*
- HASKINS, VALERIE T., *English Teacher*
B.A. 1964, Scripps
- *HAZAMA, DOROTHY O., *Asst. Professor of Education*
- *HIGA, HAROLD, *Asst. Professor of Education*
- HIRSH, CONRAD W., *Mathematics Teacher*
B.A. 1963, Reed; M.S. 1964, Stanford
- HIU, NANCY T., *Teacher-Planner*
B.ED. 1954, 5th Yr. Cert., M.A. 1967, Hawaii
- HUDDLESTON, DON, *Media Specialist*
- IKEDA, TOKIE, *Teacher-Disseminator*
B.ED. 1962, Hawaii
- INOUE, KENJI, *Instructor*
B.ED. 1943, Hawaii; M.A. 1951, Columbia
- *JEFFRYES, JAMES, *Acting Asst. Professor of Education*
- *JENKINS, ROSE C., *Social Case Worker*
- KALEIALOHA, CAROL J., *Social Science Teacher*
B.A. 1964, California (Los Angeles); M.A. 1966, Hawaii
- KALIFRE, JON E., *History Teacher*
B.S. 1959, M.S. 1966, Wisconsin
- KEATING, BARBARA E., *Teacher-Planner*
B.S. 1960, Oregon
- *KENNEDY, DANIEL A., *Asst. Professor of Education*
- KIEHM, RUTH, *Teacher-Planner*
B.A. 1950, M.ED. 1966, Hawaii
- *KING, ARTHUR R., JR., *Director*
- KIYOKAWA, HIDEKO, *Teacher-Investigator*
B.A. 1949, Hawaii
- KLEINJANS, EDITH K., *Planner*
A.B. 1943, Hope College; M.A. 1944, Michigan
- KOKI, STANLEY, *Curriculum Planner (on leave)*
B.A. 1957, Hawaii
- KOO, GLADYS Y., *Asst. Director*
B.S. 1941, M.ED. 1960, Hawaii
- *KRAUSE, LORETTA, *Instructor in Education (on leave)*
- KROLL, JOHN G., *Teacher*
A.B. 1966, Amherst; M.A.T. 1967, Harvard
- *KYSSELKA, WILL, *Asst. Professor of Education*
- LAU, CHERYL ANN, *Planner*
B.M.E. 1966, Indiana; M.A.T. 1967, Smith
- LEE, EUN SOOK, *Teacher-Planner*
B.A. 1952, Wesleyan; A.M.T. 1953, Radcliffe
- *LEIB, EDNA LEE, *Asst. Professor of Education*
- LEWIS, LEILANI, *English Teacher*
B.A. 1965, Sarah Lawrence; M.A. 1966, Stanford
- *LITTLE, JAMES R., *Acting Asst. Professor of Education*
- LONG, FREDERICK R., *Planner*
B.A. 1957, Southwestern Texas; M.A. 1959, Americas
- LOOK, MAY, *Teacher-Disseminator*
B.ED. 1943, Hawaii
- *LOUIS, EDITH L., *Asst. Professor of Education*
- *MACGREGOR, BEATRIX B., *Instructor in Education*
- *MANEY, FLORENCE A., *Asst. Professor of English*
- MATSUMURA, JEAN S., *Teacher-Planner*
B.A. 1963, M.A. 1967, Hawaii
- MCKEAN, MARGITH, *Teacher-Planner*
A.B. 1964, Duke
- *MENDENHALL, BETTY J., *Instructor*
- MEREDITH, CONNIE, *Evaluation Specialist*
B.A. 1963, Hawaii; A.M. 1965, Illinois
- *MINN, GERALDINE H., *Instructor in Speech and Education*
- MITCHELL, RONALD L., *Social Studies Teacher*
A.B. 1950, Stanford; M.A. 1962, Claremont

* Degrees listed under "Instruction."

- *NAKAMURA, IRENE H., *Asst. Professor of Education*
- NICOL, E. ANNE, *Assistant in Research*
A.B. 1964, Stanford
- NODA, LILLIANN A., *English Teacher*
B.A. 1966, Smith; M.A. 1967, Claremont Graduate School
- NOHARA, JAMES, *Administrative Assistant*
B.ED. 1953, Hawaii; M.A. 1956, Pennsylvania State
- NUNES, SHIHO, *Assoc. Director, Language Arts Project*
B.A. 1958, Hawaii
- OKIMOTO, RAY I., *Teacher-Planner*
B.ED. 1956, Hawaii; M.M.A. 1965, Peabody
- OKSENDahl, WILMA, *Curriculum Planner*
B.A. 1948, Montana State; M.A. 1958, Columbia
- OSMAN, ALICE, *Curriculum Planner*
B.S. 1954, M.A. 1965, Columbia
- OSTRANDER, NORMA, *Curriculum Planner*
B.ED. 1961, Chadron State; M.A. 1967, Chicago
- *PANG, MORRIS S. Y., *Asst. Professor of Education*
- PORT, ANTOINETTE, *Curriculum Planner*
B.A. 1961, Boston College; M.A. 1964, Columbia
- PORT, RICHARD, *Curriculum Planner*
B.A. 1960, Boston College; M.A. 1964, Columbia
- *POTTENGER, FRANCIS, *Acting Asst. Professor of Education*
- PRINS, JAN, *Curriculum Planner*
B.S. 1960, Wayne State; M.A. 1967, Columbia
- RANKS, LAURA J., *Curriculum Planner*
B.A. 1961, Occidental
- *RIED, HUFEN C., *Instructor in Education*
- RICHARDS, LLOYD R., *Curriculum Planner*
A.B. 1929, Grand Island; M.A. 1938, Nebraska
- RODGERS, THEODORE, *Chief Planner*
B.A. 1956, Amherst; M.S. 1962, Georgetown; PH.D. 1968, Stanford
- ROSA, LEONARD G., *Curriculum Planner*
B.S. 1959, Chaminate
- *ROULEAU, PATRICIA, *Lecturer in Education*
- *SAIKI, PATSY S., *Asst. Professor of Education (on leave)*
- SAKAMAKI, ELIZABETH F., *Teacher-Planner*
B.ED. 1959, Hawaii; M.A. 1964, Columbia
- *SANBORN, DONALD, *Asst. Professor of Education*
- SANPEI, ANNETTE, *Instructor*
B.S. 1963, Wisconsin
- *SATO, ESTHER, *Asst. Professor of Education*
- *SATO, JESSIE, *Asst. Professor of Education*
- SAVARD, WILLIAM, *Co-Director*
B.A. 1951, Massachusetts; M.A. 1954, Springfield; ED.D. 1960, Stanford
- *SMITH, JAMES RAY, JR., *Instructor in Education*
- SOUZA, BLASE, *Research Librarian*
B.ED. 1939, Hawaii; B.L.S. 1947, Pratt Institute
- TAKAYESU, AMY H., *Instructor (on leave)*
B.A. 1947, 5th Yr. Cert. 1948, Hawaii
- TANOUE, MARY, *Project Manager, Language Arts*
B.ED. 1958, M.ED. 1960, Hawaii
- *TOYAMA, JEAN M., *Instructor in Education*
- UDA, JOAN A., *Teacher-Planner*
B.A. 1959, North Central; M.F.A. 1967, Iowa
- WING, RICHARD J., *English Teacher*
B.A. 1964, Montana; M.A. 1967, Stanford
- YOUNG, ERNELL C., *Mathematics Teacher*
B.ED. 1966, M.ED. 1967, Hawaii

LIBRARY ACTIVITIES

- APPLE, MARGARET, Jr., *Library Spec., Science Technology Reference*
B.S. 1954, M.L.S. 1966, Hawaii
- BAKRIS, EUGENIA, Jr., *Library Spec., Science Technology Reference*
B.A. 1963, M.A.L.S. 1965, Michigan
- BELL, JANIE E., *Head, Hawaiian & Pacific*
B.A. 1932, Hawaii; B.S. in L.S. 1933, Washington
- CHANG, DIANA M. D., Jr., *Library Spec., Social Science Reference*
B.A. 1955, California (Berkeley); M.L.S. 1966, Hawaii
- CHAPMAN, RONALD, Jr., *Library Spec., Undergraduate Library*
A.A. 1960, Glendale; B.A. 1963, Los Angeles State; M.L.S. 1968, Hawaii
- CHING, CLARA C., Jr., *Library Spec., Documents & Maps*
B.A. 1925, Hawaii; B.S.L.S. 1926, Simmons; M.A. 1927, Columbia
- CHONG, ELEANOR F. Y., *Head, Documents & Maps*
B.A. 1950, Hawaii; M.S.L.S. 1952, Illinois
- CORREA, GENEVIEVE B., Jr., *Library Spec., General Reference*
B.A. 1940, Hawaii; B.S.L.S. 1946, North Carolina
- COYLE, LESLIE P. JR., *Asst. Library Spec., Administration*
B.A. 1956, Southern California; M.L.S. 1965, California (Berkeley)
- CROZIER, VIRGINIA, *Asst. Library Spec., Science Technology Reference*
B.A. 1931, Pomona; B.S.L.S. 1932, Emory
- CUTRIGHT, CLARA H., Jr., *Library Spec., General Reference*
A.B. 1936, Colorado State; B.S. in L.S. 1937, Denver
- DEFANO, PHYLLIS, Jr., *Library Spec., General Reference*
Regents, 1960, Victor Central; A.B. 1964, Suny at Albany; M.L.S. 1967, Hawaii

* Degrees listed under "Instruction."

- FRANKLIN, ALMA I., *Asst. Library Spec., Cataloging*
B.A. 1954, Hawaii; M.L.S. 1955, California
- GARNETT, EMILY O., *Jr. Library Spec., General Reference*
B.A. 1931, Texas Christian; B.S.L.S. 1935, M.A. 1937, Illinois
- GIBSON, JEAN O., *Jr. Library Spec., Cataloging*
B.A. 1939, Smith; M.L.S. 1968, Hawaii
- GOYA, WALLACE, *Acting Head, Reprography*
B.A. 1955, Hawaii
- HACKETT, HAROLD W., *Jr. Library Spec., Undergraduate Library*
B.A. 1942, Minnesota; M.L.S. 1956, California (Berkeley)
- HALSTED, CLARISSA H., *Jr. Library Spec., General Reference*
PH.B. 1929, Chicago
- *HARRIS, IRA W., *Head, Undergraduate Library*
- HARSCH, LOUISE C., *Jr. Library Spec., Processing*
B.A. 1954, Santa Barbara; M.L.S. 1956, California (Berkeley)
- HARVIE, NAN A., *Jr. Library Spec., Cataloging*
B.F.A. 1946, Ohio State; M.L.S. 1967, Hawaii
- IDLER, BASIL, *Jr. Library Spec., Science Tech. Reference*
B.B.A. 1960, Texas College of Arts & Industries; M.L.S. 1967, Hawaii
- IMAMOTO, JEAN R., *Jr. Library Spec., Selection & Searching*
B.A. 1957, Hawaii; M.S.L.S. 1959, California (Los Angeles)
- KAIHARA, YASUTO, *Jr. Library Spec., Hawaiian & Pacific*
B.A. 1954, Hawaii; M.S. 1958, Illinois
- KANE, M. RITA, *Jr. Library Spec., Science Tech. Reference*
B.S. 1953, Boston; M.L.S. 1967, Hawaii
- KIMURA, CAROL E., *Jr. Library Spec., Processing*
B.A. 1964, M.L.S. 1967, Hawaii
- KITTELSON, DAVID J., *Asst. Library Spec. (Hilo) (on leave)*
B.A. 1957, M.A. 1966, Hawaii; M.A. 1960, Minnesota
- MATSUMORI, DONALD M., *Jr. Library Spec., Cataloging*
B.B.A. 1955, Hawaii; M.S.L.S. 1960, California (Los Angeles)
- MCALISTER, DOROTHY C., *Head, Cataloging*
B.E.D. 1936, Illinois State Normal; B.S.L.S. 1942, Illinois
- MCBEATH, RONALD J., *Acting Director, Communications Service Center*
Teachers' Cert., 1948, Auckland Teachers' College; B.A. 1948, Auckland; B.ED. 1957, Alberta; M.S. in EDUC., 1958, PH.D. 1961, Southern California
- MEDEFARIS, ELMA A., *Jr. Library Spec., Undergraduate Library*
B.A. 1931, Missouri; B.S.L.S. 1935, Illinois
- MEDEIROS, LIONEL, *Jr. Spec. in Graphics Production*
B.A. 1959, M.A. 1962, Hawaii
- MORRIS, NANCY JANE, *Jr. Library Spec., Cataloging*
B.A. 1954, George Washington; M.A. 1964, Denver
- MYERS, ROSE E., *Acting Head, Selection & Searching*
B.A. 1965, Washington; M.L.S. 1967, Hawaii
- NOWAKI, JUNKO IDA, *Jr. Spec. in Library Science (Hilo)*
B.ED. 1961, Hawaii; A.M.L.S. 1964, Michigan
- OKADA, GILBERT S., *Jr. Library Spec., Cataloging*
B.ED. 1961, M.L.S. 1967, Hawaii
- OKUMURA, APRIL H., *Jr. Library Spec., Processing*
A.A. 1958, Maunaloa; B.A. 1962, Hawaii; M.L.S. 1966, Texas Woman's
- PATTERSON, CHARLOTTE A., *Jr. Library Spec., Undergraduate Library*
B.A. 1965, M.L.S. 1967, Hawaii
- RICHARDSON, VIRGINIA H., *Jr. Library Spec., Processing*
B.A. 1963, Dominican College; M.L.S. 1968, Hawaii
- ROFFMAN, MARIAN D., *Jr. Library Spec., Cataloging*
B.A. 1967, M.L.S. 1968, Hawaii
- *SANDERSON, RICHARD, *Media Spec., Communications Service Center*
- SEELYE, MARY B., *Asst. Library Spec., Social Science Reference*
B.A. 1936, Smith; B.S. 1941, Columbia
- *SHARP, HAROLD S., *Assoc. Library Spec., Head, Reference*
- SMITH, MARGARET H., *Jr. Library Spec., General Reference*
ED.D. 1936, Hawaii; M.A. 1937, Columbia; B.L.S. 1938, Pratt Institute
- STRONA, PROSERFINA, *Jr. Library Spec., Processing*
Tr. Normal Diploma, 1951; B.S.E.E. 1963, Philippine Normal College; M.L.S. 1967, Hawaii
- SZILARD, PAULA, *Jr. Library Spec., Science Tech. Reference*
B.A. 1963, Colorado; M.A. in L.S. 1965, Denver
- TSUI, MILLIE, *Head, Processing*
A.A. 1947, Bakersfield; B.A. 1954, M.L.S. 1955, California (Berkeley)
- VAN BROCKLIN, VINCENT, *Jr. Library Spec., Social Science Reference*
A.B. 1936, Stanford; M.B.A. 1938, Stanford Graduate School of Bus. Ad.; M.L.S. 1967, Hawaii
- YEE, WAI-CHEE, *Jr. Library Spec., Cataloging*
B.A. 1938, Hawaii; B.S.L.S. 1939, Columbia
- YOUNG, VERNA H. F., *Jr. Library Spec., Cataloging*
B.A. 1963, Chaminade; M.L.S. 1963, California
- ZACKS, GOLDIE, *Jr. Library Spec., General Reference*
B.S. 1947, Wisconsin; B.L.S. 1950, Oklahoma
- ZALEWSKI, CAROLINE P., *Jr. Library Spec., Processing*
A.B. 1964, Michigan (Flint); A.M.L.S. 1964, Michigan (Ann Arbor)

* Degrees listed under "Instruction."

