## UNIVERSITY OF HAWAII AT MANOA

#### 1973-1974 CALENDAR

### 1973 Fall Semester (84 days)

- **August 20-24**: Monday-Friday, Academic advising
- **August 27-31**: Monday-Friday, Registration, academic advising, orientation
- **September 3**: Monday, Holiday: Labor Day
- **September 4**: Tuesday, First day of instruction
- **September 17**: Monday, Last day to register for credit
- **September 21**: Friday, Last day to withdraw from courses
- **October 8**: Monday, Holiday: Columbus Day
- **October 22**: Monday, Holiday: Veterans' Day
- **November 1**: Thursday, Deadline for undergraduates and unclassified graduates to apply for the fall semester (new and returning students)
- **November 21**: Wednesday, Last day for instructors to remove incompletes
- **November 22**: Thursday, Holiday: Thanksgiving Day
- **December 13**: Thursday, Last day of instruction
- **December 14-15**: Friday-Saturday, Study period
- **December 17-22**: Monday-Saturday, Final examinations
- **December 23**: Sunday, Commencement
- **December 23**: Sunday, Fall semester ends
- **December 25**: Tuesday, Holiday: Christmas
- **January 1**: Tuesday, Holiday: New Year's

### 1974 Spring Semester (84 days)

- **January 7-11**: Monday-Friday, Academic advising
- **January 14-18**: Monday-Friday, Registration, academic advising, orientation
- **January 21**: Monday, First day of instruction
- **February 1**: Friday, Last day to register for credit
- **February 8**: Friday, Last day to withdraw from courses
- **February 18**: Monday, Holiday: Presidents' Day
- **March 26**: Tuesday, Holiday: Kuhio Day
- **April 5**: Friday, Last day for instructors to remove incompletes
- **April 8-13**: Monday-Saturday, Spring recess
- **April 12**: Friday, Holiday: Good Friday
- **May 1**: Wednesday, Deadline for undergraduates and unclassified graduates to apply for the fall semester (new and returning students)
- **May 7**: Tuesday, Last day of instruction
- **May 8-9**: Wednesday-Thursday, Study period
- **May 10-16**: Friday-Thursday, Final examinations
- **May 17-18**: Friday-Saturday, Student-faculty consultation
- **May 19**: Sunday, Commencement
- **May 19**: Sunday, Spring semester ends

*Withdrawal after these dates would be allowed only with the written permission of the instructor of each course.

### 1974 Summer Session

- **June 3-July 12**: First Term
- **June 11**: Tuesday, Holiday: Kamehameha Day
- **June 24-August 2**: Second Term
- **July 4**: Thursday, Holiday: Independence Day
- **July 15-August 23**: Third Term
- **August 4**: Sunday, Commencement
- **August 16**: Friday, Holiday: Admission Day
The academic regulations stated in this catalog relate primarily to undergraduate study. Graduate students are advised to consult the Graduate Division Catalog for information concerning the Division's regulations and requirements programs of study.

This information bulletin for the academic year 1973-74 was compiled in March 1973, prior to the finalization of all academic programs for the year covered. Accordingly, descriptions and announcements of courses and curricula are subject to adjustment and change.

### COURSE NUMBERS AND DESCRIPTIONS; ABBREVIATIONS USED

In 1968 the University of Hawaii revamped its course numbering system. This new system is applicable to all campuses of the University, including its community colleges. The 1968 catalog lists all courses according to the new system with the corresponding old numbers indicated within parentheses. Further recent changes in course numbers are noted in this catalog by the corresponding old numbers indicated within parentheses wherever appropriate.

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 towards degrees ........... 500-599
   B. Courses applicable towards 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

*May be accepted by Graduate Division to fulfill graduate degree requirements.

Other course numbering guidelines are:

a. Undergraduate courses ending in —97 or —98 are experimental courses and will be offered for only one year on this basis.
b. Courses ending in an odd number are generally offered in the 1st semester or 1st and 2nd semesters. Courses ending in an even number are generally offered in the spring semester.
c. Courses ending in —99 are either directed research or directed reading courses.

courses are listed by colleges and departments (arranged alphabetically), except for some 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 the name of each department and major division is printed its abbreviated IBM code (e.g., Anth for Anthropology). This code is also used in the Schedule of Courses 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:

a. (3) I = a 3-credit course offered the first semester
b. (4) II = a 4-credit course offered the second semester
c. (3) I, II = a 3-credit course offered in the first and second semesters
d. (5-5) Yr = a year's sequence carrying 5 credits each semester
e. (v) = the number of credits may vary, arranged by the instructor in each instance.

Alongside the title of each course is the name of the faculty member(s) giving it, as best ascertained at the time this catalog was prepared in early spring of 1973. Rank, title and academic degrees of all faculty are given at the back of the catalog.

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.
# Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>GENERAL INFORMATION</td>
<td>7</td>
</tr>
<tr>
<td>STUDIO AFFAIRS</td>
<td>12</td>
</tr>
<tr>
<td>TUITION AND FEES</td>
<td>20</td>
</tr>
<tr>
<td>ACADEMIC REGULATIONS</td>
<td>23</td>
</tr>
<tr>
<td>DEGREE PROGRAMS</td>
<td>33</td>
</tr>
<tr>
<td>SPECIAL INSTRUCTIONAL PROGRAMS</td>
<td>36</td>
</tr>
<tr>
<td>Honors Programs</td>
<td>36</td>
</tr>
<tr>
<td>Liberal Studies</td>
<td>37</td>
</tr>
<tr>
<td>English Language Institute</td>
<td>38</td>
</tr>
<tr>
<td>Military Studies (ROTC)</td>
<td>39</td>
</tr>
<tr>
<td>Population Studies</td>
<td>40</td>
</tr>
<tr>
<td>National Student Exchange</td>
<td>40</td>
</tr>
<tr>
<td>Russian Area Studies</td>
<td>40</td>
</tr>
<tr>
<td>Marine Option</td>
<td>41</td>
</tr>
<tr>
<td>Kokua</td>
<td>41</td>
</tr>
<tr>
<td>Freshmen Seminar</td>
<td>41</td>
</tr>
<tr>
<td>Ethnic Studies</td>
<td>41</td>
</tr>
<tr>
<td>New College</td>
<td>42</td>
</tr>
<tr>
<td>Survival Plus</td>
<td>43</td>
</tr>
<tr>
<td>COLLEGE OF ARTS AND SCIENCES</td>
<td>44</td>
</tr>
<tr>
<td>American Studies</td>
<td>51</td>
</tr>
<tr>
<td>Anthropology</td>
<td>53</td>
</tr>
<tr>
<td>Architecture</td>
<td>54</td>
</tr>
<tr>
<td>Art</td>
<td>57</td>
</tr>
<tr>
<td>Asian Studies</td>
<td>59</td>
</tr>
<tr>
<td>Biological Sciences</td>
<td>60</td>
</tr>
<tr>
<td>Biology</td>
<td>60</td>
</tr>
<tr>
<td>Botany</td>
<td>60</td>
</tr>
<tr>
<td>Microbiology</td>
<td>61</td>
</tr>
<tr>
<td>Zoology</td>
<td>62</td>
</tr>
<tr>
<td>Chemistry</td>
<td>64</td>
</tr>
<tr>
<td>Communication</td>
<td>65</td>
</tr>
<tr>
<td>Drama and Theatre</td>
<td>66</td>
</tr>
<tr>
<td>East Asian Languages</td>
<td>67</td>
</tr>
<tr>
<td>East Asian Literature</td>
<td>70</td>
</tr>
<tr>
<td>Economics</td>
<td>71</td>
</tr>
<tr>
<td>English</td>
<td>74</td>
</tr>
<tr>
<td>English as a Second Language</td>
<td>76</td>
</tr>
<tr>
<td>European Languages and Literature</td>
<td>78</td>
</tr>
<tr>
<td>Geography</td>
<td>84</td>
</tr>
<tr>
<td>Geology and Geophysics</td>
<td>86</td>
</tr>
<tr>
<td>History</td>
<td>88</td>
</tr>
</tbody>
</table>
The University of Hawaii at Manoa is the principal campus in Hawaii’s nine-campus statewide system of higher education.

From its beginnings as a land-grant college of agriculture and mechanic arts, it has grown to a multi-dimensional university operation conducting education, research, and public service programs for the state, the nation, and the world community.

Throughout its history, UHM has emphasized studies related to the distinctive geographical and cultural setting of Hawaii. Geographical location generates interest in oceanography, marine sciences, and interdisciplinary studies of tropical environments, problems and resources. The physical characteristics of Hawaii focus academic attention in such areas as tsunami research, volcanology, astronomy, and astrophysics. The state’s multi-racial culture and close ties to Asia create a favorable environment for the study of various aspects of diverse cultural systems, including such subjects as linguistics, genetics, philosophy, and interrace relations.

In all, the University offers course work leading to the bachelor’s degree in 69 fields. The master’s degree is offered in 73 fields, and the doctorate in 34.

The UHM campus is located on some 300 acres of land in Manoa Valley, a residential section close to the heart of metropolitan Honolulu, the state capital. Easy access to the center of the commercial, cultural, and political life of Hawaii is an extra educational benefit for students.

In addition to the facilities on the main campus, the University operates various research and public service activities at locations throughout the state. The University’s statewide system of higher education maintains a second four-year campus at Hilo and seven community colleges: four on Oahu and one each on Maui, Kauai, and Hawaii. Another four-year college and another community college are in the planning stages.