OFFICE OF STUDENT AFFAIRS

- *BITNER, HAROLD M., *Vice-President for Student Affairs*
- AMJADI, HORMOZ, *Specialist (Psychiatrist), CTC*
M.D. 1959, Tehran
- BATESON, LOIS C., *Asst. Spec. in Student Personnel, CTC*
B.A. 1949, Duke; M.S. 1955, Columbia
- BROOKE, CHARLOTTE, *Head Resident, Hale Kaahine*
B.ED. 1964, Hawaii
- BROWN, JOHN W., *Director, Admissions and Records*
B.S. 1950, Montana State; M.A. 1958, Montana
- BURGOYNE, JAMES M., *Director, Student Housing*
B.S. 1948, M.D.A. 1949, Wisconsin
- *CHAR, DONALD F. B., *Director, Student Health Service*
- *CHAR, WALTER F., *Specialist (Psychiatrist), CTC*
- CHUN, JUNE L. J., *Jr. Spec. in Student Personnel*
B.A. 1959, San Jose; M.A. 1960, Columbia
- DNINNY, JAMES M., *Asst. Spec. in Student Personnel, CTC*
A.B. 1951, Oberlin; PH.D. 1958, Western Reserve
- DOI, RUTH N., *Jr. Spec. in Student Personnel, Admissions and Records*
B.A. 1949, Hawaii
- DUNNE, WILLIS E., *Jr. Spec. in Student Personnel, Student Activities*
B.M.A. 1959, Hawaii
- ELLINGSON, ALFRED L., *Director, Bureau of Student Activities*
B.A. 1943, B.S. 1948, Oregon
- ENGBRITSON, DAROLD E., *Jr. Spec. in Student Personnel, CTC*
B.D. 1960, Luther; B.A. 1960, Hawaii
- FUJIKAWA, WALLACE A., *Head Resident, Hale Alaui*
- FUJITA, GEORGE Y., *Assoc. Spec. in Student Personnel, CTC*
B.ED. 1954, M.ED. 1958, Hawaii; PH.D. 1961, Minnesota
- FUKUDA, NOBUKO, *Jr. Spec. in Student Personnel (Hilo)*
B.D. 1943, Hawaii; M.A. 1961, Michigan State
- GILLILAND, JOHN M., *Jr. Spec. in Student Personnel, Financial Aids*
B.S. 1962, Colorado; M.A. 1967, Hawaii
- GOLDSTEIN, LAURENCE B., *Head Resident, Johnson Hall*
B.A. 1964, Hawaii
- GOODRIDGE, ROBERT C., *Director, Financial Aids*
B.A. 1937, Dennison; M.F.D. 1950, E.D.D. 1953, Buffalo
- HALL, ROBERT B., *Jr. Spec. in Student Personnel, Student Health*
B.S. 1953, Calif. State Polytechnic; M.P.H. 1967, Hawaii
- HARADA, TAKESHI, *Jr. Spec. in Student Personnel, Student Activities*
B.S. 1951, Hawaii; M.S. 1955, Illinois
- IAMS, RUTH W., *Assoc. Spec. in Student Personnel, CTC*
PH.B. 1953, Chicago; M.A. 1952, Hawaii
- JONES, JANE H., *Asst. Spec. in Student Personnel, CTC*
B.A. 1947, Colorado; M.ED. 1965, E.D.D. 1967, Auburn
- KANESHIGE, EDWARD S., *Asst. Spec. in Student Personnel, CTC*
B.A. 1950, Hawaii; M.A. 1954, E.D.D. 1959, Columbia
- KOJIMA, ELLEN E., *Asst. Spec. in Student Personnel, CTC*
B.A. 1963, M.A. 1965, Hawaii
- LANKUTIS, KATHERINE, *Head Resident, Hale Kabawai*
B.A. 1962, Oberlin
- LUNDSSGAARD, DAVID E., *Jr. Spec. in Student Personnel, Admissions and Records*
B.A. 1961, Wheaton; M.A. 1967, Minnesota
- MAYFIELD, JAMES W., *Jr. Spec. in Student Personnel, Placement*
B.A. 1963, Oklahoma; M.A. 1965, Hawaii
- *MCARDLE, H. ROY, *Director, University Placement and Career Planning*
- MCPHERSON, MARY LOU, *Asst. Spec. in Student Personnel, Housing*
B.S. 1933, Kansas State; M.A. 1955, Missouri
- MICHEL, JOHN, *Director, Counseling and Testing Center*
B.A. 1950, Lehigh; M.A. 1951, Georgia; PH.D. 1958, Texas
- NAKAMURA, DOROTHY R., *Jr. Spec. in Student Personnel, Housing*
B.ED. 1956, Hawaii
- O'REILLY, JOSEPH P., *Asst. in Student Personnel, CTC*
B.S. 1962, Tufts; M.A. 1966, Hawaii
- PAULING, LINUS C., *Jr. Spec. (Psychiatrist), CTC*
M.D. 1952, Harvard
- SAKAMAKI, LEIGH, *Spec. (Psychiatrist), CTC*
B.S. 1955, M.D. 1959, Michigan
- SAKATA, CARL T., *Asst. Spec. in Student Personnel, Admissions and Records*
B.A. 1951, Grinnell; M.A. 1961, George Washington
- SHERMAN, RUTH, *Jr. Spec. in Student Personnel, CTC*
B.A. 1942, Douglass; M.A. 1964, Hawaii
- SULLIVAN, CAROL, *Head Resident, Frear Hall*
B.ED. 1966, M.ED. 1967, Hawaii
- TANIGUCHI, SHIRLEY T., *Jr. Spec. in Student Personnel, Housing*
B.B.A. 1949, Hawaii
- TATSUGUCHI, EMMELINE S., *Head Resident, Gateway*
B.A. 1963, Hawaii
- USHIJIMA, MARGARET, *Asst. Spec. in Student Personnel (Hilo)*
B.A. 1949, Illinois Wesleyan; M.S.S. 1952, Smith
- WERY, KATHERINE H., *Jr. Spec. in Student Personnel, Financial Aids*
B.A. 1944, Westhampton
- WONG, CAROLINA D., *University Physician*
M.D. 1941, Santo Tomas
- WONG, LAWRENCE Y. W., *University Physician*
B.S. 1951, M.S. 1953, M.D. 1958, Michigan
- YAMASAKI, BETTE T., *Jr. Spec. in Student Personnel, Financial Aids*
B.A. 1965, Hawaii; M.A. 1967, Colgate
- ZEIGLER, A. LEE, *Director, International Student Office*
B.A. 1949, Stanford; M.S. 1950, New York

* Degrees listed under "Instruction."

RESEARCH UNITS AND FACILITIES

Harold L. Lyon Arboretum

- *SAGAWA, YONEO, *Director*
 *BAKER, GLADYS E., *Botanist*
 *BRISTOL, MELVIN L., *Assistant Botanist*
 CARLQUIST, SHERWIN, PH.D., *Research Affiliate*
 Professor of Botany, Claremont Graduate
 School, California
 CLAY, HORACE F., *Horticulturist*
 B.S. 1950, Hawaii; M.S. 1952, Massachusetts;
 PH.D. 1958, Chicago
 *CUTTING, WINDSOR C., *Pharmacologist*
 *FRIEND, DOUGLAS J. C., *Associate Botanist*
 GILLETT, GEORGE W., PH.D., *Research Affiliate*
 Professor of Botany and Director of Botanical
 Gardens, University of California, Riverside
 *KAMEMOTO, HARUYUKI, *Horticulturist*
 *KEFFORD, NOEL P., *Botanist*
 *MATSUMOTO, HIROMU, *Agricultural Biochemist*
 *NORTON, TED R., *Pharmacologist*
 *SCHEUER, PAUL J., *Chemist*
 *SMITH, ALBERT C., *Botanist*
 STERN, WILLIAM L., PH.D., *Research Affiliate*
 Professor of Botany, University of Maryland
 THORNE, ROBERT F., PH.D., *Research Affiliate*
 Professor of Botany, Claremont Graduate
 School, California
 WAGNER, WARREN H., PH.D., *Research Affiliate*
 Professor of Botany and Director of Botanical
 Gardens, University of Michigan

Economic Research Center

- *MIKLIUS, WALTER, *Director*
 ALBRECHT, WILLIAM H., Jr., *Economist*
 B.ED. 1965, Hawaii
 *CHAU, LAURENCE, *Asst. Economist*
 *COMITINI, SALVATORE, *Assoc. Economist*
 HARRIS, JANE, Jr., *Economist*
 B.A. 1961, Iowa; Cert. in Bus. Admin. 1962,
 Harvard
 *POLLACK, RICHARD, *Asst. Economist*
 *PSACHAROPOULOS, GEORGE, *Asst. Economist*
 SHANG, YUNG-CHENG, Jr., *Economist*
 B.A. 1958, Taiwan Provincial Chung-Hsing;
 M.S. 1962, Southern Illinois

Education Research and Development Center

- *RYANS, DAVID G., *Director*
 *ADKINS, DOROTHY C., *Researcher*
 *BALLIF, BONNIE L., *Asst. Researcher*
 *BHUSHAN, VIDYA, *Asst. Researcher*
 *BROWNELL, JOHN A., *Researcher*
 CROWELL, DORIS C., *Asst. Researcher*
 *DUNN-RANKIN, PETER, *Asst. Researcher*
 FIEL, GAIL A., *Asst. in Research*
 FUJINAGA, FAY S., *Asst. in Research*
 HERMAN, HANNAH S., Jr., *Researcher*
 HUSEN, TORSTEN, *Visiting Researcher*
 *KING, ARTHUR R., JR., *Researcher*
 *LETON, DONALD A., *Researcher Affiliate*
 LOVELESS, PHYLLIS, *Asst. in Research*
 *NIYEKAWA, AGNES M., *Assoc. Researcher*
 PAVELKO, ANN E., *Asst. in Research*
 *REID, IAN E., *Assoc. Researcher*
 *STAATS, ARTHUR W., *Researcher Affiliate*
 WILSON, THELMA E., *Preschool Teacher*

Center for Engineering Research

- *HARRENSTIEN, HOWARD P., *Director*
 *FAND, RICHARD M., *Professor of Mechanical
 Engineering*
 *JORDAN, JAN M., *Assoc. Professor of Civil
 Engineering*
 LEE, THEODORE, *Assoc. Researcher, Look
 Laboratory*
 B.S. 1947, National Peiyang University; M.S.
 1960, Iowa
 *PETERSON, W. WESLEY, *Professor of Electrical
 Engineering*
 *SZILARD, RUDOLPH, *Professor of Civil Engineering*

* Degrees listed under "Instruction."

Hawaii Agricultural Experiment Station

- *WILSON, C. PEAIRS, *Director*
- *AKAMINE, ERNEST K., *Assoc. Plant Physiologist*
- ALICATA, JOSEPH E., *Parasitologist*
B.A. 1927, Grand Island College; M.A. 1928,
Northwestern; PH.D. 1934, George Washington
- *ARAGAKI, MINORU, *Assoc. Plant Pathologist*
- ASHDOWN, DONALD, *Assoc. Entomologist*
B.S. 1942, Utah State; PH.D. 1948, Cornell
- AWADA, MINORU, *Asst. Plant Physiologist*
B.S. 1938, M.S. 1949, Hawaii
- *BARTHOLOMEW, DUANE P., *Asst. Agronomist*
- *BEARDSLEY, JOHN W., *Asst. Entomologist*
- *BEATON, JOHN R., *Nutritionist*
- *BESS, HENRY A., *Sr. Entomologist*
- BEVENEUE, ARTHUR, *Assoc. Biochemist*
B.S. 1946, California
- BOWEN, JOHN E., *Asst. Plant Physiologist*
B.A. 1960, Western Maryland College; M.S.
1963, PH.D. 1965, Maryland
- *BRIWBAKER, JAMES L., *Horticulturist*
- *BROOKS, COY C., *Animal Scientist*
- *BUDDENHAGEN, IVAN W., *Plant Pathologist*
- CAMPBELL, CHARLES M., *Asst. Animal Scientist*
B.S. 1958, Texas A & M; M.S. 1960, Idaho;
PH.D. 1964, Oklahoma State
- CAVALETTO, CATHERINE G., *Jr. Food Technologist*
B.S. 1939, California
- CHINN, JAMES T., *Jr. Horticulturist*
B.S. 1957, Hawaii; M.S. 1962, California
- *COBB, ESTEL H., *Animal Scientist*
- *COLLIER, WILLIAM L., *Asst. Agricultural Economist*
- *COHL, BRUCE J., *Plant Physiologist*
- CROZIER, JOSEPH, *Asst. Horticulturist*
B.S. 1956, Florida; M.S. 1960, PH.D. 1963,
Cornell
- *DAVIDSON, JACK R., *Agricultural Economist*
- *EKERN, PAUL, *Soil Scientist*
- *EL-SWAIFY, SAMIR A., *Asst. Soil Scientist*
- EMERSON, MARY L., *Asst. in Agricultural Biochemistry*
B.A. 1967, Texas
- *FOX, ROBERT L., *Soil Scientist*
- *FRANK, HILMER A., *Assoc. Food Technologist*
- FUKUNAGA, EDWARD T., *Agriculturist*
B.S. 1934, M.S. 1935, Hawaii
- FURUMOTO, HOWARD H., *Assoc. Animal Pathologist*
B.S. 1947, M.S. 1948, D.V.M. 1950, Kansas
State; PH.D. 1966, Illinois
- *GILBERT, JAMES C., *Horticulturist*
- *GOTO, SHOSUKE, *Assoc. Plant Pathologist*
- *GREEN, RICHARD E., *Asst. Agronomist*
- *HAMILTON, RICHARD A., *Horticulturist*
- *HARAMOTO, FRANK H., *Asst. Entomologist*
- *HARDY, D. ELMO, *Sr. Entomologist*
- *HARTMANN, RICHARD W., *Asst. Horticulturist*
- *HERRICK, ORPHA, *Asst. Home Economist*
- *HERRICK, RAYMOND B., *Assoc. Poultry Scientist*
- HIGA, STANLEY Y., *Asst. in Entomology*
B.S. 1961, Hawaii
- *HILKER, DORIS M., *Asst. Nutritionist*
- *HOLTZMANN, OLIVER V., *Assoc. Plant Pathologist*
- HUGHES, RUFUS B., *Agricultural Economist*
B.S. 1947, M.S. 1949, Oklahoma A & M;
PH.D. 1959, Chicago
- HUNT, ANN R., *Asst. in Agricultural Biochemistry*
B.A. 1966, Hawaii
- HUNTER, JAMES, *Asst. Plant Pathologist*
B.S. 1961, Kenne State; PH.D. 1964, New
Hampshire
- *HYLIN, JOHN W., *Assoc. Biochemist*
- IKAWA, HARUYOSHI, *Asst. Soil Scientist*
B.S. 1951, M.S. 1956, Hawaii
- *ISHII, MAMORU, *Assoc. Plant Pathologist*
- ISHIZAKI, STANLEY M., *Jr. Animal Scientist*
B.S. 1959, M.S. 1963, Hawaii
- ITO, PHILLIP J., *Asst. Horticulturist*
B.S. 1958, Hawaii; PH.D. 1963, Minnesota
- *IWANAGA, ISAAC I., *Asst. Animal Scientist*
- IZUNO, TAKUMI, *Assoc. Horticulturist*
B.S. 1950, Hawaii; PH.D. 1960, Minnesota
- *KAMEMOTO, HARUYUKI, *Horticulturist*
- *KANEFIRO, YOSHINORI, *Assoc. Soil Scientist*
- KAWANO, YOSHIHIKO, *Asst. Biochemist*
B.A. 1943, Nihon University; M.S. 1957,
Hawaii
- *KEFLER, JOSEPH T., *Assoc. Agricultural Economist*
- *KINCH, DONALD M., *Agricultural Engineer*
- KLFMM, BARBARA E., *Asst. in Agricultural Biochemistry*
A.B. 1964, Ohio Wesleyan
- KUNISAKI, JOHN T., *Jr. Horticulturist*
B.S. 1960, M.S. 1964, Hawaii
- *LARSON, ARNOLD B., *Assoc. Agricultural Economist*
- LEE, JAMES H. F., *Jr. Animal Scientist*
B.S.C. 1965, M.S.C. 1967, British Columbia
- *LICHTON, IRA J., *Assoc. Nutritionist*
- LONG, CHARLES R., *Jr. Plant Physiologist*
B.S. 1953, M.S. 1966, California
- MARDERS, WILLIAM G., *Rural Sociologist*
B.S. 1929, California; M.S. 1954, Chicago;
PH.D. 1964, California
- *MATSUMOTO, HIROMU, *Biochemist*
- *MITCHELL, WALLACE C., *Assoc. Entomologist*
- MORITA, KIYOICHI, *Jr. Animal Scientist*
B.S. 1953, Hawaii
- *MOY, JAMES H., *Asst. Food Technologist*
- *NAKASONE, HENRY Y., *Assoc. Horticulturist*
- NAKATA, SHIGERU, *Assoc. Plant Physiologist*
B.S. 1946, M.S. 1949, PH.D. 1965, Hawaii
- *NAMBA, RYOJI, *Assoc. Entomologist*
- *NISHIDA, TOSHIYUKI, *Entomologist*
- OPRERO, FAUSTINO P., *Jr. Plant Pathologist*
B.S. 1962, Philippines; M.S. 1964, Hawaii
- OGATA, JAMES N., *Jr. Chemist*
B.S. 1956, Hawaii
- *PALAFOX, ANASTACIO L., *Asst. Poultry Scientist*
- PARK, ROBERT, *Asst. in Entomology*
B.S. 1965, Hawaii
- *PHILIPP, PERRY F., *Agricultural Economist*

* Degrees listed under "Instruction."