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 twelve faculty members on a temporary campus in downtown Honolulu. In 1912 the campus 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.

In 1964 the state legislature authorized the University to operate a statewide community college system. The community colleges offer a variety of college transfer and general education curricula on all campuses and award associate degrees.

Colleges and Schools. The academic work of UHM is administered by seven colleges: Arts and Sciences, Business Administration, Continuing Education and Community Service, Education, Engineering, 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 Travel 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, School of Social Work. The School of Library Studies and the School of Law are additional professional schools.

Experimental programs such as New College, Ethnic Studies, Liberal Studies and others are offered. An Honors Program embraces all colleges.

The Graduate Division assumes the major role in the organization and development of graduate programs.

Accreditation. The University of Hawaii at Manoa 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.
GENERAL INFORMATION

Academic Year. The academic year is divided into two 17-week semesters and a 12-week Summer Session which offers three overlapping 6-week terms. (See "University Calendar" p. 2)

Administrative Organization. University governance is vested in a board of regents appointed by the governor of Hawaii. They in turn appoint a president of the University, who acts as executive officer of the board and is responsible for educational leadership in the University system. Chief administrative officers for the various campuses are either chancellors or provosts. The University of Hawaii at Manoa is headed by a chancellor.

Equal Opportunity Policy. The University subscribes to, and complies with, all state and federal statutes, rules and regulations and any amendments thereto, promulgated from time to time, which prohibit discrimination in its policies and practices applicable to its campuses, programs and activities.

Colors, Seal and Motto. The University of Hawaii colors are green and white. The rainbow, a frequent sight in Manoa Valley, is the 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 of the University of Hawaii at Manoa.


Addresses of other campuses are listed elsewhere in this catalog.

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. Other programs conducted by the College of Continuing Education and Community Service are discussed in that section.

The Computing Center operates an IBM 1401 system and an IBM 360/65 system, along with a supporting line of peripheral punched card equipment. It provides services in statistical consultation, system design, data processing and computing, and educational and reference advice to University divisions and departments.

The Economic Research Center conducts research studies pertinent to the economic welfare and development of Hawaii. In cooperation with the University’s academic departments, the center offers research training to advanced students.

The Education Research and Development Center facilitates educational planning and practice in Hawaii and the Pacific Basin. The center uses an interdisciplinary behavioral science approach. Major programs focus on achievement motivation, educational attainment of various ethnic and socio-economic groups, social/moral status and development, and cognitive learning.

The Environmental Center coordinates education, research, and service efforts of the University related to ecological relationships, natural resources, and environmental quality, with special relation to human needs and social institutions, with particular regard to Hawaii.

The Foreign Language Laboratories, located in Moore Hall, consist of four “library” labs and two “class” labs for foreign language learning. In the lab complex is also a professional recording studio where about half of the language tapes are produced. The master tape library contains approximately 10,000 tapes in 32 foreign languages.

The Hawaii Cooperative Fishery Unit promotes graduate training and research in fishery biology by providing students...
with support, counseling, and facilities. It functions as part of the department of zoology. The research program centers on 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 and the U.S. Bureau of Sport Fisheries and Wildlife.

The Hawaii Institute of Geophysics conducts geological, geochemical and geophysical research in the broad field of the earth sciences. Programs embrace research and advanced training in geodesy, physical oceanography, solid earth geophysics, geology, soils, geochemistry, underwater acoustics, and tsunamis. The institute maintains two research vessels, a twin engine aircraft, a ship operation facility, and a seismographic observatory.

The Hawaii Institute of Marine Biology with facilities on Coconut Island in Kaneohe Bay and at Kewalo Basin, has research programs in the marine biological sciences, including fisheries. It also provides facilities and services for faculty members, graduate students, and visiting scientists. Research programs include studies in the ecology, physiology, behavior and systematics of marine animals and plants, pollution studies, biology, chemistry and pharmacology of toxicate marine organisms, fundamental research in the interrelationship of organisms and their environment, and aquaculture research under the Sea Grant Program.

The Industrial Relations Center seeks to promote understanding of industrial relations and manpower development problems, techniques, and policies. Organized to facilitate University instruction in the disciplines and professions related to industrial relations, it also serves labor, management, and the community as the link in a continuing dialogue, reporting on changes in the field to enlarge understanding so that the public good is enhanced. The center maintains a library containing the basic information services, as well as current publications; reference service; conferences, lectures and group discussions; and training of advanced students. Research studies in basic industrial relations problems are published by the center, as well as a monthly Newsletter, a bimonthly Selected Acquisitions List, reprints, reading materials and bibliographies.

The Institute for Astronomy is responsible for University research programs in astronomy. It also assists in providing graduate training. The Institute operates observatories on Mauna Kea, Mount Haleakalā, Maui, and on the island of Hawaii for studies of the sun (especially the corona) and of the zodiacal light. On Mauna Kea, Hawaii, is an observatory for planetary and stellar studies, equipped with an 88-inch and two 24-inch telescopes. A space astronomy program has obtained high resolution ultraviolet spectrograms of the sun from rockets, and includes plans for work based on satellites and space probes.

The Instructional Resources Service Center offers assistance and consultation to faculty in examination of instructional objectives, overall strategy planning, organization of instructional media, development of media evaluating systems, and the necessary follow-up for effective development and implementation of programs.

The selection, location, production, evaluation, and effective use of media are coordinated for faculty and staff by the center. Services and facilities include twelve multi-media auditoriums on the Manoa campus and Varsity Theatre just off campus; a closed-circuit television (CCTV) system in Kuykendall Hall where videotaping can be done for instructional analysis, micro teaching, and the recording of instructional demonstrations; a Graphic Media Design section which prepares and develops graphic materials; a Media Lab with facilities for faculty media workshops, self-paced materials for learning AV equipment operation, and reference materials. Faculty wishing to make their own transparencies and other instructional materials may use the self-service facilities. The center also coordinates the preview evaluation and selection of films to be added to the University's film collection.

The Laboratory of Sensory Sciences conducts basic research in neurosciences. The research staff, representing several disciplines including experimental and comparative psychology, neurophysiology, and biophysics, share a common interest and actively collaborate in work on problems of the reception, processing, and integration of sensory information by nervous systems. Techniques in use include animal training, psychophysical testing, computer analysis and modeling, surgical and pharmacological intervention, and electrical stimulation and recording. Many different animals, vertebrate and invertebrate, are studied. They are selected primarily on the basis of their experimental suitability for studying problems of general biological significance, although there is interest also in comparative analysis.

The laboratory also works with staff of academic departments and other research institutes. Graduate students are formally associated with one of the academic departments in which members of the research staff hold appointments (physiology, psychology, zoology) although they are encouraged in their research to take advantage of the interdisciplinary character of the laboratory. Active graduate and post-doctoral training programs are being developed, as well as a program for senior visiting investigators.

The Land Study Bureau plans and conducts basic and applied research, and publishes its findings, with the objective of achieving highest and best use of the lands of Hawaii. It participates in the University's teaching program and works cooperatively with students, faculty and staff to seek solutions to Hawaii's environmental, economic and social problems. The bureau also advises and participates in the technological and economic development of areas throughout the Pacific and Asia.

The University of Hawaii Library provides extensive library resources for the University community. Collections total approximately 1,200,000 volumes, including 15,000 currently received periodicals.

The main book, periodical and microform collections are in Thomas Hale Hamilton Library. The open stacks contain approximately 730,000 volumes.

The undergraduate collection in Gregg M. Sinclair Library has 85,000 books and periodicals. It includes the Reserve Book Room (for graduate and undergraduate courses), a browsing collection, a collection of college catalogs, and a Clearinghouse for Innovative Developments in Higher Education, and the Listening Center.

Special research collections also in the Sinclair Library building are the Asia Collection, Hawaiian and Pacific Collections, Government Documents, Rare Books and University Archives.
GENERAL INFORMATION

Audio-visual Services, also in Sinclair, maintains a 16mm film collection and various types of portable projection and audio equipment. It also maintains decentralized pools of such equipment in seven classroom buildings on campus.

The JKK Look Laboratory of Oceanographic Engineering conducts experimental research on hydraulic engineering problems related to structures in and physical characteristics of the coastal zone and deeper ocean. It also researches physiological problems related to human performance in the sea. Laboratory facilities include water wave tanks and hyperbaric facilities, as well as an 18-foot runabout. The laboratory is part of the department of ocean engineering.

The Harold L. Lyon Arboretum occupies 124 acres in Manoa Valley, about 2.5 miles from the Manoa campus. Facilities include two green-houses, office-laboratory buildings, and approximately 6,000 accessions inventoried and maintained for instruction and research in botany, biology, zoology, agriculture, phytochemistry, pharmacology, medicine, art, and architecture. An herbarium with approximately 2,000 specimens and a reference library is also maintained.

The Pacific and Asian Linguistics Institute researches languages of Asia, the Pacific Basin and the Americas, with special attention given to previously undescribed languages. Work includes compilation of bi-lingual dictionaries, grammatical descriptions and pedagogical materials. The institute also conducts research in the areas of sociolinguistics, bilingualism, and language planning for the Pacific area.

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 microbiology, physiology, biochemistry, biophysics, and psychology, in which it fosters research projects of biomedical interest. It also maintains the Kewalo Marine Laboratory at Kewalo Basin.

The Pacific Urban Studies and Planning Program is guided by participating academic departments and professional schools—architecture, economics, engineering, geography, political science, public health, social work, and sociology. The program offers graduate studies emphasizing planning and regional development: sponsors and facilitates problem-oriented research on urban and planning problems, particularly those relevant to Hawaii, the Pacific Basin and Asia; and participates in, coordinates with, and supports related efforts throughout the University.

The Population Genetics Laboratory conducts research in human genetics, especially on peoples of the Pacific Basin. The CDC 3100 computer at the laboratory is used also by visiting investigators from other institutions. The laboratory has been designed by the World Health Organization as its International Reference Center for Processing of Human Genetics Data.

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. Emphasis is given to comparative studies, futuristic analysis, and quantitative methodology. The institute is developing new programs in Hawaii community studies, political leadership, automation and society, comparative legislative studies, and multi-disciplinary seminars. It assists a program for the study of contemporary Korea as well as a long-term study of culture and mental health in Asia and the Pacific. Support services include computer consultation, manuscript typing, distribution of working papers and publications, information on social science research and grant assistance.

The Social Welfare Development and Research Center, located in the School of Social Work, provides interdisciplinary continuing education, consultation, and research in social welfare, with emphasis on problems of juvenile delinquency and youth development. It uses an education model which treats planning, training, and program evaluation as a part of a single interrelated process. Primary focus is on new and innovative approaches and techniques.

The Speech and Hearing Clinic is operated by the division of speech pathology and audiology of 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 Survey Research Office provides survey technical facilities to campus researchers and uses those facilities in generating and reporting data required for the planning, administration, and evaluation of the University system. Services include consultation on study design, questionnaire construction, sampling, data-collection, data-processing, analysis, and reporting. A data archive is maintained for purposes of secondary analysis. Faculty-course evaluations are offered to interested faculty members.

The University Press of Hawaii publishes books, journals, and films of high merit which add to the sum of knowledge, particularly those which reflect the regional or special interests and responsibilities of the University, the East-West Center, and other scholarly research organizations in the state. All titles published carry the imprint "The University Press of Hawaii." Titles published for the East-West Center also carry the subimprint "An East-West Center Book." It is a member of the Association of American University Presses and the International Association of Scholarly Presses. Books of general interest as well as scholarly monographs, and four scholarly journals, Asian Perspectives, Oceanic Linguistics, Pacific Science, and Philosophy East and West, are published. The Press also operates a sales program, East-West Export Books, in Asia and the Near East on behalf of 12 American scholarly publishers.

Editorial control (final selection of manuscripts) is vested in a board made up of University of Hawaii faculty members appointed by the president with the advice of the EWC chancellor. Faculty members are encouraged to submit book-length manuscripts to the director. Journal papers should be submitted to the respective editors.

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 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 as a place for the education and recreation of Hawaii’s residents and visitors.

The Water Resources Research Center plans and conducts research related to Hawaii's water resources, assists and promotes instruction in water resources in several academic departments, and provides for training opportunities of engineers and scientists through research. Research is interdisciplinary with a broad base of physical sciences, technology, ecology, 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 operates research laboratories and field research facilities.

INTERNATIONAL PROGRAMS

The international relations of the University are coordinated by the president. The All-University Advisory Council on the International Relations of the University of Hawaii provides for information exchange, cooperation and coordination among the units of the University. As necessary the Advisory Council provides reports and policy advice to the University community.

Currently more than 200 of the University’s activities have an international dimension. The University of Hawaii ranks fourth nationally in number of foreign scholars and eleventh in foreign student enrollment.

The University also provides an academic house for the only nationally funded Center for Cultural and Technical Interchange Between East and West: the East-West Center, with institutes devoted to the study of communications, culture learning, food, population, and technology and development. (See section on "East-West Center.")

COOPERATING INSTITUTIONS

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

The Bernice P. Bishop Museum contains an outstanding reference library as well as a world-renowned collection of anthropological collections relating to Hawaii and other Pacific islands. This institution also holds the combined herbaria of the University and the museum, the most complete collection of Hawaiian plants in existence. Museum research facilities are available to University students on a reciprocal basis.

The Hawaiian Fruit Flies Investigations Laboratory is maintained on the campus by the U.S. Department of Agriculture, Agricultural Research Service. It develops basic information on, and methods for, the control and eradication of fruit fly agricultural pests, and makes recommendations on the treatment of produce to pass through quarantine into mainland and other markets. A substation is located at the Waiakea Experimental Farm near Hilo. The laboratory cooperates with the department of entomology and other University and state agencies.

The Hawaiian Sugar Planters' Association provided, jointly with the Pineapple Research Institute, funds for building the Agricultural Engineering Institute shop facilities for instruction and research. The association donated its Experiment Station arboretum—the renowned 124-acre H.L. Lyon Arboretum—to the University. HSPA has provided grants to the departments of agronomy and soils, and plant pathology. It has supported a graduate fellowship in entomology. HSPA Experiment Station staff scientists and engineers serve as members of the affiliate graduate faculty, supervise graduate students in research, and work on joint research projects with the University.

The Honolulu Academy of Arts is a nationally accredited museum which features a world-renowned collection of Asian art treasures as well as outstanding Occidental holdings. The permanent collections are augmented by a diversified schedule of temporary exhibitions from world-wide sources and a research library for members, scholars and students. An extensive education program is conducted for young people and adults, with special benefits offered to Academy members. The Academy's extension for Asian decorative arts, Spalding House and gardens, provides the setting for exhibitions, lectures, programs, demonstrations and a center for the exhibition and study of Ukiyo-e wood-block prints.

The Pacific and Asian Affairs Council provides a World Affairs Program as an educational service to all public and private secondary schools throughout the state. The program operates in the schools as a major curriculum supplement. To produce the program, PAAC coordinates educational and professional resources in international affairs.

The Pineapple Research Institute of Hawaii, supported by the pineapple industry, has most of its staff of scientists on the affiliate graduate faculty of the University. Offices and laboratories are located near Wahiawa, Oahu.

The Honolulu Laboratory of the Southwest Fisheries Center National Marine Fisheries Service, NOAA, U.S. Department of Commerce, is located adjacent to the campus. Several senior staff members hold appointments on the affiliate graduate faculty. The laboratory conducts 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.

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

The University of Hawaii at Manoa offers a wide variety of programs and activities in which students are encouraged to participate. These programs and activities are provided for the entire University community and are administered by students. Programs available include cultural/social activities, public affairs, educational experimentation, community service, publications/radio, and recreation. Two major organizations which provide most of these programs and services are the Associated Students of the University of Hawaii (ASUH) and the Campus Center Board (CCB).

ASUH through its elected officers serves as the administrative and legislative body for students in participating in the policy making councils at Manoa. Among the activities directly administered by ASUH are experimental courses, innovative, interdisciplinary programs, other programs and services, and funding for a series of major symposia on public affairs.

CCB presents programs in the cultural, social, recreational, and public affairs areas. It operates as an all-University representative body comprising not only students, but faculty, administration, and alumni as well. The scope of its present programs, administered by the Activities Council, will be greatly expanded upon completion of the Campus Center in 1974.

*Ka Leo O Hawai‘i*, the campus newspaper, is staffed by students. Opportunities are available in news-editorial writing, advertising, and also in the print shop of the Board of Publications Press. The board which serves as publisher for *Ka Leo* also publishes *Hawaii Literary Review* and a Manoa campus Directory.

Other programs and activities of general interest to students are theatrical productions; about 150 different scholastic, honorary, professional, religious, social, departmental, special interest and residence organizations; the University band, chorus and orchestra; and sports, including intercollegiate athletics and intramurals.

Students interested in participating in any of these programs or who want to find out what other organizations and programs are available should inquire at the Bureau of Student Activities on the second floor of Hemenway Hall (moving to the new campus center in January 1974). The Bureau of Student Activities is responsible for coordination of programs and services.
Orientation for Freshmen and New Students

The office of Admissions and Records and the Associated Students of the University of Hawaii conduct an orientation program prior to the beginning of each semester. Its purpose is to acquaint students with UHM academic programs, registration procedures, services offered by the office of Student Affairs, and student life on the Manoa campus.

Academic advising is provided by the student services division of a student’s academic college prior to and during registration week.

Intramural-Extramural Sports Program

The intramural-extramural program at the University of Hawaii gives students and staff opportunities to participate in competitive and noncompetitive, organized and informal sports activities as regularly as their time and interests permit. This is accomplished by taking part in one or both of two basic aspects of the program: (1) organized and competitive, (2) informal, self-directed, less competitive.

In the former, participants enter teams or individually in meets, leagues and tournaments and play according to specific schedules. This competition involves prearranged facilities, equipment, supervision, officials, and usually recognition through awards and student newspaper publicity.

The second phase or informal participation lacks most of the foregoing characteristics and emphasizes self motivated, impromptu recreation. For example, when facilities are available, students swim, shoot baskets, lift weights, play tennis, badminton, or volleyball.

Most of the basic equipment is available on a checkout basis. The program is essentially voluntary and free with the exception of bowling and golf for which there are the usual fees.

Each year the intramural staff organizes tournaments and leagues for twenty different activities. Students may contact the Intramural Office at 948-7694 for further information concerning the program.

For instruction in the various activities offered in the program, see listings under Health & Physical Education section of the College of Education in this catalog.

Intercollegiate Athletics. University teams compete in the following varsity sports: baseball, basketball, cross-country, football, golf, gymnastics, sailing, soccer, swimming, tennis, track/field, volleyball, water polo, wrestling. Interested students should contact the athletic department for further information regarding participation in the intercollegiate program.