- PLUCKNETT, DONALD L., *Assoc. Agronomist*
B.S. 1953, M.S. 1957, Nebraska; PH.D. 1961,
Hawaii
- *POOLE, RICHARD T., *Asst. Horticulturist*
- *PUTMAN, EDISON W., *Assoc. Plant Physiologist*
- REIMER, DIEDRICH, *Assoc. Animal Scientist*
B.S.A. 1950, Manitoba; M.S. 1955, PH.D. 1959,
Minnesota
- *ROMANOWSKI, ROMAN R., *Assoc. Horticulturist*
- *ROSS, EDWARD, *Food Technologist*
- *ROSS, ERNEST, *Poultry Scientist*
- *ROTAR, PETER P., *Assoc. Agronomist*
- *SAGAWA, YONEO, *Horticulturist*
- *SANFORD, WALLACE G., *Agronomist*
- *SCHWITTERS, SYLVIA, *Asst. in Home Economics*
- *SCOTT, FRANK S., *Agricultural Economist*
- *SHELLENBERGER, F. A., Jr., *Agricultural Engineer*
- *SHERMAN, G. DONALD, *Assoc. Director and
Senior Soil Scientist*
- *SHERMAN, MARTIN, *Entomologist*
- SHIGEURA, GORDON T., *Assoc. Horticulturist*
B.S. 1939, M.S. 1947, Hawaii
- *SILVA, JAMES A., *Asst. Soil Scientist*
- *SPIELMANN, HEINZ, *Assoc. Agricultural
Economist*
- *STANFAL, BLUEBELL R., *Asst. Nutritionist*
- *STANLEY, RICHARD W., *Assoc. Animal Scientist*
- *SWINDALE, LESLIE D., *Soil Scientist*
- *TAKAHASHI, CHARLENE, *Asst. in Home Economics*
- *TAKAHASHI, MAKOTO, *Assoc. Agronomist*
- *TAMASHIRO, MINORU, *Assoc. Entomologist*
- TAMIMI, YUSUF N., *Asst. Agronomist*
B.S. 1957, Purdue; M.S. 1959, New Mexico
State; PH.D. 1964, Hawaii
- TANAKA, JACK S., *Asst. Horticulturist*
B.S. 1951, M.S. 1960, Hawaii
- THOMPSON, JOHN R., *Assoc. Agronomist*
B.S. 1949, M.S. 1952, Minnesota; PH.D. 1964,
Iowa State
- *TRUJILLO, EDUARDO E., *Asst. Plant Pathologist*
- UCHIDA, RAYMOND S., *Asst. in Agronomy and
Soil Science*
B.S. 1967, Hawaii
- *UEHARA, GORO, *Assoc. Soil Scientist*
- *URATA, UKIO, *Asst. Agronomist*
- *WANG, JAW-KAI, *Assoc. Agricultural Engineer*
- *WARNER, ROBERT M., *Horticulturist*
- WATANABE, ROGER T., Jr., *Soil Scientist*
B.S. 1956, Hawaii
- WATANABE, YOSHIO, Jr., *Plant Physiologist*
B.S. 1958, Hawaii
- *WAYMAN, OLIVER, *Animal Scientist*
- WENKAM, NAO, *Asst. Nutritionist*
B.S. 1948, M.S. 1950, Chicago
- WHITNEY, ARTHUR S., *Asst. Agronomist*
B.S. 1955, Ohio; M.S. 1958, Cornell; PH.D.
1966, Hawaii
- *WU, I-PAI, *Asst. Agricultural Engineer*
- *YAMAMOTO, HARRY Y., *Assoc. Food Technologist*
- YEE, GLADYS L. N., *Asst. in Plant Physiology*
B.S. 1967, Hawaii
- *YOUNG, FRANKLIN, *Assoc. Nutritionist*
- *YOUNG, HONG YIP, *Assoc. Agronomist*

Hawaii Institute of Geophysics

- *WOOLLARD, GEORGE P., *Director*
- *ADAMS, CARL, *Asst. Meteorologist*
- *ADAMS, WILLIAM M., *Seismologist*
- *ANDERMANN, GEORGE, *Asst. Chemist*
- *ANDREWS, JAMES E., *Asst. Oceanographer*
- BARKLEY, RICHARD A., PH.D., *Research Affiliate
Oceanographer, Honolulu Biological
Laboratory, Bureau of Commercial Fisheries*
- BARNES, WILBUR B., JR., *Research Associate in
Geophysics*
- BENNETT, EDWARD B., *Asst. Oceanographer*
B.A. 1955, M.A. 1958, British Columbia
- CAMPBELL, JOHN F., Jr., *Geophysicist*
B.S. 1962, M.S. 1966, Hawaii
- *CHAMBERLAIN, THEODORE K., *Asst. Geological
Oceanographer*
- *DANIELSEN, EDWIN F., *Meteorologist*
- *DAUGHERTY, KENNETH I., *Asst. to Director and
Assoc. Geodesist*
- DAVIS, DAN, M.S., *Research Affiliate
Geologist, U.S. Geological Survey*
- DECKER, ROBERT WAYNE, D.S.C., *Research
Affiliate
Associate Professor, Dartmouth College, and
Geophysicist, Hawaii Volcano Observatory*
- DEHLINGER, PETER, PH.D., *Research Affiliate
Geophysicist, Oregon State*
- *DUCE, ROBERT A., *Asst. Chemist*
- ELLIS, HOWARD, B.S., *Research Affiliate
Physicist in Charge, Mauna Loa Observatory,
U. S. Weather Bureau*
- *EL SWAIFY, SAMIR ALY, *Asst. Soil Scientist*
- EPPLEY, ROBERT A., B.S., *Research Affiliate
Seismologist, U.S. Coast and Geodetic Survey*
- *FAN, POW-FOONG, *Asst. Geophysicist*
- FISHER, RICHARD V., PH.D., *Research Affiliate
Associate Professor, California (Santa Barbara)*
- FULLERTON, CHARLES M., *Asst. Geophysicist*
B.S. 1954, Oklahoma; M.S. 1964, PH.D. 1966,
New Mexico Institute of Mining and
Technology
- *FURUMOTO, AGUSTINE S., *Asst. Seismologist*
- *GALLAGHER, BRENT, *Asst. Oceanographer*
- GLOVER, RICHARD B., *Asst. Geochemist*
B.S.C. 1957, PH.D. 1960, Bristol University
(England)
- GRAEFE, VOLKER, *Asst. Geophysicist
Diplom Vor Examien 1959, Gottingen;
PH.D. 1964, Kiel*

* Degrees listed under "Instruction."

- *GROVES, GORDON W., *Oceanographer*
HO, FRANCIS P. W., *Asst. Meteorologist*
B.S. 1960, M.S. 1963, Hawaii
- HOLSTEN, WILLIAM G., *Asst. Geophysicist*
B.A. 1961, California (Santa Barbara)
- HOULTON, EDWARD C., *Research Associate in Geophysics*
- ICHINOSF, WILLIAM N., Jr., *Geophysicist*
B.A. 1954, Hawaii
- JFFERRIES, CHARMIAN, *Programmer Supervisor*
B.S.C. 1949, Western Australia
- JOHNSON, ROCKNE, *Assoc. Geophysicist*
B.S. 1952, Washington
- *KHAN, MOHAMMAD A., *Asst. Professor of Geodery*
- KNOWLES, LEONARD I., *Special Asst. to Director*
B.S. 1958, M.S. 1960, Arkansas
- KROENKE, LOREN, JR., *Geophysicist*
B.S. 1960, Wisconsin
- LADD, HARRY S., PH.D., *Research Affiliate*
Principal Geologist, U.S. Geological Survey
- LAUDON, THOMAS S., PH.D., *Research Affiliate*
Geologist, Wisconsin State University
- *LAURILA, SIMO H., *Geodesist*
- LAVIN, DELIA M., Jr., *Geophysicist*
B.S. 1939, Wisconsin
- *LAVOIE, RONALD L., *Asst. Meteorologist*
- LAYFIELD, JAMES D., *Research Associate*
B.S. 1964, Alfred (New York)
- LI, LAN HUEL, Jr., *Programmer*
B.A. 1959, Tunghai University (China);
B.A. 1965, M.B.A. 1967, Hawaii
- LONGFIELD, RICHARD, Jr., *Geophysicist*
- LOOMIS, HAROLD E., PH.D., *Research Affiliate*
Mathematician Environmental Science
Services Administration
- *MACDONALD, GORDON A., Sr., *Geologist and Geophysicist*
- MACHISKY, LAWRENCE F., Jr., *Geophysicist*
B.S. 1953, Wisconsin
- *MALAHOFF, ALEXANDER, *Asst. Geophysicist*
- *MANGHNANI, MURLI H., *Asst. Geophysicist*
- MASON, RONALD, M.Sc., *Research Affiliate*
Geophysicist, Imperial College, London,
England
- MATO, GEORGE K., *Asst. to Director (Fiscal Matters)*
- McCAFFE, ETHEL U., Jr., *Geophysicist*
B.S. 1939, Hawaii
- MEYER, ROBERT P., PH.D., *Research Affiliate*
Geophysicist, University of Wisconsin
- MICHEL, JEAN G., *Research Associate*
- MILLER, GAYLORD R., PH.D., *Research Affiliate*
Oceanographer, Environmental Science
Services Administration
- *MOBERLY, RALPH M., Jr., *Assoc. Geologist*
- MONGES-CALDERA, JULIO (ING.), M.S., *Research Affiliate*
Geophysicist, Universidad Nacional de Mexico
- *NAUGHTON, JOHN J., *Chemist*
- NORRIS, ROGER A., Jr., *Geophysicist*
B.A. 1960, M.S. 1963, Hawaii
- OSTENSO, NED, PH.D., *Research Affiliate*
Assistant Professor of Geology, University of
Wisconsin
- PALMER, ROBERT Q., *Research Affiliate*
Chief, Hilo Harbor Model Branch, U. S. Army
Engineer District, Honolulu
- *PANKIWSKY, J., KOST A., *Asst. Geologist*
- POWERS, HOWARD A., PH.D., *Research Affiliate*
Scientist in Charge, Hawaii Volcano
Observatory
- PRICE, SAUL, M.S., *Research Affiliate*
Regional Climatologist, U.S. Weather Bureau,
Honolulu
- PRYOR, TAYLOR A., A.B., *Research Affiliate*
Director, Sea Life Park, Honolulu
- *RAMAGE, COLIN S., *Assoc. Director and Meteorologist*
- *RESIG, JOHANNA M., *Asst. Micropaleontologist*
- REX, ROBERT WALTER, PH.D., *Research Affiliate*
Geologist, University of California (Riverside)
- RHODES, RICHARD R., Jr., *Geophysicist*
B.F.A. 1958, Chicago
- *ROSE, JOHN C., *Assoc. Geophysicist*
- RYAN, THEODORE V., M.S., *Research Affiliate*
Chief, Environmental Science Services
Administration, Seattle Oceanographic
Laboratory
- *SADLER, JAMES C., *Assoc. Meteorologist*
- SCHILBACH, DAVID R., *Research Associate*
- SHAFFER, GERALD EDWARD, *Research Associate in Geophysics*
- SNODGRASS, FRANK E., M.S., *Research Affiliate*
Associate Research Engineer, Scripps Institution
of Oceanography
- SOKOLOWSKI, THOMAS J., *Research Affiliate*
Geophysicist, Environmental Science Services
Administration, Coast and Geodetic Survey
- SPRAGUE, LUCIAN, PH.D., *Research Affiliate*
Deputy Area Director, U. S. Bureau of
Commercial Fisheries
- STEARNS, HAROLD T., PH.D., *Research Affiliate*
Consulting Geologist, East Palo Alto, California
- STICE, GARY D., *Asst. Geophysicist*
B.S. 1961, Stanford; PH.D. 1966, Hawaii
- *STROUP, EDWARD D., *Assoc. Oceanographer*
- *SUTTON, GEORGE H., *Geophysicist*
- TAYLOR, HOWARD F., *Research Associate in Geophysics*
- TAYLOR, RONALD C., Jr., *Meteorologist*
B.A. 1959, California (Los Angeles)
- THOMAS, CHARLES W., *Asst. Director*
B.S. 1925, Coast Guard Academy; A.M. 1953,
Washington; M.S. 1959, Maryland
- THOMPSON, NOEL J., *Research Associate in Geophysics*
B.S. 1951, Wisconsin
- VITOUSEK, MARTIN J., *Assoc. Geophysicist*
B.S. 1949, PH.D. 1955, Stanford
- WOODCOCK, ALFRED H., *Meteorologist*
D.S.C. (Hon.) 1963, Long Island
- *WORKMAN, EVERLY J., *Meteorologist*
- WORTHLEY, LEIGHTON E., JR., *Asst. Meteorologist*
B.S. 1942, California (Los Angeles)
- *WYRTKI, KLAUS, *Oceanographer*
- YOUNG, EDITH H., Jr., *Researcher*
A.B. 1930, Oberlin

* Degrees listed under "Instruction."

Hawaii Institute of Marine Biology

- *BROCK, VERNON E., *Director*
BALDWIN, WAYNE J., *Asst. Marine Biologist*
B.S. 1952, Humboldt State
- *BANNER, ALBERT H., *Zoologist*
- *CHAVE, KEITH E., *Oceanographer*
CLARKE, THOMAS A., *Asst. Marine Biologist*
B.S. 1962, Chicago; PH.D. 1968, California (San Diego)
- *CLUTTER, ROBERT I., *Assoc. Marine Biologist*
- *COMITINI, SALVATORE, *Assoc. Economist*
- *GUNDERSEN, KAARE R., *Assoc. Microbiologist*
- *DOTY, MAXWELL S., *Botanist*
HASHIMOTO, DAVID Y., *Research Associate*
B.S. 1963, Hawaii
HASHIMOTO, WILLIAM Y., *Research Associate*
- HELFRICH, PHILIP, *Assoc. Director, Assoc. Marine Biologist*
B.S. 1951, Santa Clara; PH.D. 1958, Hawaii
- *HSIAO, SIDNEY C., *Zoologist*
- *KAMEMOTO, FRED I., *Assoc. Zoologist*
- *KAY, E. ALISON, *Assoc. Marine Biologist*
- KEENE, EMILE H., *Research Associate*
B.S. 1937, Washington
- KOSAKI, THOMAS I., *Asst. in Marine Biology*
B.S. 1959, Utah
- LOW, LIONEL Y. H., *Jr. Marine Chemist*
M.S.C. 1965, Diploma of Education 1966, Univ. Canterbury, New Zealand
- MACIOLEK, JOHN A., *Asst. Zoologist*
B.S., 1950, Oregon State; M.S. 1953, California; PH.D. 1961, Cornell
- *MURPHY, GARTH I., *Biological Oceanographer*
- OHSHIKA, HIDEYO, *Asst. Pharmacologist*
B.S. 1959, M.D. 1966, Sapporo Medical College, Japan
- PEPPER, SHAREE J., *Asst. in Marine Biology*
B.A. 1965, San Diego State; M.S. 1967, Hawaii
- RAMOS, CIRVALINA B., *Asst. in Marine Chemistry*
B.S. CHEM. ENG. 1963, Mapua Institute of Technology, Philippines
- RANDALL, JOHN E., *Marine Biologist*
B.A. 1950, California (Los Angeles); PH.D. 1955, Hawaii
- *REESE, ERNST S., *Assoc. Zoologist*
- STRUHSAKER, JEANNETTE W., *Asst. Marine Biologist*
B.A. 1958, Western Washington College; PH.D. 1966, Hawaii
- TAKAHASHI, WATARU, *Jr. Marine Chemist*
B.A. 1957, Hawaii; M.A. 1959, Indiana
- *TESTER, ALBERT L., *Sr. Zoologist*
- *TOWNSLEY, SIDNEY J., *Zoologist*
- WALTERS, CHARLES K., *Jr. Marine Biologist*
M.S. 1966, Hawaii
- YASUMOTO, TAKESHI, *Asst. Marine Chemist*
B.S. 1957, M.S. 1959, PH.D. 1966, Tokyo
- RICHARDS, JOHN B., *Asst. in Marine Biology*
A.A. 1963, Sacramento City College; B.A. 1966, California (Santa Barbara)

Institute for Astronomy Staff

- *JEFFERIES, JOHN T., *Director*
ACTON, LOREN W., *Assoc. Astronomer*
B.S. 1959, Montana State College; PH.D. 1965, Colorado
- ANDERSON, JAMES L., JR., *Research Associate*
B.E.S.E.E. 1961, Brigham Young
- ANGELL, ROGER G., *Research Associate*
B.S. 1966, Hawaii
- ARMSTRONG, DAVID L., *Research Associate*
B.S. 1962, Puget Sound
- ARMSTRONG, JERRY E., *Research Associate*
B.S. 1965, Puget Sound
- BARCLAY, JAMES C., *Technician*
- BEESON, DAVID E., *Research Associate*
A.B. 1962, Indiana Central College; M.S. 1967, Purdue
- BISHOP, GLAUCOS, *Technician*
- BISHOP, ROBERT L., *Technician*
- *BOESGAARD, ANN M., *Asst. Professor*
BOESGAARD, HANS, *Research Associate (Observatory Engineer)*
M.E. 1952, Copenhagen Higher Institute
- *BONSACK, WALTER K., *Assoc. Professor*
- BRADY, BARBARA A., *Administrative Asst.*
B.A. 1960, Midwestern
- BRUNS, KAMALU A. C., *Research Associate*
- BYRNE, JOSEPH F., *Executive Officer*
A.B. 1942, California (Berkeley)
- CARTER, JOAN C., *Research Associate*
B.A. 1966, American
- CHEIGH, FRANCIS, *Research Associate*
B.A. 1962, Hawaii
- DIETZ, RICHARD D., *Asst. Astronomer*
B.S. 1959, Caltech; PH.D. 1965, Colorado
- DILLEY, CHESTER A., *Research Associate*
A.A. 1960, Maunaloa
- EMARINE, LESTER L., *Technician (Supervisor, Instrument Shop)*
- ENDO, JACK Y., *Administrative Officer*
B.B.A. 1960, Hawaii
- ENOS, ERNEST B., *Technician*
- FISHER, RICHARD R., *Asst. Researcher*
B.A. 1961, Grinnell; PH.D. 1965, Colorado
- GRAHAM, ROY T., *Technician (Supervisor, Maintenance)*

* Degrees listed under "Instruction."