Liability for Injury. 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, 1710 East-West Road, assists the student in protecting his health. Facilities include both an out-patient clinic and an infirmary. Most student illnesses can be cared for through this service. If simple bed care is indicated, the student may be admitted to the infirmary. The clinic is open from 8:00 a.m. to 4:30 p.m., Monday through Friday; and 9:00 a.m. to 11:00 a.m. on Saturday. Physicians are present at the clinic from 8:30 a.m. to 11:45 a.m. and 12:30 p.m. to 4:15 p.m. Monday through
Friday; and 9:00 a.m. to 11:00 a.m. on Saturday. A nurse is available during off-duty hours for emergency services only.

Although the service is free, students must pay for drugs prescribed and there is an infirmary charge of $4.00 a day. The health care services are limited; supplemental health and accident insurance is therefore essential to provide the student with medical care beyond the scope of this service. The health service strongly endorses the ASUH-sponsored health plan, the cost and benefits being superior to most health insurance plans open to student subscribers. Consult the student activities bureau and the student health service for information.

The University requires that all newly registered daytime students undergo a complete medical examination, and the results of this examination must be submitted to the health service on the University of Hawaii Health Form for approval before medical clearance can be granted and registration completed. **REGISTRATION AS WELL AS MEDICAL SERVICES WILL BE DENIED ALL STUDENTS WHO DO NOT COMPLY WITH THIS REQUIREMENT.** Students who are returning to the University to continue their education after being away more than four years must resubmit this health form for approval. Payment for these preadmission medical examinations is the personal responsibility of the student.

Tuberculosis remains a distinct hazard for all students. All students must have a TB skin test or chest x-ray performed three months prior to enrollment. Positive reactors of the skin test must follow up with a chest x-ray taken immediately and annually thereafter.

All foreign students will be skin tested upon arrival on campus. Positive reactors will be required to have a chest x-ray taken in Hawaii. A repeat chest x-ray is also required by the state of all students applying for visa renewals.

Residents of University housing must obtain a medical clearance from the health service before they are permitted to reside in the residence halls. Students afflicted with any contagious illness must leave the residence hall for the duration of the contagious period of the illness.

**University Placement and Career Planning**

The office of Placement & Career Planning is concerned with those aspects of education and personal development which deal with student and alumni search for an optimum career. Services are provided in areas of self-appraisal, vocational and employment information, specific job opportunities, job-seeking campaigns, evaluation of offers, and graduate studies. Counseling services are primarily career and employment oriented and stress self understanding and the candidate’s responsibility for his own future. Placement services supplement the personal initiative and creativity of students in making career decisions compatible with their interests, qualifications, needs and values.

The office cultivates the interest of prospective island, mainland and overseas employers and provides them with facilities to contact students and former students who are seeking career 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 a teaching or other academic career.

Campus interviews for graduating students are scheduled with recruiting representatives of mainland and Hawaii organizations that offer career opportunities in business, industry, education, government and the military. A few recruiting organizations show interest in hiring foreign students for employment in their home countries. The campus interviewing program is conducted primarily during October, November, February and March. In addition, several hundred employment opportunities are listed each year by employers who find it impractical to make campus visits.

Early registration is encouraged during the final year of study or earlier for students who have a need for career planning assistance. All services are extended to University of Hawaii alumni.

**Counseling and Testing Center**

The Counseling and Testing Center’s staff consists of professionally trained psychologists, psychiatrists, psychometrists and interns. They function, as a team, on the University campus in 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.

**International Student Office**

The International Student Office serves both foreign and American students. It helps those from other countries with government regulations and procedures, institutional rules and regulations, finances, employment, living arrangements, and encourages the development of meaningful and continuing relationships between foreign students and the community. Special orientation programs are held at the beginning of each semester to provide an understanding of American culture, values, and institutions in order to assist in the foreign student’s transition to American academic life.

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

Non-U.S. citizens who are graduates of a university and are applying for admission to the University of Hawaii should write to: Graduate Division Student Services, University of Hawaii, 2540 Maile Way, Honolulu, Hawaii 96822. Those interested in undergraduate admission should contact: Office of Admissions and Records, University of Hawaii, 2444 Dole Street, Honolulu, Hawaii 96822.

**Lockers**

Steel book lockers for students are available on the second floor of Wist Hall. Use of a locker for the first and second semesters may be obtained by calling 948-8961 with the number of the locker desired. The Facilities Management office will advise the student about pickup of the key. All keys must be returned before Commencement.
Food Services

East-West Center Cafeteria is a complete food service facility in Jefferson Hall, including a cafeteria, snack bar and private dining rooms. Special parties and catered events can also be scheduled.

Gateway House Cafeteria offers an unlimited-seconds meal program for breakfast and supper Monday-Friday for students in residence halls. Gateway also serves an a la carte lunch which is open to anyone.

Hale Aloha is a new cafeteria serving residence halls on a boarding program similar to Gateway. An off-campus meal program is also served from this unit.

Hemenway Hall Cafeteria serves plate lunches, sandwiches and snacks.

A Snack Bar in the northeast section of the campus also offers plate lunches, sandwiches and snacks.

Vending. Food vending machines are also located throughout the campus providing 24-hour service.

The Campus Center is under construction near Hemenway. It will provide special party rooms, banquet facilities, snack bar, and an a la carte dining room. The first phase of this new structure is expected to be completed in 1974.

Expenses

The estimated minimal expenses of attending the University of Hawaii at Manoa for the 1973-74 academic year are indicated below:

<table>
<thead>
<tr>
<th></th>
<th>Resident*</th>
<th>Nonresident*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off-campus housing</td>
<td>$2,662</td>
<td>$3,172</td>
</tr>
<tr>
<td>University residence hall</td>
<td>2,143</td>
<td>2,653</td>
</tr>
<tr>
<td>Living at home</td>
<td>............</td>
<td>1,663</td>
</tr>
</tbody>
</table>

These estimates do not include the costs related to dependents, transportation for out-of-state students, extensive medical/dental care. They include costs for board, room, tuition, books, supplies, fees other than those related to curricula, clothing, recreation and personal/miscellaneous.

STUDENT HOUSING

Although finding suitable housing has been a major problem for University of Hawaii students for several years, the opening of the new Hale Aloha residence hall complex with its 1,020 bed capacity has reduced the problem. However, the prospective student is still reminded that acceptance to the University does NOT assure him of housing and that housing in Honolulu is scarce and expensive.

For the fall semester there will be on-campus residence hall facilities for about 1,900 single students. Almost all of these assignments go to state of Hawaii residents since priority is given to them. There are no facilities on campus for married students.

Students are cautioned to be prepared to make temporary housing arrangements in hotels or other quarters in advance, if possible, and to bear in mind that rental rates can quickly use up personal funds. They should utilize all possible avenues of searching for housing including newspapers, rental agencies, personal or professional contacts in the community, and other sources.

Inquiries concerning housing should be directed to: Student Housing Office, Johnson Hall-A, 2555 Dole Street, Honolulu, Hawaii 96822.

On Campus

Residence halls for University students administered by the housing office include:

Frear Hall and Hale Kahawai (for undergraduate women) — $426 room and board per semester.

Johnson Hall and Hale Laulima (coed halls for undergraduates) — $426 room and board per semester.

Hale Aloha (coed hall for undergraduates and graduates) — $481 room and board per semester.

Gateway House (coed hall for graduates and upper division undergraduates) — $456 room and board per semester.

Board includes 10 meals per week (Monday-Friday, breakfast and dinner).

All halls have double rooms except for fourteen single rooms in Hale Laulima and one single room in Johnson Hall at $481 room and board per semester, and twenty single rooms in Hale Aloha at $565 room and board per semester.

Off Campus

The off-campus housing office offers limited space in leased hotels and apartments in the Waikiki area to eligible full-time students. Assignments are made on a first-come first-served basis. Inquiries should be directed to: Off-Campus Housing Office, Bachman Annex 5, University of Hawaii, Honolulu, Hawaii 96822.

This office also offers a free central listing service and maintains listings of rooms in private homes, apartments, houses, sharing accommodations, and room-and-board situations; however, these listings are very limited and quickly exhausted. Contacts with off-campus landlords must be handled directly by the students; because of the rapid turnover the names of landlords cannot be sent through the mail. The rush for housing usually starts about three weeks prior to the beginning of classes. (Students arriving in Honolulu are strongly advised to plan for temporary lodging for a period of one to two weeks while they look for suitable housing. This means bringing sufficient funds and reserving such temporary lodging or making whatever arrangements necessary to provide a base while looking around.) There is no place on campus to which luggage or mail may be forwarded ahead of arrival. Reference maps and telephone service are available in the office. Office hours are Monday-Friday, 7:45 a.m.-4:30 p.m. The general housing picture is one of extreme shortage; this means expense and difficulty in the locating of suitable housing.

The off-campus housing office is located in Bachman Annex 5 behind Bachman Hall.

*These estimates are based on 1972-73 tuition. For 1973-74 school year tuition may be subject to an increase.
STUDENT REGULATIONS

Student Conduct

The University of Hawaii has a Code of Community Standards which defines expected conduct for members of the University community and which specifies those acts subject to University sanctions. The disciplinary authority is exercised through the Student Conduct Committee composed of four students, four faculty members and a non-voting chairman. The committee has developed procedures for hearing allegations of misconduct.

Complete copies of the community standards code and student conduct committee procedures are published in the Handbook and are also available at the office of the dean of students.

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, rental contracts, etc.) to the satisfaction of the treasury office may be denied graduation, transcripts, and further registration.

Alcoholic Beverages. The policies governing the possession, consumption, serving and sale of alcoholic beverages on the University campus are currently under review. The new policies will be published in the Manoa Campus Bulletin and the Student Handbook.

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 the office of University Relations in Bachman Hall, at the Traffic Desk in Auxiliary Services building, and also during registration periods at the lanai area of the swimming pool. Ignorance of these rules and regulations will not excuse a student from the payment of fines for violations.

Parking permits are sold in the lanai of the swimming pool during registration periods, and at the Traffic Desk in the Auxiliary Services building throughout the year.

RIGHTS AND FREEDOMS OF FOREIGN STUDENTS

The University of Hawaii, like all state universities, embraces those aspects of academic freedom which guarantee the freedom to teach and the freedom to learn. Free inquiry and free expression for both students and faculty are indispensable and inseparable. Students, whether from the United States or from foreign countries, as members of the academic community are encouraged to develop a capacity for critical judgment and to engage in sustained and independent search for truth.

Students from foreign countries, as full participants in the educational process at the University of Hawaii, have the right to pursue formal knowledge, verbal or written, in whatever directions and with whatever legitimately appropriate associations as are necessary, without fear of reprisal.

For its part, the University of Hawaii guarantees all students the freedom of silence. No student is required to engage in research on any topic or to make statements of any kind, unless it is his wish to do so.

The University of Hawaii would be most concerned if any government placed its own nationals in jeopardy for engaging in normal academic studies on its campus; it urges other governments to accept the concepts of academic freedom prevalent here if they intend for their nationals to study at this institution.

FINANCIAL AIDS

The fundamental purpose of the Financial Aids Program is to provide services to students partially or wholly self-sustaining or otherwise in need of assistance to meet the costs of their educational programs. The operating philosophy is that parents/students have the primary responsibility to provide for the expenses of education and that financial aid is designed to fill the gap between parents’/students’ ability to pay and the actual educational costs.

Fiscal services are provided through the award of scholarships, grants, loans and student employment to the degree that is consistent with a student’s needs and the availability of resources. Counseling services are also provided on an individual and group basis as an extension of the educational experience.

The University subscribes to the College Scholarship Services (CSS) and utilizes the CSS form as a composite financial aid application for most of the student assistance programs it administers. The CSS forms are available at high schools, community colleges or the financial aids office (1627-A Bachman Place, Honolulu, Hawaii 96822). The deadline for submission of the CSS forms to the appropriate CSS office (as indicated on the form itself) is March 1 of each year. Applications will be accepted after this date but there is always the danger on-time applicants will exhaust available funds.

Graduate students seeking fellowships or teaching assistantships should write to the Dean of the Graduate Division, 2540 Maile Way, Honolulu, Hawaii 96822.

Scholarships and Grants

State Government

State Scholarships: A number of tuition scholarships are awarded annually to full-time undergraduates who have resided in Hawaii five years prior to application. Because the awards are renewable, provided the recipient maintains a satisfactory record, the number available varies from year to year.

Federal Government Scholarships and Grants

Supplemental Educational Opportunity Grants: Provides assistance to full-time undergraduate students with exceptional financial need. Grants must be matched with a scholarship, a loan and/or campus employment.
**Law Enforcement Grants:** Provides limited assistance to persons employed full-time in a public law enforcement agency and pursuing a course which will improve them professionally.

**Nursing Scholarships:** Provides assistance to all nursing students, full or part-time, with financial need.

**Health Profession Scholarships:** Provides assistance to full-time medical students with exceptional financial need.

### Endowed Scholarships Administered by the Financial Aids Office

- Riley H. Allen Memorial Fund
- Chinese Community Club Scholarship
- Dai Ho Chun Scholarship
- Harry H. Collins Memorial Scholarship
- Leora Parmelee Dean Scholarship
  - (sponsored by Women’s Campus Club)
- Beau Gard Dixon Memorial Scholarship
- John Fee Embree Memorial Scholarship
- Fushiminomiya Memorial Scholarship
- Charles R. Hemenway Scholarship
- Honolulu Civic Association Scholarship
- Samuel Wilder King Memorial Scholarship
- Korean University Club Scholarship
- Robinson A. McWayne Scholarship
- Emma K. Mossman Scholarship
- N. Obermer Chamber Music Scholarship
- Joseph F. Smith Memorial Scholarship
- Stephen Spaulding Scholarship
- University of Hawaii Scholarship
- J. Watumull Scholarship
- Kenji Yamaguma Memorial Scholarship

### Other Scholarships (Privately-Sponsored) Administered by the Financial Aids Office

**Scholarships Based on Specific Majors:**

For **Engineering**: American Society of Civil Engineers (Hawaii Section) Scholarship; Won Kiu Ahn Engineering Scholarship; Chi Epsilon Alumni Scholarship; Hawaiian Cement Corporation Scholarship; T. Y. Lin Scholarship; Edward K. S. Park Memorial Scholarship.

For **Business Administration**: Hawaii CPA Wives Club Scholarship (for accounting); Kazuo & Akiyo Totoki Scholarship.

For **Art**: Joseph Goldinger Memorial Scholarship; James G. Kelley Scholarship (for architecture also).

For **Travel Industry Management**: American Hotel & Motel Association Scholarship; William A. Patterson-United Airlines Scholarship (for juniors and seniors); Sunset-PATA Scholarship; Western International Hotels Hard Corps Scholarship; Lorraine Yomes Memorial Scholarship.

For **Social Sciences**: John Fee Embree Scholarship; Kappa Iota Jack Karby Scholarship.

For **Miscellaneous**: Judd-Larson Scholarship, Watumull Scholarship (for medicine); Molyneux-Halford Scholarship (for social work, nursing, public health, or medical technology, speech pathology & audiology, dental hygiene).

Music Department Scholarship; Honolulu Chorale Society Scholarship (for music); Helen Lee Ahn Scholarship for Asian Studies; Department of Drama Dance Scholarship; Kuuipo O Ka Aina (for agriculture); Shao Chang Lee Scholarship (for Asian studies).

**Other Scholarships:** Harold E. Hicks Memorial Scholarship Fund; International Association of Machinists Union 1245; Brian Wallace Kong Memorial Scholarship; Palolo Lions Club; Pilot Club of Honolulu Scholarship; Superior Tea & Coffee Company Scholarship; Universal Scholarship; Antone Vidinha Scholarship.

### Scholarships Administered by Private Organizations

Questions regarding the following independent scholarships should be directed to the individual sponsors of these awards: Aiea High School PTA; Aiea Lions Club; Ala Moana Lions Club; Associated Chinese University Women’s Club; Betty Crocker; Hope Bettiylon-National Association of Home Builders; Brother David Paaluhi; Central Maui Hawaiian Civic Club; Chinese Women’s Club; “Chu” Baldwin Kahanamoku Foundation; Ewa Beach Lions; Fashion Group, Inc., Honolulu (fashion design, textiles & merchandising); Filipino Scholarship Foundation; First Trust Company of Hilo; Fort Shafter NCO Wives’ Club; Fort Shafter Women’s Club; Fukunaga Scholarship; General Henry Arnold Education Fund, U. S. Air Force Aid Society; Harold B. Turney-Dorothy K. Gillett Music Fund; Hawaii Society of Medical Technologists; Hawaii Veterans Memorial Fund; Hawaiian Airlines; Hawaiian Civic Club; Honolulu Community Chest; Honolulu Japanese Junior Chamber of Commerce (Nursing); Hui O’Wahine; IBEW, Unit I, Local Union 1186.

Independent Telephone Pioneer Association; Kailua High School; Kauai Trust; Kalua Lions Club; Kamehameha School; Leeward Oahu Lions Club; Leilehua F.T.A.; Leonard’s Bakery; March of Dimes Health Careers; McKinley High School National Honor Society; Miles E. Cary Memorial; Pacific Fellowship (sponsored by the American Association of University Women); Pali Lions; Rama...
Loans

Short-Term Student Loan Program: A no-interest program financed by donations from individuals and community groups/organizations and designed to meet small scale emergencies. On-the-spot applications are accepted at the financial aids office. Loans are normally expected to be repaid within 45 days.

Federal Loan Programs: Included are the National Direct Student Loan, Nursing Student Loan (Professional and Technical), Medical Student and Law Enforcement Loan programs. These loan funds are available to qualified students and repayments (interest or principal) do not begin until nine to twelve months after their studies are terminated. In some instances there are loan forgiveness features.

In addition to the above, students may also borrow through the Federal Guaranteed Student Loan Program. The application for this type of loan must be processed through the designated agency in the state of the student's legal residence. Students who are residents of Hawaii process their applications through their parents' bank or credit union.

State Higher Education Loan Program: Available to full-time students who are residents of Hawaii. Payment of interest and principal does not begin until full-time student status is terminated.

Student Employment

Many departments of the University employ students in a variety of jobs ranging from the unskilled to the semi-professional levels. Compensation is based upon job requirements and student qualifications.

The University also participates in the Federal College Work-Study Program. Under its provisions additional job opportunities are made available (both on campus and in the community) for qualified student employees.

In addition to the above, the financial aids office maintains a continuous liaison with the business community to assure a flow of jobs for students.

Despite these sources there are always more students seeking employment than there are jobs available. Priority for placement is accorded on the basis of financial need. In-coming students expecting to secure employment are advised to have on hand sufficient funds to defray expenses pending a job placement.