- HARRIS, DONALD E., *Research Associate*
B.A. 1961, Hawaii
- HARWOOD, JAMES V., *Research Associate*
A.B. 1958, Columbia
- HATHAWAY, GLEN H., *Technician (Mountain Superintendent)*
- HESEMAN, HENRY I., JR., *Research Associate*
B.S.E.E. 1928, Purdue
- HENSLEY, CHARLOTTE J., *Research Associate*
- HILL, RAYMOND C., *Research Associate*
B.A. 1964, Maryland
- HIPKISS, WILLIAM W., *Technician*
- HULTQUIST, HARRY D., *Research Associate*
- HUTCHISON, PETER R., *Research Associate*
- KAMETANI, TOMEO, *Research Associate*
A.A.S. 1955, Milwaukee School of Engineering
- KAWAMURA, SETSUJI, *Technician*
A.A. 1940, Indiana Technical College
- KING, MARY J., *Technician*
- KOWALSKI, ALEXANDER T., *Research Associate*
- LARSON, HAZEL E., *Administrative Officer*
- LEONG, DARLENE D., *Research Associate*
B.A. 1965, Hawaii
- LOH, JO ANN BAKER, *Research Associate*
B.A. 1963, Colorado
- LU, WAYNE M. T., *Technician*
- MCCABE, MARIÉ K., *Asst. Astronomer*
B.S. 1945, New Zealand; M.S. 1955, London
- MANN, GLENN R., *Research Associate*
B.A. 1960, Colorado
- MANN, HERBERT M., *Research Associate*
- MENON, THUPPALAY K., *Astronomer*
B.S.C. 1947, India; S.M. 1953; PH.D. 1956, Harvard
- MILLER, KENNETH R., *Technician*
- MIYABARA, JUDITH M., *Admin. Officer*
B.B.A. 1965, Hawaii
- MIYASHIRO, GLENN, *Technician*
- NOLT, IRA G., *Asst. Astronomer*
B.S. 1960, Franklin & Marshall College; PH.D. 1967, Cornell
- O'BRIEN, LEONARD P., *Technician*
- OGURA, LIVIAN, *Technician*
- *ORRALL, FRANK Q., *Professor*
- PHELPS, THOMAS M., *Research Associate*
- PILARSKI, HARRY, *Research Associate*
A.S.E.E., American Institute of Technology
- ROTH, HERMAN, *Technician*
- *SINTON, WILLIAM M., *Professor*
- SJOBERG, DEBORAH J., *Research Associate*
B.A. 1955, California (Los Angeles)
- STAHLBERGER, WERNER E., *Technician*
- WEINBERG, JERRY L., *Assoc. Astronomer*
B.S. 1958, St. Lawrence; PH.D. 1963, Colorado
- WILLIAMSON, RAY A., *Asst. Astronomer*
A.B. 1961, Johns Hopkins; PH.D. 1968, Maryland
- WOLFF, SIDNEY C., *Asst. Astronomer*
B.A. 1962, Carleton; PH.D. 1966, California (Berkeley)
- WOLSTENCROFT, R. DAVID, *Assoc. Professor*
B.S.C. 1959, University College of London; PH.D. 1962, Cambridge
- *ZIRKER, JACK B., *Professor*

Laboratory of Sensory Sciences

- *DIAMOND, A. LEONARD, *Psychophysicist, Director*
- BATKIN, STANLEY, *Affiliate Neurologist*
Kaiser Foundation Hospital, Honolulu
- KATSUKI, YASUJI, *Sr. Visiting Scientist, Neurophysiologist*
- *PIETTE, LAWRENCE H., *Affiliate, Biophysicist*
- UTTAL, WILLIAM, *Visiting Scientist, Psychophysicist*
- *VON BEKESY, GEORG, *Behavioral Physiologist, Research Director*
- YANAGISAWA, KEIJI, *Visiting Scientist, Neurophysiologist*

Land Study Bureau

- *BAKER, HAROLD L., *Director and Land Economist*
- AWAL, EUNICE L., *Jr. Spec. in Cartography*
Prof. Cert. 1951, B.F.A. 1952, Pratt Institute
- CHING, ARTHUR Y., *Jr. Spec. in Land Classification*
B.S. 1930, Hawaii
- FUJIMURA, FAITH N., *Jr. Spec. in Cartography*
B.A. 1950, Hawaii
- HAUGHTON, FRED A., JR., B.S., *Research Affiliate*
State Conservationist, Soil Conservation Service
- MURABAYASHI, EDWIN T., JR., *Spec. in Land Classification*
B.S. 1956, Washington State
- NELSON, ROBERT E., B.S., *Research Affiliate*
Director, Institute of Pacific Islands Forestry, U. S. Forest Service
- PETERSON, L. KENNETH, B.S., *Research Affiliate*
Resident Engineer, U. S. Geological Survey, Honolulu
- SAHARA, TAMOTSU, *Spec. in Land Classification*
B.S. 1948, Hawaii

* Degrees listed under "Instruction."

Pacific and Asian Linguistics Institute

- *MCKAUGHAN, HOWARD P., *Director*
 CARROLL, VERN, *Visiting Asst. Researcher*
 B.A. 1959, M.A. 1962, Yale; B.A. 1961,
 M.A. 1966, Cambridge; PH.D. 1966, Chicago
- HSU, ROBERT W., *Jr. Linguist*
 B.A. 1957, Cambridge; M.S. 1960, Georgetown
- O'GRADY, GEOFFREY N., *Visiting Assoc. Linguist*
 B.A. 1959, Sydney; PH.D. 1963, Indiana
- PETERS, ANN MARIE, *Asst. Linguist*
 A.B. 1959, Bryn Mawr; M.A. 1961, PH.D. 1966,
 Wisconsin
- *TOPPING, DONALD M., *Asst. Professor of
 Linguistics*

Pacific Biomedical Research Center

- *ROGERS, TERENCE A., *Director*
 ARNOLD, JOHN M., *Asst. Professor of Cytology*
 B.A. 1958, PH.D. 1963, Minnesota
- BATKIN, STANLEY, *Clinical Professor*
 B.S. 1933, New York; M.D. 1944, Edinburgh
- BREITNER, HANS I. O., *Assoc. Chemist*
 Vordel'vom 1941, Dipl.-Chem 1942, PH.D.
 1946, Frankfurt, Germany
- *CASARETT, LOUIS J., *Assoc. Professor of
 Pharmacology*
- *CHUNG, CHIN SIK, *Biostatistician*
- *CROWELL, DAVID H., *Professor of Psychology*
- *CUTTING, WINDSOR C., *Professor of
 Pharmacology*
- FRYER, GLADYS, *Assoc. Epidemiologist,
 Pesticide Prog.*
 B.M., B.S. 1956, Melbourne
- *GIBBONS, IAN, *Assoc. Professor of Cytology*
- *GROTH, HILDE, *Assoc. Professor of Psychology*
- HADFIELD, MICHAEL G.
 A.B. 1959, M.S. 1961, Washington; PH.D. 1967,
 Stanford
- HAMAMOTO, SUSAN T., *Jr. Microbiologist*
 B.A. 1961, Grinnell; M.S. 1963, Brown
- *HAMPTON, IAN F. G., *Asst. Professor of
 Physiology*
- HATHAWAY, JOSEPH C., M.D., *Research Affiliate*
 B.S. 1923, M.S. 1924, M.B. 1925, M.D. 1926,
 Minnesota
- *HOHL, HANS R., *Assoc. Microbiologist*
- *HONG, SUK KI, *Professor of Physiology*
- *KANE, ROBERT E., *Asst. Director*
- KLEMMER, HOWARD W., *Microbiologist*
 B.S. 1949, M.S. 1950, Saskatchewan;
 PH.D. 1954, Wisconsin
- MALONY, NORMA A., *Jr. Researcher*
 B.S. 1948, Philippines; M.S. 1952, Emory;
 PH.D. 1961, Minnesota
- MOORE, TERENCE O., *Asst. Professor of
 Physiology*
 A.B. 1961, A.M. 1963, PH.D. 1966, Missouri
- *NORTON, TED R., *Professor of Pharmacology*
- *PALUMBO, NICHOLAS E., *Assoc. Veterinarian*
- POPE, FREDERICK E., *Researcher in Psychiatry*
 B.A. 1950, Syracuse; M.D. 1956, Amsterdam
- ROTH, ALEXANDER, M.D., *Research Affiliate
 Chief Pediatrician, Kaiser Foundation Hospital,
 Honolulu*
- SETLIFF, JAMES A., *Jr. Researcher in Physiology*
 B.A. 1948, Vanderbilt
- SIEGMUND, HARRY M., *Fiscal Officer*
 B.A. 1957, Columbia College; M.B.A. 1968,
 Hawaii
- SZEKERCES, JOSEPH, *Research Associate*
- THOMAS, DAVID, *Jr. Researcher*
- WEINER, BETSY, *Assoc. Researcher*
 B.S. 1940, Swarthmore Coll.; M.S. 1944,
 M.D. 1944, Chicago
- *WHITTOW, G. CAUSEY, *Professor of Physiology*
- *WOLFF, ROBERT J., *Assoc. Professor of
 Public Health*

School of Public Health

- BELL, BELLA Z., *Jr. Researcher*
 B.A. 1949, Millikin
- BERTELOTTI, ERNEST E., *Assoc. Specialist in
 Public Health*
 B.S. 1952, M.P.H. 1954, California (Berkeley);
 M.S. 1964, San Jose State College
- BILBEN, STEVEN E., *Asst. Researcher*
 B.S. 1965, D.D.S. 1967, Minnesota
- CARDINES, RICHARD J., *Public Health Director*
 B.S. 1955, Trinity College; M.D. 1959,
 Johns Hopkins; M.P.H. 1968, Hawaii
- GRIFFEN, ROBERT A., *Public Health
 Administrator*
 B.S. 1956, Southern California; M.P.H. 1965,
 Michigan
- HASEGAWA, WALLACE K., *Administrative Officer*
 B.B.A. 1965, Hawaii
- HIGUCHI, ASA, *Asst. to the Dean, Business
 Affairs*
 B.S. 1949, M.S.W. 1953, Hawaii
- HORI, DANIEL, *Asst. in Public Health*
 B.S. 1958, Hawaii

* Degrees listed under "Instruction."

- HORI, SETSUOKO, *Asst. in Public Health*
B.A. 1965, Hawaii
- IRVIN, TAHIRIH A., *Asst. in Public Health*
B.A. 1967, Hawaii
- ISHIGO, HAROLD, *Fiscal Aide*
B.B.A. 1965, Hawaii
- KADA, JIMMY M., *Public Health Administrator*
B.S. 1957, M.P.H. 1965, California
(Los Angeles)
- KAWAKONE, ELSIE, *Asst. in Public Health*
B.S. 1954, Hawaii
- MAERTENS, MARY S., *Asst. in Public Health*
B.S. 1944, Women's College (U. of
N. Carolina)
- MARSHALL, KATHRYN E., *Research Associate*
B.A. 1964, Wichita
- MORI, ISHIKO S., *Asst. in Research*
M.D. 1926, Tokyo Women's Medical College
- NAGAI, FAY Y., Jr., *Researcher*
B.S. 1961, Hawaii
- NAGATA, WAYNE K. K., Jr., *Specialist in
Public Health*
B.A. 1966, Hawaii
- OKUBO, SAKIKO, Jr., *Researcher*
B.ED. 1933, M.F.D. 1941, Hawaii
- PEARSON, CAROL, Jr., *Psychologist*
B.A. 1964, Minnesota
- RUNCK, DENNIS W., *Visiting Colleague*
B.A. 1959, St. Olaf College; D.D.S. 1965,
Minnesota
- SIMON, JOYCE, *Public Health Coordinator*
B.S.N. 1956, Columbia Presbyterian School of
Nursing; M.P.H. 1967, Hawaii
- SMITH, DORIS, *Asst. in Research*
B.S. 1955, Cornell
- *SUEHIRO, RICHARD Y., *Assoc. Specialist in
Public Health*
- SUTTER, SHARON K., *Public Health Coordinator*
B.S. 1961, Columbia; M.P.H. 1968, Hawaii
- TAMAYOSE, ALAN S., Jr., *Specialist*
B.B.A. 1968, Hawaii
- TERAUCHI, MILDRED M., *Asst. to Dean,
Student Affairs*
B.A. 1960, Hawaii; M.P.A. 1961, Syracuse
- TILTON, FLOYD H., *Public Health Specialist*
A.B., M.A. 1950, California (Los Angeles);
M.D.C.W. 1954, McGill; M.P.H. 1965,
California (Berkeley)
- UTZINGER, ROBERT, *Assoc. Specialist in
Public Health*
B.S. 1949, Bradley; M.P.H. 1952, Michigan
- WAKASHIGE, FRANCES K., *Asst. in Public Health*
B.A. 1966, Hawaii
- *WIEDERHOLT, NED B., *Assoc. Specialist*
- YAMAOKA, JACQUELINE C., *Research Associate*
B.A. 1967, Hawaii
- YOKOTA, LINDA S., *Research Associate*
B.A. 1967, Hawaii
- YOSHINO, RHODA M., *Asst. in Public Health*
B.S. 1967, Hawaii
- YOSHIZAKI, HELEN, *Asst. in Public Health*
B.S. 1965, Hawaii

Social Science Research Institute

- *LEBRA, WILLIAM P., *Director*
- *BARRIE, EARL, *Asst. Sociologist*
- *BARRINGER, HERBERT, *Assoc. Sociologist*
- BRODIE, DOROTHY, *Asst. in Research*
B.S. 1960, Pennsylvania State
- CAUDILL, WILLIAM A., PH.D., *Research Affiliate*
Laboratory of Socio-Environmental Studies,
National Institute of Mental Health
- D'ARC, CHRISTINE L., Jr., *Researcher*
B.A. 1964, M.A. 1966, Hawaii
- ESSENE, KAREN, *Data Systems Analyst*
B.A. 1962, Cornell
- *GALLIMORE, RONALD, *Assoc. Psychologist*
- GARDNER, LESLIE, *Asst. in Research*
B.A. 1967, Hawaii
- HELLINGER, FRIDA, *Asst. in Research*
- HIGA, MASANORI, *Assoc. Psycho-Linguist*
B.A. 1953, M.A. 1958, Boston; F.D. 1962,
Harvard
- IKEDA, KIYOSHI, PH.D., *Research Affiliate*
Assoc. Professor of Sociology, Oberlin College
- JUNG, RICHARD, *Assoc. Sociologist*
PH.D. 1962, Harvard
- *KANG, HUGH, *Assoc. Historian*
- KANG, SHIN PYO, Jr., *Researcher*
B.A. 1959, M.A. 1964, Seoul National
University
- KATZ, MARTIN, PH.D., *Research Affiliate*
Chief, Special Studies Section,
Psychopharmacology Research Branch,
National Institute of Mental Health
- KAY, KATHLEEN, *Asst. in Research*
B.A. 1964, Michigan
- *KURODA, YASUMASA, *Assoc. Political Scientist*
- *LEI, HAE YOUNG, *Assoc. Sociologist*
- LEVY, ROBERT I., *Psychiatrist*
M.D. 1947, New York
- *LIM, YOUNGIL, *Asst. Economist*
- LOVELESS, OWEN, PH.D., *Research Affiliate*
Assoc. Professor of Linguistics, Minnesota
- MARBLE, DUANE, PH.D., *Research Affiliate*
Professor of Geography, Northwestern
- *MARETZKI, THOMAS W., *Anthropologist*
- MATSUDA, MITSUGU, *Asst. Historian*
B.A. 1955, Redlands; M.A. 1962, PH.D. 1967,
Hawaii
- *OSHIMA, HARRY T., *Economist*
- *PAIGE, GLENN, *Political Scientist*
- *PEARSON, RICHARD, *Asst. Anthropologist*
- *PIRIE, PETER, *Assoc. Geographer*
- *PITTS, FORREST R., *Geographer and Assoc.
Director for Program Development*
- *RIGGS, FREDERICK W., *Political Scientist*
- SAKAI, SADY, *Asst. in Research*
B.A. 1945, Minnesota
- *SOLHEIM II, WILHELM G., *Anthropologist*
- *WON, GEORGE, *Assoc. Sociologist*
- *YAMAMURA, DOUGLAS S., *Sociologist*

* Degrees listed under "Instruction."

Social Welfare Development and Research Center

- *NAGOSHI, JACK T., *Director*
 AITKEN, ROBERT B., *Asst. Director, Hawaii*
Upward Bound
 B.A. 1947, M.A. 1950, Hawaii
- *CHANG, THOMAS M. C., *Sr. Staff Member,*
Director, Hawaii Upward Bound
- KING, LEROY J., *Program Specialist*
 B.E. 1963, Omaha; M.ED. 1968, Hawaii
- OMURA, ROBERT T., *Asst. Director*
 B.S. 1954, Springfield
- STEVENSON, GEORGE H., *Consultant*
 M.D. 1918, Toronto

Water Resources Research Center

- *COX, DOAK C., *Director*
- *ADAMS, WILLIAM M., *Seismologist*
- BOWLES, STEPHEN P., *Research Affiliate*
 Hydrologist-Geologist, Board of Water Supply,
 City and County of Honolulu
- *BURBANK, NATHAN C., JR., *Sanitary Engineer*
 CAGAUAN, BERNARDINO G., Jr. *Soil Scientist*
 B.S. 1960, Central Luzon Agricultural College;
 M.S. 1963, Hawaii
- *CHANG, JEN-HU, *Assoc. Climatologist*
- *DAVIDSON, JACK R., *Agricultural Economist*
- *DUCE, ROBERT A., *Asst. Professor of Chemistry*
- *EKERN, PAUL C., JR., *Hydrologist*
- LAO, CHESTER, *Asst. Geologist*
 B.A. 1953, San Jose State College; M.S. 1957,
 Stanford
- *LAU, L. STEPHEN, *Assoc. Director*
- MINK, JOHN, *Research Affiliate*
 Johns Hopkins University
- *PETERSON, FRANK L., *Asst. Geologist*
- PRICE, SAUL, *Research Affiliate*
 Regional Climatologist, U. S. Dept. of
 Commerce, Weather Bureau, Pacific Region
- RANKINE, LLOYD B., Jr. *Resource Economist*
 B.S. 1963, North Carolina Agr. & Tech.
 College; M.S. 1965, Hawaii
- SHARMA, MUNNA L., *Asst. Soil Physicist*
 B.S. 1961, B. R. College; M.S. 1963, I.A.R.I.;
 PH.D. 1966, Hawaii
- *UEHARA, GORO, *Assoc. Soil Scientist*
- *WILLIAMS, JOHN A., *Asst. Professor of*
Civil Engineering
- *WU, I-PAI, *Asst. Hydraulic Engineer*
- *YOUNG, REGINALD, *Asst. Sanitary Engineer*

* Degrees listed under "Instruction."