G.I. Bill Educational Assistance Program

Veterans, orphans and widows of veterans who are registering for the first time under any of the various Federal Veterans' Bills, must present a proper Certificate of Eligibility and Entitlement or Certificate for Education and Training to the financial aids office after completing registration.

Inquiries concerning attendance at the University of Hawaii under the G.I. Bill should be directed to the Honolulu V. A. Regional Office, P. O. Box 3198, Honolulu, Hawaii 96801.

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 (psychology); Chi Epsilon (civil engineering); Eta Kappa Nu Association (electrical engineering); Pi Tau Sigma (mechanical engineering); Omicron Delta Kappa (scholarship and leadership); Phi Eta Sigma (freshmen men); Mortar Board Hui Pookela chapter (senior women); Alpha Lambda Delta (freshmen women); Pi Lambda Theta Beta Zeta chapter (women in education); Delta Phi Alpha (German); Pi Delta Phi (French); Beta Phi Mu (library studies); Beta Gamma Sigma (business administration); Sigma Phi Alpha (dental hygiene).

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.

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 for outstanding performance in speech arts. Academic record considered.

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 Co. Award, for outstanding achievement in chemistry.

O.C. Magistad Award of the Hawaii 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 Pi Sigma Scholarship Award, presented annually to outstanding students in the field.

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 students 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.

Theater 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.

**Agriculture**

Danforth Summer Fellowship Award, given by the Danforth Foundation and Ralston Purina Company of St. Louis, to an outstanding junior in agriculture.

Alonzo Gartley scholarships, awarded to undergraduate agriculture students.

Ralston Purina Company scholarship, awarded to an outstanding student in agriculture.

Zera C. Foster Memorial Award, to an outstanding student in the field of soil science.

**Architecture**

Fishbourne Award, for basic design (Arch 276), monetary award and citations.

Home Builders’ Award, for first-level design (Arch 331), citations and prizes.

Dickey Award, second-level design (Arch 332), monetary award and citations.

Furer Award, third-level design (Arch 333), monetary award and citations.

Women’s Architectural League, community design internship (Arch 488), monetary award and citation for team or individual.

Price Award, for fourth-year design (Arch 431-432), monetary awards and citations for projects designed for concrete or concrete products.

Crossroads Press Award, for fifth-year thesis (Arch 800), monetary award and citation.

Alpha Rho Chi Medal, annual award for outstanding service and promise in the field of architecture.

**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.

**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.

**Human Resources Development**

Carey D. Miller Award, annual cash award to a senior outstanding in scholarship and leadership.

Hawaii Home Economics Association Award, to an outstanding senior in UH Chapter of the American Home Economics Association.

Hawaii Dietetics Association Award, annual cash award to an outstanding senior graduating in Dietetics.

Hawaiian Fashion Guild Award, to an outstanding senior in Fashion Design.

Human Resources Development Faculty Awards, to the junior and senior in each dept. with the highest grade-point averages.

Human Resources Development Faculty Awards, to the junior and senior in each dept. with the highest grade-point averages.

Danforth Summer Leadership Training Scholarship, to an outstanding freshman.

Certificates of Merit, for services to a department.

**Military Science and Aerospace Studies**

Cadet of the Year 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.

Society of American Military Engineers, a cash award to distinguished junior and senior engineering cadets in both Army and Air Force ROTC.

Army and Air Force ROTC scholarships to deserving applicants which cover tuition, fees, laboratory and graduation expenses.
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.

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

Tuition
Residents ........................................... $ 85.00
Nonresidents ........................................ 340.00
General fee (nonrefundable) ......................... 12.50
*Advance partial tuition payment (applied to tuition at registration)
All residents and continuing students .......... 27.00
New nonresidents only .................. 90.00
Course fees for applied music and institutes
(see listings under appropriate colleges)
Activities fee
All graduate students .................. 4.50
All undergraduate students .................. 6.70
Campus Center fee ......................... 7.50

Part-time students (less than 12 credit hours)

Tuition
Residents (maximum of $85.00)
......... per credit hour 9.00
Nonresidents (maximum of $340.00)
......... per credit hour 30.00
General fee (nonrefundable) ......................... 12.50
Activities fee (maximum of $4.50)
......... per credit hour .50
Campus Center fee
Students with 9 or more credit hours .......... 7.50
Students with 8 or less credit hours ........... 4.50

*All continuing and returning students are required to make an advance partial tuition payment of $27.00. Resident new students are required to make an advance partial tuition payment of $27.00; non-resident new students, $90.00. This advance partial tuition payment is applied at registration time toward tuition for that semester. The payment is nonrefundable and nontransferable if the student does not register, except when the student is denied further registration by the University.
The tuition and fee schedule set forth here is subject to change.

Summer Session Fees

Tuition (courses audited or taken for credit)

- Residents ........................................ per credit hour $20.00
- Nonresidents .................................... per credit hour $30.00

Student activities fee, Campus Center fee, course fees for applied music, institutes and other special programs as noted in Summer Session Catalog.

College of Continuing Education Fees

Students registered in courses offered by the College of Continuing Education pay fees as indicated in the bulletins of that division.

Other Registration Fees

- Late registration fee which is added to the student fees when a student registers or pays the fees after the announced days of registration ...................... $5.00
- Change of program after the initial registration .... 2.00
  (does not apply to complete withdrawals from the University)

Graduation Fees and Rentals

Graduation fee (payable at time of application)

- Bachelor's degree (each) ............................... 5.00
- Advanced degree (each) ............................... 5.00
- Professional certificate ................................ 2.50
- Associate of Science 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*

Special Fees

- Evaluation fee
  (all out-of-state undergraduate and unclassified applicants)† ......................... 10.00
- Transcript of record
  (no charge for first copy) ............................. 1.00

Credit by examination (per course) ...................... 5.00
  (payable at time of application)
- Special examination .................................... 10.00
  (in regularly constituted courses at other than the specified times, except for make-up examinations)
- Replacement of laboratory equipment
  (items broken or lost) ................................. Cost of Item

Check tendered to University or any department therein and returned for any cause:
- Drawn on bank within State of Hawaii ............. 5.00
- Drawn on bank outside State of Hawaii .......... 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.

Refunds

In the event of complete withdrawal from the University or change to part-time status before the fifth week of instruction, certain fees may be refunded as indicated below:

1. Tuition and special course fees
   a. 100% refund (less $12.50 general fee) for complete withdrawal only if made on or before the following dates:
      - August 31, 1973, for the fall semester
      - January 18, 1974, for the spring semester.
   b. 80% refund if complete withdrawal or change to part-time status is made within the first two weeks of instruction.
   c. 40% refund if complete withdrawal or change to part-time status is made during the third and fourth weeks of instruction.

2. Student activities fee and Campus Center fee
   a. 100% refund if complete withdrawal is made within two weeks after the regular registration period.
   b. No refund is made after the second week of registration.

3. If complete withdrawal or change to part-time status is precipitated by an action on the part of the University, refunds in addition to the above may be arranged.

4. Summer Session
   See Summer Session Catalog.

Application for refund should be made at the treasury office, Bachman Hall 110, after following the procedures on pp. 29-30, "Withdrawals and other Changes."
Residence Regulations

Students who do not qualify as bona fide residents of the state of Hawaii according to the University regulations in effect at the time they register, must pay nonresident fees.

An official determination of a student's residence status will be made at the time he applies for admission. Once classified as a nonresident, a student continues to be so classified throughout his term at the University of Hawaii until he can present satisfactory evidence to the residency officer that proves otherwise. Some of the more pertinent residence regulations are given below. For further information or interpretation, contact the residency officer in the office of student affairs.

Statutory Exemptions

The following categories of nonresidents are exempt under statute from payment of tuition differential:

1. Persons who are residents of a state or foreign country which permits Hawaii residents to pay the same tuition fees at its public institutions of higher learning as are paid by its own residents.
2. United States military personnel and their authorized dependents during the period such personnel are stationed in Hawaii on active duty.
3. Persons domiciled in a district, commonwealth, territory, or insular jurisdiction, state, or nation which provides no public institution of higher learning.
4. Employees of the University and their spouses and legal dependents.

"Residents"—In General

1. The basic rule is that adult and minor students are resident students if the adult student, or in the case of minor students, their parents or guardians, have been bona fide residents of this state at least twelve consecutive months next preceding the first day of instruction at the University.
2. Residence in Hawaii and residence in another place cannot be held simultaneously.
3. Presence in Hawaii primarily to attend an institution of higher learning does not in itself create resident status.
4. The residence of unmarried students who are minors follows that of the parents or of the legal guardians. A married minor may assume the residency of the spouse.
5. The residence of a wife may follow that of her husband.
6. Resident status, once acquired, will be lost by future voluntary actions of the resident inconsistent with such status. However, Hawaii residence will not be lost solely because of absence from the state while employed in the service of the United States, while engaged in navigation, or while attending an institution of learning.
STUDENT CLASSIFICATION

Persons attending classes at the University of Hawaii at Manoa may enroll in courses for academic credit or as auditors. Auditors are permitted to attend classes but receive no credit for the course. Students enrolled for credit may be designated as classified or unclassified, full-time or part-time.

Classified Students

A classified undergraduate student is one who is following a prescribed program of study leading to a bachelor's degree. Undergraduates are divided as follows: freshmen, 0-24 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.

A classified graduate student is one who has been accepted by the University's Graduate Division in one of three categories: regular, probational, or special (see Graduate Catalog). The student works toward an advanced degree or is in a special nondegree training or certificate program.

Unclassified Students

Students who are not seeking a degree or completion of a special Graduate Division program or undergraduate degree or certificate program are termed unclassified. (Unclassified students are ineligible for student deferments by the Selective Service System.)