SERVICE UNITS

Asia Training Center (UH/AID)

- KIRKENDALL, GUY R., *Director*
B.A. 1953, M.A. 1954, Utah
- BURNS, DAVID I., *Language Coordinator*
B.A. 1957, Wichita; M.A. 1968, Hawaii
- CLOPTON, ROBERT W., *Evaluation Consultant*
B.A. 1926, Maryville; M.A. 1940, Hawaii;
PH.D. 1946, Northwestern
- EBBEL, ERIC, *Administrative Officer*
B.A. 1964, Berkeley; JUR.D. 1967, California
(San Francisco)
- FLINT, ROBERT, *Athletic Coordinator*
B.F.A. 1968, Hawaii
- HALL, JAMES V., *Area & Operations Training
Coordinator*
A.A. 1956, Union; B.A. 1958, Iowa; M.A. 1964,
Hawaii
- HAUGH, DUANE, *Cultural Consultant*
B.S. 1951, Northwestern; M.S. 1965, Dayton
- HOOPFER, PAUL F., *Director of Resource Materials*
B.A. 1961, Eastern Washington; M.A. 1965,
Hawaii
- JAY, CORA, *Budget and Fiscal Officer*
B.A. 1951, Hawaii
- KEMBLE, VIRGINIA O., *Materials Development
Officer*
B.A. 1943, Oklahoma State; M.A. 1964, Hawaii
- KING, MARGARET A., *Personal Affairs Asst.*
B.S. 1967, Indiana University of Pennsylvania
- LAYBOURN, JOHN E., *Assoc. Director*
B.A. 1939, Colorado; M.A. 1953, Pittsburgh;
E.D. 1964, Wyoming
- LIEM, NGUYEN DANG, *Vietnamese Linguist*
BACCALAUREAT 1956, Paris; M.A. 1961,
Michigan; PH.D. 1966, Australian National
- McLANE, GRETEL B., *Librarian*
B.A. 1958, Stanford; M.A. 1967, San Francisco
State
- PRINS, NANCY L., *Asst. to Director*
- SANBORN, KENNETH O., *Cultural Adjustment
Officer*
B.A. 1948, New Hampshire; PH.D. 1955, Texas
- SCHLOSSSTEIN, STEVEN B., *Program Director*
B.A. 1963, Austin College; M.A. 1967, Hawaii
- TUONG, THANG THE, *Vietnamese Linguist*
BACCALAUREATE 1960, Institution Taberd;
M.S. 1967, Michigan
- VERHUSEN, BEN L., *Debriefing Coordinator*
A.B. 1939, California (Los Angeles); M.ED.
1946, Southern California
- WOODIN, THEODORE, *Program Director*
B.A. 1953, Colorado College; M.A. 1963, Hawaii
1946, 1946, Southern California
- YEATON, STEPHEN H., *Program Director*
B.A. 1963, Trinity; M.A. 1966, Hawaii

Cooperative Extension Service

- *WILSON, C. PRAIRS, *Director*
- AKANA, DAVID, *County Extension Agent, South
Oahu*
B.S. 1932, Hawaii; M.S. 1950, California
- ALLEN, LEVICE E., *Assoc. Spec. in Family Living*
B.S. 1931, Alabama; M.A. 1948, Columbia
- AOKI, GEORGE M., *Assoc. County Extension
Agent, Hilo*
B.S. 1950, Hawaii
- ARAKAWA, BERNICE, *Asst. Extension Home
Economist, West Oahu*
B.S. 1964, Hawaii
- AU, FRANCIS, *Asst. Extension Home Economist,
South Oahu*
B.S. 1964, Hawaii
- BLALOCK, JOHN R., *County Extension Agent,
Kauai*
B.S. 1946, M.S. 1949, Massachusetts
- *BOYER, JERE, *Asst. Spec. in Agricultural
Economics*
- BRADSHAW, BLAINE, *Assoc. Spec. in Extension
(RAD)*
B.S. 1939, M.S. 1962, Wyoming
- CHONG, WING YOU, *Assoc. County Extension
Agent, Hilo*
B.S. 1943, California
- *CHUN, EDWIN Y., *County Extension Agent*
- COLLIER, WILLIAM L., *Asst. Agricultural
Economist*
B.A. 1962, Hawaii
- DOI, M. JAMES, *Assoc. County Extension Agent,
Maui*
B.S. 1942, Hawaii
- DONAHUE, EUGENIA, *Extension Home Economist,
Kauai*
B.S. 1947, M.S. 1957, Kentucky
- DONOHU, HARRY R., *Assoc. Area Spec. in
Livestock Management*
B.S. 1949, Kentucky; M.S. 1951, PH.D. 1955,
Ohio State
- DOUE, STEPHEN M., *Asst. Spec. in Agricultural
Economics*
B.S. 1947, M.A. 1959, Hawaii
- FUJIMOTO, FREDERICK W., *Asst. County
Extension Agent, Molokai*
B.S. 1953, Hawaii
- *FURUMOTO, HOWARD H., *Assoc. Pathologist*
- GARCIA, CLARENCE W., *Asst. County Extension
Agent, Kamuela*
B.S. 1957, Hawaii
- GASCON, HELEN C., *Assoc. Extension Home
Economist, West Oahu*
B.S. 1953, M.S. 1960, Hawaii
- GITLIN, HARRIS M., *Assoc. Spec. in Agricultural
Engineering*
B.S. 1940, B.AGR.ENGR. 1941, Ohio State;
M.S. 1962, Michigan State
- GOODSELL, DALE N., *Assoc. Director*
B.S. 1942, Iowa State; M.S. 1952, Minnesota
- GUTIERRES, JEAN, *Asst. Spec. in Extension*
B.E. 1950, M.A. 1957, Hawaii

* Degrees listed under "Instruction."

- HANSEN, HARRY L., *County Extension Agent, Kauai*
B.S. 1942, Nevada
- HARRELL, GERTRUDE P., *Spec. in Clothing*
B.S. 1927, Georgia State College for Women;
M.A. 1949, Columbia
- HENDERSON, FLORENCE E., *Asst. Extension Home Economist, East Oahu*
B.S. 1962, Kansas
- HIGAKI, TADASHI, *Assoc. County Extension Agent, Hilo*
B.A. 1958, M.S. 1961, Hawaii
- HIROSHIGE, HERBERT M., *Asst. Spec. in Agricultural Economics*
B.S. 1934, California; M.A. 1950, Hawaii
- HONMA, HARUO, *County Extension Agent, Oahu*
B.S. 1940, Hawaii; M.ED. 1950, Colorado State;
M.S. 1959, Michigan State
- HORIMOTO, HELENE H., *Asst. Extension Home Economist, South Oahu*
B.S. 1963, Hawaii
- *HUGH, WILLIAMS I., *Assoc. State and Area Swine Specialist*
- HUNTER, MILLER T., *County Extension Agent, Mani*
B.S. 1940, M.S. 1952, Missouri
- IKEDA, WARREN, *County Extension Agent, Hilo*
B.S. 1939, Hawaii
- IKEHARA, DENNIS, *Assoc. County Extension Agent, Kauai*
B.S. 1961, Hawaii
- *ISHIDA, JACK T., *Assoc. Spec. in Agricultural Economics*
- ITO, MABEL I., *Extension Home Economist, Maui*
B.S. 1941, Hawaii
- IWANE, JOHN Y., *County Extension Agent, Kona*
B.S. 1940, Hawaii
- KAM, SAMUEL H. C., Jr., *Information Spec.*
B.A. 1962, M.A. 1965, Hawaii
- KAWASAKA, CAROL S., *Asst. Extension Home Economist, South Oahu*
B.S. 1966, Hawaii; M.ED. 1967, Maryland
- KITAGAWA, YUKIO, *Assoc. County Extension Agent, West Oahu*
B.S. 1955, Hawaii
- *KOSHI, JAMES H., *Area Spec. in Dairy Science*
- KUBOYAMA, ELLEN, *Asst. Extension Home Economist, Kamuela*
B.S. 1966, Hawaii
- KUMABE, BUNKI, *County Extension Agent, East Oahu*
B.S. 1942, Hawaii; M.S. 1953, Missouri
- LAPLANTE, ALBERT A., *Assoc. Spec. in Entomology*
B.S. 1944, Massachusetts; PH.D. 1949, Cornell
- LENK, SACHIKO, *Extension Home Economist, Kona*
B.S. 1949, Hawaii; M.S. 1958, Pennsylvania State
- LYMAN, CLARENCE, *Spec. in Pasture Management*
B.S. 1937, M.S. 1941, Hawaii
- MARDERS, WILLIAM GLENN, *Rural Sociologist*
B.S. 1930, California; M.A. 1954, Chicago;
ED.D. 1964, California
- MARTINEZ, ALBERT P., *Assoc. Spec. in Plant Pathology*
B.S. 1955, Florida
- MARUYAMA, CHARLES I., *County Extension Agent, Maui*
B.S. 1935, Hawaii; M.S. 1962, Washington State
- MATSUBARA, JEAN, *Asst. Extension Home Economist, Hilo*
B.S. 1960, Mankato State College
- MATSUMOTO, ELEANOR A., *Assoc. Spec. in Home Economics*
B.S. 1941, Hawaii; M.S. 1953, Columbia
- MCCAIN, ARTHUR H., *Spec. in Plant Pathology*
B.S. 1949, PH.D. 1959, California
- MCCALL, WADE W., *Assoc. Soil Management Specialist*
B.S.A. 1942, M.A.E. 1947, Florida; PH.D. 1953, Michigan
- *MCLAIN, DENNIS, *Asst. Spec. in Horticulture*
- MIHATA, KEICHI, *County Extension Agent, East Oahu*
B.A. 1935, M.S. 1964, Hawaii
- MIRANDA, JULIETTE I., *Assoc. Extension Home Economist, Mani*
B.S. 1966, M.A. 1967, Linfield
- NAKAGAWA, YUKIO, *Assoc. Spec. in Horticulture*
B.S. 1940, Hawaii
- NAKANO, RICHARD, *Asst. County Extension Agent, Kamuela*
B.S. 1962, M.S. 1964, Hawaii
- NAKASATO, MASARU G., *County Agent Supervisor*
B.S. 1951, Hawaii; M.S. 1961, Oregon State
- NOLAN, JAMES C., JR., *Assoc. Area Spec. in Livestock*
B.S. 1950, M.S. 1952, PH.D. 1967, Wyoming
- OHAMA, MASAKO, *Asst. Extension Home Economist, Kauai*
B.S. 1947, Hawaii
- OKAGAWA, TOMOYUKI, *Assoc. County Extension Agent, East Oahu*
B.S. 1954, Hawaii
- ONAKA, CHARLES T., *Asst. County Extension Agent, Honokaa*
B.S. 1965, California State Polytechnic College
- ORR, KATHRYN J., *Assoc. Foods and Nutrition Specialist*
B.S. 1945, M.P.H. 1966, California; M.S. 1949, Michigan State
- OTA, ROBERT M., *County Extension Agent, Hawaii*
B.S. 1950, Colorado State; M.S. 1959, Purdue
- PENNER, RUTH T., *Assoc. Extension Home Economist, South Oahu*
B.S. 1943, Tennessee
- REID, VERA Y., *Asst. Spec. in Home Management and Home Furnishings*
B.S. 1942, Auburn; M.S. 1959, Florida State
- SAKUMA, MABEL, *Asst. Extension Home Economist, Mani*
B.S. 1956, Hawaii
- SCHWARTZ, LILLIAN R., *Extension Home Economist, South Oahu*
B.S. 1931, Hastings College; M.S. 1961, Michigan State
- SHADDICK, PHYLLIS ANN, *Asst. Extension Home Economist, East Oahu*
B.S. 1958, Florida State
- SHIGETA, DANIEL T., *County Extension Agent, Maui*
B.S. 1950, Hawaii; M.ED. 1964, Colorado

* Degrees listed under "Instruction."

- SHIGETA, JAMES Y., *Assoc. Spec. in Club Work*
B.S. 1951, Maryland; M.S. 1958, Wisconsin
- SHIGEURA, GORDON T., *Assoc. Area Spec. in Extension*
B.S. 1939, M.S. 1947, Hawaii
- SHIMABUKURO, BETTY Z., *Assoc. Extension Home Economist, Hilo*
B.S. 1946, Hawaii; M.S. 1953, Michigan
- SHIRAKAWA, TAKUMI, *County Extension Agent, Naalehu*
B.S. 1948, Hawaii; M.S. 1963, Michigan
- SPECKELS, ELIZABETH, *Asst. State Club Leader*
B.S. 1960, South Dakota; M.S. 1965, Hawaii
- TAKEGUCHI, ELSIE F., *Asst. Extension Home Economist, West Oahu*
B.S. 1964, Iowa State
- TAKII, SHIRO, *Assoc. Spec. in Agricultural Economics*
R.S. 1938, Hawaii; M.S. 1960, Michigan State
- TANAKA, TOKUSHI, *Asst. Area Spec. in Poultry Science*
B.S. 1948, M.S. 1953, Hawaii
- TEHO, FORTUNATO, *Assoc. Spec. in Visual Aids*
B.S. 1927, Hawaii
- THOMPSON, BETTY JO, *Assoc. Extension Home Economist, Hilo*
B.S. 1953, Oklahoma
- VOSS, ROYLYN LEE, Jr., *Spec. in Rural Civil Defense*
B.S. 1961, Michigan State
- WATANABE, ROGER T., *Spec. in Soil Management*
B.S. 1956, Hawaii
- *WATSON, DONALD P., *Spec. in Horticulture*
- YAMAMOTO, TOM, *Assoc. County Extension Agent, Hilo*
B.S. 1957, M.A. 1964, Oregon State
- YEE, WARREN Y. J., *Assoc. Spec. in Horticulture*
B.S. 1942, Hawaii; M.S. 1959, Purdue
- YONAMINE, CHARLES N., *Assoc. County Extension Agent, West Oahu*
B.S. 1951, California State Polytechnic

Educational Television Broadcasting Services

- *REED, ROBERT, *Director*
- BARNHILL, CAROL, *Program Asst.*
B.A. 1962, Oregon
- CARTER, NICHOLAS, *Producer-Director*
B.S. 1962, M.A. 1964, Florida
- CRONIN, HENRY, *Chief Engineer*
B.S. 1963
- EHLIN, CLARENCE, *Program Manager*
B.S. 1951, Wisconsin
- FUJIOKA, ROBERT, *Studio Engineer*
- GALLAGHER, DAVID, *Producer-Director*
B.A. 1959, California
- HANSEN, HOWARD, *Graphics Supervisor*
- HICKOK, MONTE, *Studio Facilities Supervisor*
B.A. 1965, California
- HIRATA, BOB, *Administrative Asst.*
B.B.A. 1965, Hawaii
- ITAKI, TERRY, *Studio Engineer*
- JONES, WENDELL, *Producer-Director*
B.S. 1962, Iowa
- KONNO, JOE, *Film Specialist*
- LETNER, LAVONNE, *Graphic Artist*
B.A. 1958, Drake
- MATSUSHIGE, MAKOTO, *Studio Engineer*
- MILLER, ROBERT, *Supervisor of Public Affairs Programming*
B.A. 1953, Hawaii
- OSHIRO, KANAME, *Studio Engineer*
- SAKATA, AKIO, *Studio Engineer Supervisor*
- SIMMONS, HELEN, *Traffic Continuity Supervisor*
B.A. 1947, Oklahoma
- TANABE, EDWARD, *Studio Engineer*
- TUELL, GORDON, *Production Manager*
B.A. 1938, Washington

Office of Foreign Contracts

- *IHARA, TERUO, *Director, Assoc. Professor of Education*
- BRISBY, PHYLLIS J., *Instructor in Education*
B.A. 1964, Omaha
- *DAEUFER, CARL J., *Asst. Professor of Education*
- *PORTER, M. ROSEAMONDE, *Professor of Education*
- RANTALA, JOHN W., *Asst. Professor of Education*
B.S. 1951, Stout Institute; M.ED. 1953, Illinois
- TAURA, JULIETTE K., *Asst. Professor of Education*
ED.B. 1948, M.A. (TESL) 1961, Hawaii; M.A. 1956, New York
- UYEMATSU, MASAO, *Asst. Professor of Education*
- ZANE, AH CHONG, *Asst. Professor of Education*
B.A. 1942, Santa Barbara State; M.ED. 1947, Missouri

* Degrees listed under "Instruction."

Office of International Programs

- *STALKER, JOHN N., *Director*
- KIRKENDALL, GUY R., *Deputy Director*
B.A. 1953, M.A. 1954, Utah
- NAGAI, HISASHI, *Institutional Accounts Analyst*
B.B.A. 1956, Hawaii
- OLSEN, PHILLIP B., *Director of Peace Corps Training for Hawaii*
B.A. 1953, Wesleyan; M.S. 1959, California (Los Angeles)
- PRINS, NANCY L., *Administrative Asst.*
- SHIDA, DAVID, *Asst. Director for Administration*
B.A. 1950, Baldwin Wallace
- WALKER, D. MERLE, *Support Services Officer*
B.S. 1930, Kansas State Teachers College; LL.B. 1937, Maryland
- WILSON, SUSAN J., *Administrative Asst., Peace Corps*
B.A. 1964, Wooster

Foreign Language Laboratories

- THEUMA, JEAN R., *Director*
DIPLOMA 1961, Sorbonne; B.A. 1962, Hawaii; M.A. 1966, Middlebury College
- EVANS, JAMES L., *Technical Supervisor*
- FUKUDA, ANNETTE C., *Language Labs Coordinator*
B.A. 1966, Hawaii

Legislative Reference Bureau

- DOI, HERMAN S., *Director and Researcher*
A.B. 1950, Hawaii; LL.B. 1954, Minnesota
- FAUST, A. SONIA, *Asst. Researcher*
B.A. 1960, Hawaii; LL.B. 1964, Harvard
- JOESTING, HARRIET, Jr., *Researcher*
A.B. 1948, Wellesley
- KOBAYASHI, HANAKO, *Asst. Research Librarian*
B.A. 1954, Hawaii; M.S. 1956, Simmons
- MARK, CHARLES, *Asst. Researcher*
M.B.A. 1956, Chicago
- MINAMI, WAYNE K., *Asst. Researcher*
B.A. 1964, Yale; LL.B. 1967, Stanford
- MIYAGI, ANNETTE Y., *Asst. in Research*
B.A. 1964, Hawaii
- PUTMAN, PATRICIA K., *Asst. Researcher*
B.A. 1944, LL.B. 1956, California
- TAMURA, MAY, Jr., *Research Librarian*
B.A. 1955, Hawaii; M.S. 1956, Wisconsin

Peace Corps Training Center—Hilo

- BRACHER, GEORGE, *Medical Coordinator*
B.A. 1930, M.D. 1934, Oregon
- BUNYE, MARIA VICTORIA R., *Acting Language Coordinator*
A.B. 1961, Philippines; M.A. 1964, Ateneo de Manila; M.A. 1965, Georgetown
- CAHOON, RICHARD A., *Field Assessment Officer*
B.A. 1957, M.A. 1959, Ph.D. 1962, Ohio
- CROWLEY, DALE P., *Language Coordinator*
B.A. 1950, Bob Jones; M.A. 1965, Georgetown
- DESHA, PILLANI C., *Personnel Administrator*
- DUNCAN, H. SCOTT, *Country Director, Thailand*
A.B. 1960, Dickinson
- ESTRADA, ZENaida REYES, *Field Assessment Associate*
B.S. ED. 1958, Philippines; M.ED. 1963, Hawaii
- FITZGERALD, EDWARD T., *Field Assessment Officer*
PH.D. 1965, California
- GRIFFITH, JOHN ALFRED, *Field Assessment Officer*
A.B. 1964, San Diego State
- KEMBLE, ROBERT D., *Psychiatry Consultant*
B.S. 1946, Harvard; M.D. 1950, Tufts
- MATAYOSHI, MARY, *Program Director*
B.A. 1952, Grinnell; Prof. Cert. 1957, Hawaii

* Degrees listed under "Instruction."

McGINN, RICHARD B., JR., *Project Director, Philippines*
B.A. 1961, M.A. 1966, Conzaga

MOORE, JAMES A., *Chief, Support Services*

OVERTON, JOHN R., *Administrative Director*
B.S. 1955, Michigan

PETERSEN, RUTH D., *Librarian*

RAMOS, TERESITA VILLARICA, *Language Coordinator*
B.S.E. 1952, Philippines; M.A. 1958, Michigan; M.A. 1964, California

SCHNACK, GEORGE F., *Psychiatry Consultant*
A.B. 1939, A.M. 1940, Stanford;
M.D. 1951, Johns Hopkins

THANGATHURAI, T., *Asia/America Program Specialist*
B.A. 1955, Diploma in Education 1957, Singapore

TISDALE, PENNY LEE, *Asst. Program Director*
B.A. 1964, Washington

TORIGOE, EDGAR M., *Fiscal Officer*
B.B.A. 1957, Western Michigan

TOWNSEND, L. TRACY, *Acting Agriculture Coordinator*
B.S.Z. 1965, Washington

UTZINGER, ROBERT J., *Assoc. Public Health Specialist*
B.S. 1949, Bradley; M.P.H. 1952, Michigan

WHITE, ALAN F., *Director, Hilo Peace Corps Training Center*
A.B. 1965, Miami

WHITE, JOHN F., *Property and Maintenance Manager*
B.C.S. 1961, Ben Franklin School of Finance

Peace Corps Training Center—Molokai

SHIRAIISHI, CHARLEY T., *Director, Molokai Peace Corps*
B.S. 1949, Hawaii

Tropical Rice Production Center

KLATTENHOFF, FRITZ L., *Administrative Officer*

TOMPKINS, JOHN, *Rice Specialist*
B.S. 1964, Cornell; Certificate in Rice Production 1967, International Rice Research Institute

Statistical and Computing Center

*PETERSON, W. WESLEY, *Acting Director*

ARASHIRO, DANIEL Y., *Sr. Systems Programmer*
B.S. 1965, Hawaii

GRIFFITT, COY A., *Computer Specialist*
B.S. 1964, Kansas

HIGASHI, ALBERT M., *Lead Systems Programmer*
B.S. 1963, Hawaii

LEONG, DIANTHA L., *Systems Programmer*
B.A. 1965, Vassar

MCGINNIS, SANDRA, *Computer Specialist*
B.S. 1966, Washington

PARARAS-CARAYANNIS, JEAN, *Programs Librarian*
B.S. 1964, Hawaii

SANFORD, NANCY A., *Computer Specialist*
B.A. 1964, Washington

SOONG, WILLIAM Y., JR., *Sr. Systems Programmer*
B.A. 1964, Hawaii

TSUCHIYAMA, FRANCES F., *Supervisor, Machine Operation*
B.A. 1963, Hawaii

YEE, WALTER S., *Asst. Director*
B.S. 1960, Hawaii

YONEMOTO, EDWARD, *Computer Specialist*
B.B.A. 1967, Hawaii

* Degrees listed under "Instruction."

University of Hawaii Press

SPARKS, ROBERT W., *Director*
B.A. 1960, M.A. 1964, Hawaii

HOWE, JOHN S., *Journals Manager*
B.A. 1961, Haverford College; M.A. 1967,
Chicago

ISAYAMA, PAMELA J., *Editor*
A.B. 1962, Pembroke College (Brown)

KOOISTRA, JOHN F., *Sales & Promotion
Manager*
B.A. 1959, Michigan

LIPSON, VIRGINIA F., *Production Manager*
A.B. 1963, Bard College

MOROWITZ, IRIS, *Asst. Editor*
B.A. 1959, Brandeis

WAGEMAN, JAMES C., *Asst. Director & Designer*
A.B. 1958, Park College; M.A. 1964, Hawaii

OFFICE OF VICE-PRESIDENT FOR ACADEMIC AFFAIRS

*HIATT, ROBERT W., *Vice-President for
Academic Affairs*

*KAMINS, ROBERT M., *Dean for Academic
Development*

*POTTER, ROBERT E., *Assoc. Dean for Academic
Development*

UNEMORI, GRACE, Jr., *Researcher in Academic
Affairs*
B.A. 1950, Hawaii

OFFICE OF VICE-PRESIDENT FOR COMMUNITY COLLEGES

*KOSAKI, RICHARD H., *Vice-President for
Community Colleges*

PAULUS, LUCIAN J., *Administrative Officer*
B.S. 1931, Stout State

SAKAGUCHI, MELVYN K., *Research Assistant*
B.A. 1960, Hawaii

SAKAI, JAMES K., *Fiscal Officer*
B.A. 1951, Hawaii

SHIGETOMI, SAMSON S., *Director of
Technical-Vocational Education*
B.S. 1962, M.S. 1963, Oklahoma State

WHITE, EDWARD T., *Director of School and
College Relations*
B.A. 1936, M.A. 1939, Columbia

Honolulu Community College

OSWALD, ARTHUR, *Provost*

PETRIS, PETER, *Acting Dean of Instruction*

SPOON, MADGE, *Acting Dean of Student Services*

Kapiolani Community College

WON, RAYMOND Y. C., *Provost*

NAKAMOTO, HARRIET H., *Dean of Instruction*

DOI, EDITH H., *Dean of Students*

Kauai Community College

STEIGER, WALTER, *Provost*

KUBOTA, KIYOSHI, *Dean of Administration*

Leeward Oahu Community College

TUTHILL, LEONARD D., *Provost*

PRIHODA, JOHN J., *Dean of Educational Services*

Maui Community College

BRIDGMAN, DONALD C., *Provost*

ELLIS, GERALD E., *Dean of Instruction*

* Degrees listed under "Instruction."

OFFICE OF VICE-PRESIDENT FOR BUSINESS AFFAIRS

- *TAKASAKI, RICHARD S., *Vice-President for Business Affairs*
- ARITA, DANIEL K., *Systems Analyst (Management Systems)*
B.S. 1958, Portland
- ARNETT, THOMAS N., *Acting Director of Personnel*
B.S. 1933, Alabama; LL.B. 1939, LL.M. 1942, Georgetown
- ARRE, GEMINIANO Q., JR., *Institutional Analyst (Auxiliary Services)*
B.B.A. 1956, Philippines; M.A. 1960, Hawaii
- BARTKO, YVONNE M., *Trade Book Dept. Manager (Auxiliary Services)*
B.A. 1932, Syracuse; M.S.L.S. 1953, Syracuse
- BLOEDE, V. CARL, *Acting Comptroller & Contracts Officer*
A.B. 1940, Dartmouth; LL.B. 1950, Baltimore; LL.M. 1967, Georgetown
- BRODIE, MYRTLE S., *Personnel Officer*
- CURRY, HARRY, JR., *Transp. Services Manager (Auxiliary Services)*
- FUJIKAWA, DANIEL Y., *Communication Services Manager (Auxiliary Services)*
- GILMORE, ALLEN J., *Project Coordinator (Facilities Management)*
B.S. 1944, U. S. Naval Academy; B.S. (M.E.) 1952, M.S. (M.E.) 1953, U. S. Naval Postgraduate School
- GORDON, JOSEPH, *Parking and Faculty Housing Manager (Auxiliary Services)*
- GOTO, MASAICHI, *Asst. to General Manager, Bookstore (Auxiliary Services)*
B.A. 1949, Hawaii
- HAYASHI, HAROLD G., *Institutional Analyst (Treasury)*
B.B.A. 1957, Hawaii
- HIGA, GEORGE S., *Institutional Analyst (Management Systems)*
B.A. 1958, Hawaii
- HORII, RALPH T., JR., *Institutional Analyst (Business Management)*
B.A. 1962, Hawaii; M.A. 1964, Hawaii
- IHA, YOSHIMITSU D., *Institutional Analyst (Budget)*
B.A. 1962, Wheaton College
- ITO, RICHARD M., *Institutional Analyst (Management Systems)*
B.A. 1966, Hawaii
- JAMES, CHARLES S., *Asst. Vice-President for Business Affairs*
B.A. 1947, California
- KAMEDA, STEPHEN, *Institutional Analyst (Budget)*
B.A. 1967, Michigan State
- KE, GEORGE, *Systems Analyst (Management Systems)*
B.S. 1952, La Salle College
- KIRKPATRICK, NORA B., *Institutional Analyst (Management Systems)*
B.A. 1938, Minnesota; M.A. 1941, Radcliffe
- KOEHLE, PHILIP W., *Manager of Facilities Management*
B.A. 1942, Northwestern College
- KOSAKA, CHARLES, *Institutional Analyst (Management Systems)*
B.A. 1957, Hawaii
- KUWAHARA, CLARENCE T., *Institutional Analyst (Business Management)*
B.B.A. 1957, Hawaii
- LOO, FREDERICK S. W., *Institutional Analyst (Fiscal Analysis)*
B.S. 1940, Hawaii; M.A. 1941, Colorado State
- MAGELSEN, JOHANNES C., *General Manager, Bookstore (Auxiliary Services)*
B.A. 1942, Luther College
- MARUTANI, HERBERT K., *Institutional Analyst (Personnel)*
B.B.A. 1953, Hawaii; M.A. 1958, Illinois
- MASHIMA, EDWARD K., *Institutional Analyst (Personnel)*
B.A. 1952, Hawaii
- MASUMOTO, HAROLD S., *Budget Director*
B.A. 1960, Hawaii
- MORIHARA, MORIO, *Institutional Analyst (Internal Audit)*
- MORIYASU, HENRY M., *Administrative Asst. (Office of V-P for Business Affairs)*
B.A. 1947, Hawaii
- MURAKAMI, LESLIE S., *Institutional Analyst (Management Systems)*
B.A. 1958, Santa Clara
- NAKASONE, CAROLE T., *Asst. in Research (Facilities Management)*
B.A. 1964, Hawaii
- NISHIOKA, MAE M., *Institutional Analyst (Budget)*
B.S. 1950, Hawaii
- OHITA, KENNETH H., *Institutional Analyst (Fiscal Analysis)*
B.A. 1942, Hawaii
- SMITH, ESTHER M., *Institutional Analyst (Personnel)*
B.A. 1948, M.A. 1962, Hawaii
- SNYDER, KEITH S., *Director of Auxiliary Services*
B.A. 1942, Carleton College
- SOUPENE, NONA H., *Supply Dept. Manager (Auxiliary Services)*
B.A. 1962, Hawaii
- SUMIDA, KENJI, *Coordinator, Management Systems*
B.B.A. 1953, Hawaii
- TANABE, GEORGE K., *Comptroller, Grants and Contracts*
B.B.A. 1941, Armstrong
- UYEDA, ALEXANDER H., *Institutional Analyst (Business Management)*
B.B.A. 1962, Hawaii
- WONG, PHILIP K. C., *Campus Architect (Facilities Management)*
- YAMADA, ALLEN H., *Business Management and Accounting Systems Officer*
B.A., B.S. 1948, M.B.A. 1949, Denver
- YAMAMOTO, JUDY A., *Space Analyst (Facilities Management)*
B.B.A. 1966, Hawaii

* Degrees listed under "Instruction."

OFFICE OF VICE-PRESIDENT DIVISION OF CONTINUING EDUCATION AND COMMUNITY SERVICE

- | | |
|---|--|
| <p>BALCH, RICHARD L., <i>Vice-President, Division of Continuing Education and Community Service</i></p> <p>KIRKENDALL, GUY R., <i>Director, Asia Training Center</i></p> <p>MISAJON, JAMES J. M., <i>Administrative Director, Continuing Education and Community Service</i></p> <p>*MIWA, RALPH M., <i>Administrative Dean, Continuing Education</i></p> | <p>OLSEN, PHILLIP B., <i>Director, Peace Corps Training for Hawaii</i></p> <p>*REED, ROBERT M., <i>Director, Educational Television Broadcasting</i></p> <p>*STALKER, JOHN N., <i>Director, Office of International Programs</i></p> <p>*TINKER, SPENCER W., <i>Director, Waikiki Aquarium</i></p> |
|---|--|

OFFICE OF UNIVERSITY PLANNING

- | | |
|---|--|
| <p>MOGI, HITOSHI, <i>Assistant to the President for Planning</i>
B.A. 1949, Aoyama Gakuin, Tokyo; M.R.P. 1959, Cornell</p> <p>CAMPBELL, WILLIAM R., JR., <i>Principal Architect</i>
B.ARCH. 1954, North Carolina State</p> <p>HANSEN, JOHN L., <i>Campus Engineer</i>
B.S. 1942, U. S. Naval Academy</p> <p>INOUE, MINORU R., <i>Projects Coordinator</i>
B.ARCH. 1956, Michigan</p> <p>KOSAKI, MILDRED D., <i>Institutional Research Coordinator</i>
B.ED. 1945, M.ED. 1949, Hawaii</p> <p>MCGUIRE, HAROLD P., <i>Projects Coordinator</i>
B.S. 1951, California State Poly. College</p> | <p>MIYOSHI, GERALD I., <i>Institutional Research Analyst</i>
B.A. 1967, Stanford</p> <p>MORIKAWA, RONALD K., <i>Projects Coordinator</i>
B.S. 1956, Hawaii; M.S. 1964, Southern California</p> <p>MURAOKA, WALTER K., <i>Projects Coordinator</i>
B.S. 1955, Detroit</p> <p>NAKAMURA, IRENE T. O., <i>Institutional Research Analyst</i>
B.ED. 1948, 5th Year Cert. 1949, Hawaii</p> <p>PANG, HUBERT W. H., <i>Institutional Research Analyst</i>
B.B.A. 1968, Hawaii</p> <p>SATO, RICHARD M., <i>Projects Coordinator</i>
B.S. 1956, Hawaii</p> |
|---|--|

OFFICE OF RESEARCH ADMINISTRATION

- | | |
|--|---|
| <p>*GORTER, WYTZE, <i>Director of Research</i></p> <p>*ROSENBERG, MORTON M., <i>Assoc. Dean, Research and Fellowships</i></p> <p>KONG, DONALD, <i>Institutional Administrative Officer</i>
B.B.A. 1965, Hawaii</p> | <p>MATSUNAGA, ICHIRO, <i>Asst. to Director of Research, Fiscal Affairs</i>
B.S.A. 1951, Walton School of Commerce</p> <p>McMATH, CARROLL B., JR., <i>Asst. to Director of Research</i>
B.S. 1932, Oregon State; M.S. 1936, New York</p> <p>MINAMI, SHIGETO, <i>Institutional Administrative Officer</i>
B.A. 1951, Michigan State</p> |
|--|---|

EAST-WEST CENTER

IAP—Institute of Advanced Projects, ISI—Institute for Student Interchange,
ITI—Institute for Technical Interchange, CP—Central Programs