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. Ordinarily a full-time undergraduate student carries a minimum of 12 credits. Graduate students are considered full-time or part-time according to Graduate Division regulations (see Graduate Catalog).

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 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. No records are kept by the admissions and records office for auditors.*

*Auditors must submit an application to the admissions office for each semester in which he enrolls.
GENERAL INFORMATION

The admission requirements of the University of Hawaii at Manoa are very similar to those of comparable state institutions of higher learning. In general the University admits those students who have demonstrated their ability to benefit from, and contribute to, one of its educational programs. General requirements for admission are listed on the following pages. There are severe limitations on the number of nonresident students that can be enrolled.

Applications. Students may obtain applications and/or information by contacting their high school counselor (in the state of Hawaii) or by writing to:

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

Along with the application students will receive instructions for completing and submitting the application. The instructions are listed in the booklet How to Enroll in the University of Hawaii System. All non-United States citizens should request the foreign student supplementary information form and follow the additional instructions for foreign students.

Deadlines. Applications will be processed for the fall semester from December 1 to May 1, and for the spring semester from June 1 to November 1. Applications should include official transcripts sent directly from the institution involved and all other necessary credentials; only complete applications will be considered. Applications, even those received before the closing deadline, will not be acted upon once our enrollment is filled for the semester for which a student applies.

Application Fee. A nonrefundable $10.00 application fee is required of nonresident applicants. Applications will be returned if this fee is not submitted. The application and the fee are valid only for the one semester specified on the application.

This $10.00 fee in certified check or money order is to be made payable to the University of Hawaii. Do not send currency. Those applying from foreign countries should send an international money order. These payments are to be mailed with the application to the University of Hawaii at Manoa, Office of Admissions and Records.

Student Numbers. The University uses social security numbers as student identification numbers. A United States citizen must indicate his social security number on his application to the Manoa Campus. Students who do not have a social security number or have lost their social security card should contact their social security office prior to filing an application. Those students who have had a name change should inform their social security office. A foreign student need not indicate a social security number on his application. Applications for social security numbers may be obtained at a local social security office; processing takes approximately six weeks.

Zip Codes. Students should acquaint themselves with the zip codes of their permanent and local addresses, prior to applying, so that the codes may be entered on their applications.

ADMISSION REQUIREMENTS

Admission of Residents as Freshmen

Residents of the state of Hawaii applying for admission as freshmen must submit an application, official scores on the Scholastic Aptitude Test of the College Entrance Examination Board (CEEB), high school transcripts and recommendations from school officials as directed in the instruction booklet which accompanies the application form. A high rating in one factor will not ensure admission, nor will poor performance in another area exclude an applicant if other evidence indicates that he may be successful in university work. Ordinarily, a student should have better than average grades in high school.

Scholastic Aptitude Test. Candidates for fall admission should take the Scholastic Aptitude Test (SAT) before or no later than December of their 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

High School Record. Applicants are expected to have received grades high enough to place them in the upper two-fifths of their graduating class and to be recommended by their principal or his representative.

A graduate of a four-year high school should complete 15 units of high school work of which at least 10 are college preparatory. A graduate of a three-year senior high school should complete 12 units of which at least 8 are college pre-
Minimum Unit Requirements for Admission

<table>
<thead>
<tr>
<th>From a 4-Year High School</th>
<th>Subject</th>
<th>From a 3-Year High School</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ENGLISH</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ALGEBRA</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>(Not required if the student has had elem. algebra in the ninth grade.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>ENGLISH—in addition to 3-unit minimum requirement.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SCIENCES—physical, biological, and social</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MATHEMATICS—in addition to 1-unit minimum requirement in algebra</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FOREIGN LANGUAGE</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Any other subjects (except physical education and ROTC) credited by the high school towards graduation provided that these subjects have been pursued in accordance with regular classroom procedure involving a reasonable amount of preparation in addition to time spent in class. Students must have no less than ½ nor more than 2 units in any one subject.</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>................................................ TOTAL ...................................... 12</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

paratory. These college preparatory subjects must include at least 3 units in English and 1 unit in algebra.* Other such subjects are: physical, biological and social sciences; mathematics beyond first-year algebra; and foreign language. All other courses for which the high school grants credit, except physical education and military science, may be offered to satisfy the remaining unit requirements. A listing of courses and grades from ninth grade must be included in a student’s record even if he attends a three-year high school.

The word unit as employed here signifies the satisfactory completion of a full school year’s course of study, or the equivalent for laboratory and shop exercises. For an acceptable distribution of units required of entering students, see the accompanying table.

Admission of Nonresidents as Freshmen

Freshmen nonresident applicants to the University of Hawaii must meet all the requirements noted for Hawaii applicants (see above). Admission standards for out-of-state students are generally higher than those required for state residents. Candidates should await notice of acceptance before coming to Hawaii.

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

Transfer students are those who are enrolled or were previously enrolled at a college or university other than the Manoa Campus. Students who have earned at least 24 semester hours of work in courses comparable to Manoa Campus offerings at an accredited American college or university must submit an application and arrange to have each previous institution attended send official transcript(s) directly to the office of admissions and records. Each transcript must include a listing of courses taken and the grade received in each. Unofficial transcripts, including student copies of transcripts or grade reports will not be accepted. The transcripts, once submitted, are not available for distribution except to other campuses in the University of Hawaii system.

Candidates who have completed less than 24 acceptable academic credits or who have enrolled in an unaccredited institution must also submit high school transcripts and scores on the Scholastic Aptitude Test.

The transfer student is expected to present a satisfactory academic record in courses comparable to Manoa offerings. (The nonresident student must present a better than average record.)

*Students entering curricula in engineering, mathematics, and biological and physical sciences must meet special math requirements beyond elementary algebra (see page 28).
If a student is enrolled at another college or university when he submits his application, a final transcript must also be submitted to the office of admissions and records at the end of the current term. Until this transcript is received, any action on the application is provisional. Failure to submit the transcript or to satisfactorily complete the semester’s work may result in the denial of admission.

Transfer credits are accepted only in subjects substantially equivalent to University of Hawaii at Manoa offerings, and grades earned in these courses must be C or better to be recorded. Credit/No credit and Pass/Fail credits may also be accepted if the standard for these credits is the same as at the Manoa Campus (see page 30). However, all transfer credits allowed may not necessarily satisfy curricular requirements toward a degree; therefore, the student may find that it may take longer to complete degree requirements than anticipated. 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 for freshmen students. Upon the completion of a minimum of 30 semester hours with an average of C or better at the University of Hawaii at Manoa, credit may be given for the courses completed 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 Manoa Campus courses.

The University of Hawaii does not offer correspondence courses; however, up to one-fourth of the credit requirements for undergraduate degrees may be met by correspondence courses taken at accredited institutions of higher education.

Admission of Foreign Students

Foreign students who wish to apply for undergraduate admission should request the Information for Prospective Undergraduate Students from Other Countries brochure from the office of admissions and records. If, after reviewing the brochure, the student decides to apply to the University of Hawaii at Manoa, he must fill out the request for application form enclosed with the brochure. Qualified students will be sent an application, instruction booklet, and a supplementary sheet for foreign students.

In addition to the application, candidates must present evidence of having completed or received the equivalent of a U.S. high school diploma. Official transcripts of all secondary and post-secondary work as well as certified photo copies of the results of any qualifying examinations (e.g., General Certificate of Education) must be submitted. Certified English translations must be attached to documents and transcripts written in a foreign language. Once submitted, these records are not available for distribution.

Candidates must also submit official results of the Scholastic Aptitude Test (SAT) and the Test of English as a Foreign Language (TOEFL). The SAT and TOEFL are normally required of all foreign applicants, including students who have either been admitted to or matriculated at other universities. Applications for the SAT may be obtained by writing to:

- College Entrance Examination Board
  Educational Testing Service
  Box 1025
  Berkeley, California 94701
  or Box 592
  Princeton, New Jersey 08540

(Students who have earned at least 24 semester hours of work comparable to Manoa Campus offerings—including English Language Institute and/or English as a Second Language courses—at an accredited American college or university are exempt from submitting the SAT results.)

Applications for the TOEFL may be obtained by writing to:

- Educational Testing Service
  Box 899
  Princeton, New Jersey, U.S.A. 08540

Candidates must attain a minimum score of 500 on the TOEFL examination.

Foreign applicants who are exempt from taking the TOEFL examination are: (a) native speakers of English from Australia, Britain, Canada or New Zealand; (b) students who have received a bachelor’s degree from an accredited university/college in the United States, Australia, Britain, Canada or New Zealand; (c) students who have completed four years of high school and/or university education in the countries aforementioned.

All foreign students on nonimmigrant visas are required to show proof of adequate health insurance before completing the registration process. Information concerning health insurance will be sent to students who are accepted for admission.

Before coming to Hawaii, students should have received official notification of acceptance. Upon arrival, foreign students are subject to English testing and placement in English Language Institute courses. See page 38 for details.

Admission of Special Students

Mature persons may be allowed to register as special students when their backgrounds qualify them for credit work. Approval from the director of admissions is needed before a student may register and enrollment is only for one semester.

Such students, however, will not be admitted to a degree-granting college or allowed to become degree candidates 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 present examination results in lieu of a high school record. The examination should cover college preparatory subjects and should qualify the
applicant for a high school diploma. Successful performance on such an examination and the Scholastic Aptitude Test are required of these applicants. Such individuals must meet all special requirements for admission to such curricula as engineering, nursing, etc.