- JONES, HOWARD P., *Chancellor*
LITT.B. 1921, Columbia; LL.D. 1962,
Fairleigh-Dickinson
- AJIROGI, HAROLD H., *Sr. Program Officer, ITI*
B.S. 1949, Brigham Young; M.ED. 1957, Illinois
- ATWOOD, JOYCE, *Editor, EWC Press, CP*
B.A. 1960, Oklahoma
- BARBER, RICHARD, *Asst. Program Officer,
Conferences & Seminars, CP*
B.A. 1965, Hawaii
- BILLINGS, BEATRICE, *Sr. Program Officer, ITI*
B.S. 1930, Cornell; M.A. 1935, Columbia
- BURIAN, FREDRICH J., *Assoc. Program Officer,
AID, ITI*
B.A. 1963, Hawaii
- BURKETT, GEORGE I., *Assoc. Program Officer,
AID, ITI*
B.A. 1941, M.A. 1950, Oklahoma; DIPLOMA
1948, Paris
- CHAR, LAN HIANG, *Library Acquisitions Specialist,
EWC Library, CP*
B.A. 1951, M.A. 1956, Indonesia; M.A. 1959,
Columbia
- CHOY, HELEN J., *Assoc. Program Officer, ISI*
B.A. 1961, M.A. 1963, Hawaii
- *CHUN, DAI HO, *Assoc. Institute Director, ITI*
- CIAY, HORACE, *Sr. Program Officer, ITI*
B.A. 1950, Hawaii; M.S. 1952, Massachusetts;
PH.D. 1958, Chicago
- DOLAN, VIRGINIA W., *Sr. Admin. Asst., Alumni
Offic. CP*
B.A. 1935, Hawaii
- DURHAM, MARVIN, *Assoc. Institute Director, ISI*
B.S. 1952, Washington; M.A. 1953, PH.D. 1962,
Fletcher School of Law & Diplomacy
- FAUNI, DAVID, *Student Activities Coordinator, ISI*
B.S. 1958, Pennsylvania State
- FAUSTINO, SALLY, *Assoc. Program Officer, ITI*
B.S. 1952, Hawaii; M.P.H. 1962, Michigan
- FUJIOKA, WAKE A., *Program Asst., Research
Publications & Translations, IAP*
B.A. 1959, M.A. 1967, Hawaii
- FUKUMI, YASUKO, *Library Cataloger, EWC
Library, CP*
B.A. 1949, Tsuda College (Japan); M.A. 1964,
Kansas State Teachers College
- GILSTRAP, SAM P., *Deputy Chancellor for
Administration*
B.S. 1930, Oklahoma State; LL.B. 1931,
Cumberland
- GOODFRIEND, ARTHUR, *Special Asst. to the
Chancellor*
B.S. 1928, College of City of New York
- GOTO, Y. BARON, *Vice-Chancellor, ITI*
B.S. 1924, Hawaii; SC.D. (Hon.) 1959, Oregon
- GOULD, MIRIAM, *Program Asst., Research
Publications & Translations, IAP*
B.A. 1940, Whittier College; M.A. 1941,
Columbia
- HANNAH, JULIE, *Library Asst., EWC Library, CP*
B.A. 1962, Concordia College (Minnesota)
- HANSEN, MARJORIE E., *Asst. Student Activities
Coordinator, ISI*
B.A. 1964, Fresno State; M.A. 1967, Stanford
- HARRIS, ALICE D., *Library Cataloger, EWC
Library, CP*
B.A. 1951, Russell Sage College; M.S. 1956,
Drexel Institute
- HATA, SAMUEL T., *Controller, Administration*
B.A. 1956, Hawaii
- HEAVENRIDGE, JANET H., *Production Manager,
EWC Press, CP*
B.A. 1950, Michigan
- HEWETT, ROBERT B., *Director, Public Affairs
Office, CP*
- HIROE, TAKESHI, *Library Cataloger, EWC
Library, CP*
B.A. 1957, Keio (Japan)
- HONG, VERA Z., *Sr. Admin. Asst., ISI*
B.A. 1947, Hawaii
- HUBBARD, JAMES, *Assoc. Program Officer, ITI*
B.A. 1950, B.S. 1960, Washington State
- KAI, MARGARET, *Community Relations Officer, CP*
B.S. 1932, 5th Yr. Cert., M.A. 1933, Hawaii
- KAMIDA, ALAN, *Head Cataloger, EWC Library,
CP*
B.A. 1954, Michigan State; M.L.S. 1959, Rutgers
- KANAHELE, GEORGE, *Director of Conferences &
Seminars, CP*
B.S. 1958, M.A. 1959, Brigham Young; PH.D.
1967, Cornell
- KATEKARU, RAY T., *Sr. Program Officer, AID,
ITI*
B.S. 1940, Stout State College
- KING, YUNG-HUA, *Library Cataloger, EWC
Library, CP*
B.A. 1960, Taiwan Normal; M.A. 1967,
Wisconsin
- KLEINJANS, EVERETT, *Deputy Chancellor for
Academic Affairs*
A.B. 1943, Hope College; M.A. 1948, PH.D.
1958, Michigan
- KOKUBUN, HERBERT T., *Admin. Management
Officer, Administration*
B.A. 1952, Hawaii
- KONOSHIMA, SUMIYE E., *Asst. Program Officer,
EWC Library, CP*
A.B. 1949, Hope College; M.A. 1957, Columbia;
M.A. 1968, Hawaii
- KOZICKI, RICHARD J., *Library Acquisitions
Specialist, EWC Library, CP*
B.A. 1951, Allegheny College; M.A. 1953, Yale;
PH.D. 1959, Pennsylvania
- KUKINO, KEIJI, *Admin. Analyst, Administration*
B.S. 1960, Hawaii
- KUSUHARA, HARRIET A., *Sr. Admin. Asst., AID,
ITI*
- KWOK, TAK-WA, *Sr. Program Officer, Research
Publications & Translations, IAP*
B.A. 1921, Washington; M.A. 1922, Harvard;
Research Cert. 1923, Cantab

* Degrees listed under "Instruction."

- KYLE, JOHN, *Director, EWC Press, CP*
B.A. 1951, M.A. 1953, Oklahoma
- LAU, CHAU MUN, *Library Asst., EWC Library, CP*
B.A. 1966, Hawaii
- LAU, FLORENCE, *Assoc. Program Officer, ISI (on leave)*
B.S. 1961, M.A. 1964, Hawaii
- LEE-KAI, FANNIE, *Sr. Admin. Asst., ITI*
- LENOX, GEORGE, *Assoc. Director, EWC Press, CP*
B.DES. 1951, Michigan
- MAKEY, SUMI Y., *Sr. Program Officer, ISI*
B.A. 1948, Hawaii; M.A. 1951, Columbia
- MATSUI, MASATO, *Library Acquisitions Specialist (Coordinator, Oriental Collections), EWC Library, CP*
B.A. 1953, Doshisha; M.S. 1958, Syracuse
- MEREDITH, GERALD M., *Evaluation and Alumni Liaison Officer, CP*
B.A. 1955, M.A. 1956, California (Berkeley)
- MEYERS, PAUL F., JR., *Assoc. Program Officer, ISI*
B.A. 1958, George Washington
- NAKAMURA, ROSE, *Assoc. Program Officer, ISI*
B.S. 1950, Hawaii
- NISHIHARA, KENNETH Y., *Asst. Admin. Management Officer, Administration*
B.A. 1954, Hawaii
- PHELPS, ANNE, *Asst. Sales Manager, EWC Press, CP*
A.B. 1953, Wesleyan
- ROBERTS, DOROTHY E., *Assoc. Program Officer, ISI*
B.A. 1930, California; M.A. 1938, Southern California; PH.D. 1955, California (Berkeley)
- SAITO, MASAJI, *Admin. Analyst, Administration*
B.S. 1956, 5th Yr. Cert. 1957, Hawaii
- SEICHI, JUDITH, *Sr. Admin. Asst., Office of Deputy Chancellor for Academic Affairs*
- SEO, KATHERINE Y.-D., *Library Cataloger, EWC Library, CP*
B.S. 1950, Ehwa Women's University (Korea)
- *SHINODA, MINORU, *Director, IAP*
- SHU, AUSTIN, C. W., *Library Cataloger, EWC Library, CP (on leave)*
B.L.S. 1941, Boone (China); B.A. 1944, National Auhwei (China)
- SUEDA, SHOSO C., *Library Asst., EWC Library, CP*
B.S. 1966, Hawaii
- SULLIVAN, MICHAEL E., *Residence Services Manager, Administration*
B.A. 1963, Texas
- SUSSMAN, GERALD E., *Assoc. Program Officer, International Development Fellowships, ISI*
B.S. 1959, LL.B. 1962, Georgetown; M.A. 1964, Johns Hopkins
- TATSUNO, HAZEL O., *Sr. Admin. Asst., Senior Specialists Program, IAP*
- TSUKIYAMA, MARTHA M., *Sr. Admin. Asst., Chancellor's Office*
B.S. 1947, MacMurray
- ULREY, KATHRYN, *Asst. Community Relations Officer, CP*
B.S. 1947, Manchester
- WAGEMAN, LYNETTE M., *Library Cataloger, EWC Library, CP*
B.A. 1959, Park
- WAN, WILLIAM W. L., *Research Asst., Research Publications & Translations, IAP*
B.A. 1960, Hong Kong; M.S. 1966, Hawaii
- WANG, JAMES C. F., *Assoc. Program Officer, ISI*
B.A. 1950, Oberlin
- WELDON, WILLIAM S., *Sr. Program Officer, ISI*
B.A. 1950, M.A. 1952, Michigan
- WITTMANS, ELIZABETH, *Sr. Program Officer, Research Publications & Translations, IAP*
M.A. 1954, London; PH.D. 1964, Leyden
- WOOSTER, ROBERT, *Assoc. Program Officer, ISI*
B.A. 1963, Hawaii
- WRIGHT, JOYCE M., *Acting Director, EWC Library, CP*
B.S. 1958, B.A.L.S. 1959, Washington
- WRIGHT, NORMAN J., *Sales Manager, EWC Press, CP*
B.A. 1939, Alabama; M.A. 1941, Hawaii
- YORITA, PEGGY, *Assoc. Program Officer, ISI*
B.A. 1946, Hawaii; M.ED. 1959, Boston
- YOSHIDA, GAYLE S., *Research Asst., EWC Press, CP (on leave)*
B.A. 1965, Hawaii
- YOSHIZUMI, DOROTHY, *Sr. Admin. Asst., Office of Deputy Chancellor for Administration*
- ZUMWINKLE, ROBERT, *Director, ISI*
B.A. 1943, PH.D. 1953, Minnesota

* Degrees listed under "Instruction."

SUMMARY OF ENROLLMENT FOR 1967-68

	1st semester	2nd semester
Graduate Division		
Doctor's Candidates.....	424	433
Master's Candidates.....	1,880	1,770
	2,304	2,203
College of Arts and Sciences		
Seniors.....	1,079	929
Juniors.....	1,522	1,507
Sophomores.....	2,524	2,596
Freshmen.....	3,270	3,213
	8,395	8,245
College of Business Administration		
Seniors.....	361	291
Juniors.....	379	400
Sophomores.....	34	44
Freshmen.....	4	6
	778	
School of Travel Industry Management		
Seniors.....	52	50
Juniors.....	74	91
Sophomores.....	17	15
	921	897
College of Education		
5-Year Diploma.....	184	154
Classified Professional Certificate Candidates.....	88	94
Seniors.....	479	452
Juniors.....	542	560
Sophomores.....	243	244
Freshmen.....	9	10
	1,545	1,514
College of Engineering		
Seniors.....	182	153
Juniors.....	181	169
Sophomores.....	231	230
Freshmen.....	286	279
	880	831
Health Sciences and Social Welfare: Medicine		
Graduate Pre-Clinical Students.....	21	21
Seniors.....	32	34
Juniors.....	27	28
Sophomores.....	2	2
Freshmen.....	1	
	83	85

Summary of Enrollment (continued)

	1st semester	2nd semester
Health Sciences and Social Welfare: Nursing		
Seniors.....	48	43
Juniors.....	97	92
Sophomores.....	58	73
Freshmen.....	67	68
	270	276
College of Tropical Agriculture		
Seniors.....	135	100
Juniors.....	111	119
Sophomores.....	90	112
Freshmen.....	91	91
	427	422
Total University Degree and Diploma Candidates...	14,825	14,473
Not Candidates for University Degrees and Diplomas		
Special Graduate Students.....	112	115
In-Service Teachers.....	48	59
Unclassified Undergraduate Students.....	686	621
Unclassified Graduate Students.....	831	998
Auditors.....	62	70
	1,739	1,863
Total, Manoa Campus.....	16,564	16,336
East-West Center Grantees on Study Tours		
Asians.....	46	4
Americans.....	29	21
	75	25
Total, Hilo Campus.....	618	669
College of General Studies.....	2,938	3,410
GRAND TOTAL CREDIT STUDENTS.....	20,195	20,440
	1st Term	2nd Term
Summer Session		
Manoa Campus.....	14,464	4,814
Hilo Campus.....	600	8
Total.....	15,064	4,822

Index

- Abbreviations, in course descriptions, 5
- Absence from classes, 41
- Academic advising
 - (*See individual colleges*)
- Academic chairs, 333
- Academic commendation, 52
- Academic failure, 47
- Academic regulations, 35–47
- Academic year, 10
- Academy of Arts, Honolulu, 18
- Accounting, courses in, 173
- Accreditation of the University, 10
- Activities for students, 19
- Administrative intern program, 187
- Administrative officers, 10, 328
- Administrative organization, 10
- Administrative theory, course in, 55
- Admission information, 36–40
- Admission to certain programs, 39
- Advanced placement exams, 45
- Advisers (*See individual colleges*)
- Aerospace studies, 57
- Aerospace studies, courses in, 72
- Affiliate graduate faculty, 367
- Agency for International Development, 17
- Agricultural biochemistry, courses in, 271
- Agricultural economics, courses in, 271
- Agricultural engineering, courses in, 274
- Agricultural Experiment Station, 297
- Agriculture, College of Tropical, 269–298
- Agriculture, courses in, 271
- Agriculture curricula, 270
- Agronomy, courses in, 274
- Allied medical sciences, 235
- American studies, courses in, 72
- Anatomy, courses in, 237
- Animal sciences, courses in, 276
- Anthropology, courses in, 74
- Applied music, courses in, 141
- Aquarium, 16
- Arboretum, 12
- Art and architecture, courses in, 76
- Arts and Sciences, College of, 61–167
- Asia–America seminars, 73
- Asia Training Center, 17, 382
- Asian and Pacific languages, courses in, 82
- Asian studies, courses in, 91
- Associated Students of the University of Hawaii, 19
- Astronomy and physics, courses in, 148
- Athletics and sports, 20
- Attendance at classes, 41
- Auditors, 36, 41
- Awards and prizes, 29

- Bachelor's degrees, programs leading to, 48
 - (*See also individual colleges*)
- Bacteriology (*See Microbiology*)
- Balinese, 83
- Biochemistry, courses in, 238
- Biological Laboratory, Honolulu, 18
- Biology, courses in, 92
- Biomedical Research Center, Pacific, 15, 379
- Biophysics, courses in, 239
- Bishop Museum, Bernice Pauahi, 18
- Board of regents, 10, 327
- Botany, courses in, 92
- Budget, student expenses, 25
 - (*See also Tuition and fees*)
- Bureau of Student Activities, 19
- Business Administration, College of, 169–181
- Business analysis and statistics, courses in, 175
- Business economics, courses in, 176
- Business, graduate courses in, 180
- Business law, courses in, 175

- Cafeterias, 25
- Calendar, University, 3
- Cambodian, 83
- Campus housing, 24
- Campus locations, 9
- Campus map, 400
- Career Planning Office, 21
- Cebuano, 83
- Center for Engineering Research, 213, 373
- Central Programs, EWC, 323
- Ceramics, courses in, 79
- Certificates (*See subject listings*)

- Certification programs, 187
 Chairs, academic, 333
 Changes in study programs, 42
 Chemistry, courses in, 95
 Chinese, courses in, 83
 Civil Defense Training Program, 230
 Civil engineering, courses in, 214
 Civil engineering curriculum, 209
 Class attendance, 41
 Classification of students, 35
 Classified professional certificate, 188
 College aptitude tests, 37, 39
 College of Arts and Sciences, 61-167
 College of Business Administration, 169-181
 College of Education, 183-206
 College of Engineering, 207-227
 College of General Studies, 229-231
 College of Health Sciences and Social Welfare, 233-268
 College of Tropical Agriculture, 269-298
 Colors of the University, 11
 Commercial Fisheries Lab, 18
 Communications Service Center, 12
 Community College System, 10, 319, 387
 Comparative medicine division, 237
 Computing Center, 16, 386
 Conference Center, 230
 Continuation at the University, 46
 Cooperating institutions, 17
 Cooperative Extension Service, 298, 382
 Costs, 25 (*See also* Tuition and fees)
 Council of deans, 11
 Counseling and Testing Center, 21
 Course examinations, 44
 Course numbering system, 4
 Course schedules, 5
 Courses, announcement of (*See listings under individual departments*)
 Credits, grades and examinations, 43-46
 Credit by examination, 45
 Credit for previous foreign language study, 45
 Credit and grade-point requirements, 51
 Curricula:
 Arts and Sciences, 62
 Business Administration, 170
 Education, 184
 Engineering, 208
 Health Sciences and Social Welfare (*See individual schools*)
 Tropical Agriculture, 270, 283
 Curricular requirements, general, 49-51
 Curriculum and instruction, courses in, 190
 Diploma, five-year, 187
 Directors of special units, 329
 Dismissal and suspension, 46
 Doctor of philosophy, 48, 299
 Dormitories, 24
 Drama and theatre, courses in, 97
 Drawing, courses in, 80
 Dutch, courses in, 110
 Early admission program, 40
 East-West Center, 10, 321, 390
 Economic Research Center, 11, 373
 Economics, courses in, 99
 Economics, business, courses in, 176
 Education, bachelor of, 186
 Education, College of, 183-206
 Education, Research and Development Center, 11, 373
 Education, home economics, courses in, 295
 Education, industrial, courses in, 194
 Educational administration, courses in, 195
 Educational communications, courses in, 196
 Educational foundations, courses in, 197
 Educational psychology, courses in, 199
 Educational Television Broadcasting Service, 12, 384
 Electrical engineering, courses in, 218
 Electrical engineering curriculum, 210
 Elementary education program, 185
 Emeriti of the University, 331
 Emotionally disturbed, certification in teaching, 189
 Employment, student, 28
 Engineering, College of, 207-227
 Engineering, courses in, 214
 Engineering curricula, 208
 English, courses in, 104
 English as a second language, courses in, 108, 109
 English Language Institute, 54; courses in, 108
 Enrollment, University, 392
 Entomology, courses in, 278
 Entrance requirements, 36-40
 European languages, courses in, 110
 Evening courses, 229
 Examination, credit by, 45
 Examinations, 44
 Expenses, student, 25 (*See also* Tuition and fees)
 Extension Service, Cooperative, 298, 382
 Deans' list, 29
 Degree programs, 48 (*See also respective colleges*)
 Dental hygiene, courses in, 255
 Dental hygiene curriculum, 254
 Faculty and staff, 327
 Failure, academic, 47
 Fashion design, courses in, 292
 Federal Grant Program, 27

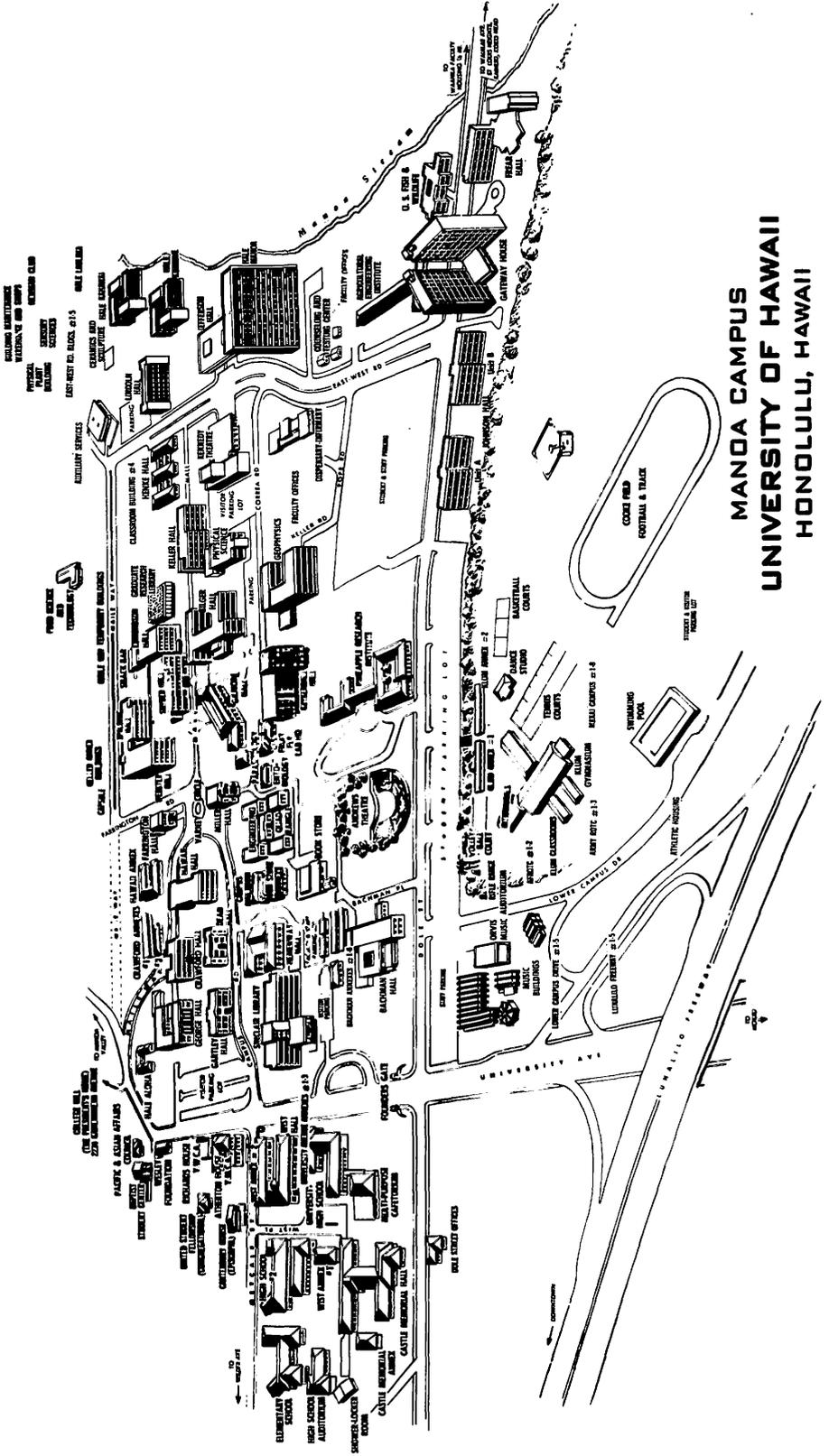
- Federal Loan Program, 28
 Fees and tuition, 32
 Fijian, 83
 Finance, courses in, 174
 Financial aids, 25
 Financial obligations, 23
 Fine arts, bachelor of, 67
 Five-year diploma, 187
 Food and nutritional science, courses in, 293
 Food science and technology, courses in, 279
 Food service administration, courses in, 294
 Food services, 25
 Foreign Contracts office, 384
 Foreign language lab, 385
 Foreign language placement exams, 44
 Foreign student adviser, 22
 Frear Hall, 24
 French, courses in, 110
 Freshmen admission
 Residents, 36
 Out-of-state, 38
 Freshmen orientation period, 20
 Fruit Fly Laboratory, 18
 Full-time students, definition of, 35
- Gateway House, 24
 General curricular requirements, 50
 General education core, 49
 General engineering curriculum, 211
 General engineering, courses in, 223
 General information, 9
 General science, courses in, 118
 General Studies, College of, 229-231, 368
 Genetics, courses in, 240
 Geodesy, courses in, 122
 Geography, courses in, 118
 Geology, courses in, 123
 Geophysics, Hawaii Institute of, 13, 375
 Geophysics, solid earth, courses in, 126
 Geosciences, courses in, 122
 German, courses in, 112
 Government (*See* Political science)
 Grade-point ratios, 44
 Grade-point requirements, 51
 Grades, 43
 Graduate Division, 299
 Graduate faculty, affiliate, 367
 Graduate Research Library, 12
 Graduate students, admission of, 40
 Graduation requirements, 49-51
 Grants and scholarships, 26
 Greek, courses in, 113
- Hale Kahawai, 24
 Hale Laulima, 24
 Haleakala observatory, 14
- Handicapped students services, 58
 Hawaii Agricultural Experiment Station, 297, 374
 Hawaii Cooperative Fishery Unit, 13
 Hawaii Curriculum Center, 369
 Hawaii Institute of Geophysics, 13, 375
 Hawaii Institute of Marine Biology, 13, 377
 Hawaii Upward Bound, 15
 Hawaiian, courses in, 85
 Hawaiian Sugar Planters' Association, 18
 Health and physical education, courses in, 202
 Health requirements, 20
 Health Sciences and Social Welfare, College of, 233-268
 Health Service, Student, 20
 Hemenway Union Board, 19
 Hilo Campus, 9, 305-318
 Hindi, courses in, 86
 History, courses in, 127
 History of the University, 9
 Home economics, courses in, 291
 Home economics curricula, 283
 Home economics education, courses in, 295
 Home management, courses in, 295
 Honorary societies, 29
 Honors courses, 53
 Honors program, 52
 Horticulture, courses in, 280
 Housing, student, 24
 Human development, courses in, 296
 Hydrology, courses in, 125
- Ilocano, 83
 Incomplete grades, 43
 Indonesian, courses in, 86
 Industrial education, courses in, 194
 Industrial Relations Center, 13
 Information about University, 9
 Inquiries by prospective students, 11
 Institute for Astronomy, 14, 377
 Institute for Student Interchange, 321
 Institute for Technical Interchange, 322
 Institute of Advanced Projects, 322
 Institutional Research Office, 14
 Instructional staff, 333
 Insurance, courses in, 174
 Interdisciplinary studies, courses in, 55
 International training, 17
 International programs, 17, 385
 International Student Office, 22
 Intramural athletics, 20
 Italian, courses in, 114
- Japanese, courses in, 87
 Javanese, 83
 Johnson Hall, 24
 Johnson Hall Learning Project, 58
 Journalism, courses in, 108

- Ka Leo, 19 (*See also* Journalism)
- Ka Palapala, 19 (*See also* Journalism)
- Korean, courses in, 89
- Labor-Management Education Program, 13
- Laboratory of Sensory Sciences, 14, 378
- Land Study Bureau, 14, 378
- Language placement exams, 44
- Lao, 83
- Late registration, 41
- Latin, courses in, 114
- Law, business, courses in, 175
- Legislative Reference Bureau, 14, 385
- Library activities, 370
- Library facilities, 12
- Library fines, 23
- Library Studies, School of, 301-304
- Linguistics, courses in, 132
- Literature (*See* English)
- Living accommodations, 24
- Loan funds, 28
- Low scholarship warnings, 47
- Lyceum series, 231
- Lyon Arboretum, 12, 373
- Lockers, book, 22
- Majors and requirements:
- Arts and Sciences, 64
 - Business Administration, 171
 - Education, 185
 - Engineering, 207
 - Health Sciences and Social Welfare
(*See individual schools*)
 - Tropical Agriculture, 270, 283
- Management, courses in, 177
- Manuscript criticism service, 231
- Marathi, 83
- Marine Biology, Hawaii Institute of,
13, 377
- Marketing, courses in, 177
- Master's degrees, 48, 299
(*See also respective schools and colleges*)
- Mathematics, courses in, 133
- Mature persons, admission of, 38
- Maximum registration, 41
- Mechanical engineering, courses in, 223
- Mechanical engineering curriculum, 212
- Medical science, courses in, 258
- Medical technology, courses in, 247
- Medical technology division, 244
- Medicine, courses in, 241
- Medicine, School of, 233-250
- Mentally retarded, certification in
teaching, 189
- Meteorology, courses in, 125
- Microbiology, courses in, 135
- Military science, courses in, 137
- Military training, 56
- Motto of the University, 11
- Music, courses in, 137
- Music degree program, 68
- Non-credit courses, 230
- Numbering of courses, 4
- Nurses, program for registered, 253
- Nursing, School of, 251-259
- Nursing curriculum, 252
- Nursing, professional, 256
- Nursing, technical, courses in, 259
- Nutrition, courses in, 294
- Obstetrics and gynecology, 243
- Ocean engineering, 213;
courses in, 224
- Oceanography, courses in, 143
- Off-campus credit courses, 229
- Off-campus housing, 25
- Officers of the University, 10, 328
- Organization of the University, 10
- Orientation for freshmen and
new students, 20
- Overseas Career Program, courses in, 145
- Out-of-state student admission, 38
- PACE Program, 230
- Pacific and Asian Affairs Council, 18
- Pacific and Asian Linguistics
Institute, 15, 379
- Pacific Biomedical Research Center, 15, 379
- Pacific islands studies, 299
- Pacific languages (*See* Asian and
Pacific languages)
- Pacific Lexicography Center, 15
- Painting, courses in, 80
- Pali, 83
- Parking and traffic, 23
- Part-time employment, 28
- Part-time students, 35
- Pass-fail program, 44
- Pathology, courses in, 243
- Peace Corps, 17, 385
- Pediatrics, 247
- Personnel and industrial relations,
courses in, 178
- Pharmacology, courses in, 248
- Philosophy, courses in, 145
- Photography, courses in, 80
- Physical education (*See* Health and
physical education)
- Physics and astronomy, courses in, 148
- Physiology, courses in, 249
- Pineapple Research Institute, 18
- Placement office, 21
- Planning and Public Policy Institute, 15
- Plant pathology, courses in, 281
- Plant physiology, courses in, 282

- Political science, courses in, 152
 Portuguese, courses in, 115
 Poultry science (*See* Animal sciences)
 Premedical curriculum, 71
 Preprofessional programs, 70
 Preservice teacher education program, 184
 Presidents of the University, former, 327
 Press, University, 16, 387
 Printmaking, courses in, 81
 Prizes and awards, 29
 Probation, 46
 Professional certificate, teachers', 188
 Professional nursing, 252
 Psychiatry, 249
 Psychology, courses in, 154
 Psychology, educational, 199
 Public Health, School of, 260-265, 379
 Public health, courses in Medicine, 250
 Purposes of undergraduate instruction, 48
- Readmission, 46, 47
 Real estate, courses in, 179
 Recreation curriculum, 187
 Refunds, 33
 Regents, 10, 327
 Registered nurses program, 253
 Registration information, 41
 Religion, courses in, 158
 Renumbering of courses, 4
 Requirements for admission, 36-40
 Requirements, credit and grade-point, 51
 Requirements, continued registration, 46
 Requirements, undergraduate degree, 49
 Requirements, University curricular, 50
 Research administration, 389
 Research and service operations, 11
 Research units, 373
 Reserve Officers Training Corps, 56
 Residence accommodations, 24
 Residence requirements, 51
 Residential learning project, 58
 Russian, courses in, 115
 Russian area studies certificate, 58
- Samoan, 83
 Sanskrit, courses in, 90
 Scholarships and grants, 26
 Scholastic standards, 46
 School administration certificate program, 187
 School counseling certificate program, 188
 School of Library Studies, 301-304
 School of Medicine, 233-250
 School of Nursing, 251-259
 School of Public Health, 260-265
 School of Social Work, 266-268
 School of Travel Industry Management, 171, 179
- School psychology certification, 187
 Science, bachelor of (*See* colleges)
 Science, general, courses in, 118
 Sculpture, courses in, 81
 Seal of the University, 11
 Secondary education program, 185
 Selected Studies program, 52
 Seminars, Asia-America, 73
 Senate, University, 11
 Sensory Sciences Lab, 14, 378
 Service units, 382
 Services to handicapped, 58
 Sinclair Library, 12
 Social Science Research Institute, 15, 380
 Social sciences, course in, 159
 Social security numbers, 36
 Social Welfare Development and Research Center, 15, 381
 Social work, courses in, 266
 Social Work, School of, 266-268
 Sociology, courses in, 160
 Soil science, courses in, 275
 Solid earth geophysics, courses in, 126
 Spanish, courses in, 116
 Speakers' Bureau, 231
 Special instructional programs, 52
 Speech and Hearing Clinic, 16
 Speech Communication Center, 16
 Speech-communication, courses in, 163
 Speech pathology and audiology, courses in, 235
 Staff and faculty, 327
 Statistical and Computing Center, 16, 386
 Student activities, 19
 Student affairs, 19-31
 Student Affairs, Office of, 372
 Student classification, 35
 Student conduct, 23
 Student employment, 28
 Student Health Service, 20,
 Student housing, 24
 Student regulations, 23
 Student services, 20
 Student services office, Arts and Sciences, 368
 Student teaching, 186
 Summer session, 10, 32
 Surgery, 250
 Suspension and dismissal, 46
- Tagalog, courses in, 90
 Tamil, 83
 Teachers' professional certificate, 188
 Teaching culturally disadvantaged, 189
 Teaching emotionally disturbed, 189
 Teaching mentally retarded, 189
 Technical nursing, courses in, 259
 Technical nursing program, 254
 Testing Center, 21
 Textile design, courses in, 81

- Textiles, fashion design, courses in, 292
Thai, courses in, 90
Theatre and drama, courses in, 97
Theory of administration, course in, 55
Time limitation for bachelor's degree, 51
Traffic and parking, 23
Traffic fines, 23
Transcripts, 33, 38
Transfer within University, 42
Transfer students admission, 38
Transportation, courses in, 179
Travel industry management, courses in, 179
Travel Industry Management, School of, 171, 179
Tropical Agriculture, College of, 269-298
Tropical medicine, 250
Trukese, 83
Tuition and fees, 32
Tutoring, 58
- Unclassified students, 35
(See also College of General Studies)
Undergraduate admission to certain programs, 39
Undergraduate degree requirements, 49
Undergraduate instruction, purposes of, 48
Unit of high school work, definition of, 38
U.S. Bureau of Commercial Fisheries, 18
U.S. Geological Survey, Volcano Observatory, 18
University calendar, 3
University curricular requirements, 50
University of Hawaii Press, 16, 387
University Placement and Career Planning Office, 21
University Planning Office, 389
University Relations and Development, 15
University Theatre, 19
Urdu, 83
- Variable credit courses, 42
Veterans admission, 34, 39
Vice-presidents offices:
Academic Affairs, 387
Business Affairs, 388
Community Colleges, 387
Continuing Education, 389
Student Affairs, 372
Vietnamese, 83
Visiting faculty, 366
Visual design, courses in, 81
Vocational agriculture program, 185
Vocational home economics program, 185
Volcano observatory, 18
- "W" grades, 42, 44
Waikiki aquarium, 16
Warning of low scholarships, 47
Water Resources Research Center, 16, 381
Weapons, prohibition of, 23
Weaving, courses in, 82
Withdrawal from courses or University, 42
- Zip codes, 36
Zoology, courses in, 165

MANOA CAMPUS UNIVERSITY OF HAWAII HONOLULU, HAWAII



University of Hawaii
Honolulu, Hawaii 96822