Admission of Returnees in Good Standing

A student who left the University of Hawaii at Manoa in good standing or on probation and who has not attended another institution must submit a regular University application (available at the admissions office) according to the Manoa Campus deadlines outlined earlier. A request to re-enroll may be denied due to enrollment limitations. A student who has attended another institution subsequent to his attendance at the University of Hawaii at Manoa applies as a transfer student.

Admission of Professional Diploma Students

Candidates for admission to the Professional Diploma (PD) program should request the application form from the admissions and records office.

Official transcripts from all institutions attended must be sent to the admissions and records office. Each transcript must include a listing of courses taken and the grades received in each. Once submitted, these transcripts are not available for distribution. A supplementary transcript of courses in progress must also be sent to the admissions and records office at the end of the semester.

Individuals residing on Oahu must arrange for a personal interview with the staff members of the division of student services, College of Education. Individuals who do not reside on Oahu must submit a recommendation form (available at the admissions and records office) directly to the College of Education in lieu of an interview.

Admission of Unclassified Students

An individual who is not interested in enrolling in a degree program but is interested in taking University courses for professional or personal reasons may apply for admission as an unclassified student.

Admission may be allowed if the individual can either meet the same standards for admission as a regular degree-seeking undergraduate or can submit official verification of a baccalaureate or advanced degree earned at an accredited college or university.

Priority for admission is generally given to classified students; therefore, a request for enrollment as an unclassified student may be denied due to enrollment restrictions.

If an individual is only interested in taking a course offered by the College of Continuing Education and Community Service (CCECS) he should inquire at the student services office of CCECS.
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 trigonometry. It is recommended that they also take mechanical drawing, physics and solid geometry. Engineering students who have not completed trigonometry or mechanical drawing in high school should endeavor to take these subjects during the summer session preceding their freshman year.

Allied Health

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 one year of plane geometry or their equivalents. Trigonometry is strongly recommended.

Early Admission

Qualified high school students may enroll in University courses while completing their high school graduation requirements. Students desiring to take advantage of this program should submit a regular application, arrange to have his high school transcripts sent to the office of admissions and records, take the Scholastic Aptitude Test of the College Entrance Examination Board and submit a supporting letter of recommendation from the high school counselor or principal. The deadlines for regular University admission also apply to the early admission program. Students in the program are invited to become affiliate members of the Selected Studies Program.

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 pursue advanced degree work at the University of Hawaii should obtain application forms from departmental offices or from:

Graduate Division Admissions Office
Spalding 352-A
University of Hawaii
2540 Maile Way
Honolulu, Hawaii 96822

Applicants should also write to the appropriate department for a departmental brochure.

The application form for admission to the Graduate Division, the $10.00 application fee, two copies of official transcripts, test scores (if required in the particular field), and other supporting documents must be postmarked no later than March 1 for the fall semester, September 1 for the spring semester.

Consult the Graduate Catalog and departmental brochures for information regarding advanced degree programs and requirements. The catalog may be obtained by writing to: University of Hawaii Bookstore, 1760 Donagho Road, Honolulu, Hawaii 96822. The price of the catalog, including postage and handling, is: $1.25 surface mail and $2.00 airmail to the U.S. and Canada; $2.50 to Asia, Africa, Europe and South America; $2.00 to Central America and the Caribbean.
REGISTRATION FOR COURSES; WITHDRAWALS AND OTHER CHANGES

Regular Registration

Registration for courses is usually held one week prior to the opening of the semester. The dates for registration are given in the Calendar (p. 2). A Schedule of Courses stating the time and place of meetings for each course is issued by the admissions and records office prior to registration. Each course is described in this catalog under the various college sections. Instructions for registering are included in the schedule of courses.

To help the University plan for all new and continuing students, a partial advance tuition payment will be collected. For continuing students, the advance tuition payment is $27; for new students, the payment is $27 for residents and $90 for nonresidents. This nonrefundable and nontransferable payment will be applied to the full tuition at registration.

In order to pick up a registration packet, each student must present a receipt for his partial advance tuition payment plus a medical clearance card. State law requires that certain health conditions be met by all students. Health forms and instructions are mailed to all new and returning students with their acceptance letters. Upon receipt of the health forms, the Student Health Service will prepare a medical clearance card for each student. Continuing students are also required to present a medical clearance card; they may obtain medical forms at the Student Health Service.

Any student who arrives on campus without a medical clearance card must report to the Student Health Service before obtaining his registration packet.

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

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

Auditors and Unclassified Students. Auditors and unclassified students register after the period assigned for the registration of classified undergraduates and graduate students.

Late Registration

A student may register for credit up to and including the day designated as the last day for registration for credit. See Calendar, p. 2, "Last day to register for credit." Similar restrictions apply to the summer session. There is a fee for late registration.

Registration to audit courses is permitted at any time, but auditors may not change to credit status after the above late registration period.

Other Provisions

Maximum Registration. Undergraduate students who request enrollment in more than 19 credit hours of work in any semester must obtain special approval of the dean of his college or his designate. Students may not register for courses in the College of Continuing Education, for credit or audit, in excess of the maximum registration allowed by the college in which they are enrolled. Graduate students should consult the Graduate Catalog.

Full-Time Status. Students must carry a minimum of 12 credits to be considered full-time. Graduate students should consult the Graduate Catalog.

Class Attendance. 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.

Variable Credit Courses. The number of credits obtainable in most courses is stated in this catalog and in the schedule of courses. However, certain courses, designated by "v" or "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 prior to 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.

Prerequisites. Most advanced courses stipulate certain prerequisites (abbreviated "Pre" in the course description) as minimum acceptable preparation for the course. These prerequisites are noted in the individual course descriptions or at the beginning of a department's listing of courses. It is the student's responsibility to ascertain that he has in fact met the prerequisites or their equivalents. A student who believes he has had comparable training should consult the instructor before registration.

Course Changes (Not Complete Withdrawal)

To Add a Course. Courses may be added during the first two weeks following the regular registration period. A form may be obtained from the student services office of the student's college. There is a $2.00 charge for each form processed.

To Drop a Course. Courses may be dropped without grade penalty up to the end of the third week of instruction (see Calendar) unless a later date is announced by the instructor. Withdrawal during the first three weeks is not indicated on the student's record. If a student withdraws after the first three weeks of instruction, a grade of W will be entered on the student's record if he has the approval of the dean of his college and his instructor. A student may obtain a
"drop" form from the student services office of his college. There is a $2.00 charge for each form processed.

When an undergraduate student ceases to attend class without officially withdrawing prior to the last four weeks of class, the instructor may award any one of the following final course grades: A, B, C, D, F, CR (Credit), NC (No Credit), or, if applicable, W or I. An instructor will award an I or W on the basis of the feasibility of the student's making up the work within the prescribed time limit. If an I (Incomplete) is awarded the instructor must also award an alternate grade to be recorded on the student's record if he does not undertake the work necessary to remove the I. This alternate grade may be any one of the following: A, B, C, D, F, CR, NC, or W.

Graduate students should consult the Graduate Catalog.

Complete Withdrawal from the University

If a student completely withdraws from the University prior to the end of the third week of instruction, no record of the courses for which he registered is maintained. After that period he may receive a mark of W for each of his courses if he has the approval of the dean of the college in which he is registered.

To withdraw from the University, obtain an application for complete withdrawal at the admissions and records office, Bachman 125. Signatures as indicated on the form must be obtained and the completed form turned in to the treasury office, Bachman 110.

Refunds for withdrawals are noted in this catalog under "Tuition and Fees—Refunds." Such refunds as stated are made by the treasury office upon presentation of the completed and signed withdrawal form.

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 left with the dean of the college the student wishes to enter. 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 one hour of classroom instruction. Laboratory or field work required in addition to the basic classroom instruction varies and such work may carry credit (usually two hours in laboratory or field work for 1 credit) or it may carry no additional credit. The normal division of time for classroom instruction and preparation is two hours in preparatory work for one hour in the classroom. Thus, a 3-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, CR (credit), NC (no credit), W(withdrawal), and I (incomplete). 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 an undergraduate 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 the failure was caused by conditions beyond the student's control and not by carelessness, and procrastination.

Each student receiving an I should contact his professor to determine the steps to be taken to remove the I. The deadline for removing an I received in the first semester is the Easter recess of the following semester; for removing an I received in the second semester or the summer session, the deadline is the Thanksgiving recess of the next semester (see Calendar for specific dates). When the instructor records a grade of I on the final grade card, he must also record the grade which will replace the I if the work is not made up by the deadline; that grade should be computed on the basis of what grades or other evidence the instructor does have, averaged together with F's for all the incomplete work (including the final examination, if it is not taken). If the work is completed prior to the deadline, the instructor will report a change of grade, taking the completed work into consideration.

Graduate students should consult the Graduate Catalog.

Credit-No Credit. The major purpose of the credit-no credit options is to encourage students to broaden their education by venturing into subject areas outside their fields of specialization without hazarding a relatively low grade. Undergrad-
uates may, with approval of their adviser, take any course on a credit-no-credit basis, provided the course is not required by the college in the student's "major requirement." The CR (credit) designation denotes D caliber work or better. 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 credit-no-credit basis. No more than 40 credit hours taken on a credit-no-credit basis, in addition to the required CR-NC courses, may be counted toward the degree. A grade of CR (credit) is not computed in the grade-point average; neither is a grade of NC (no credit). The credits for a course in which a CR is obtained are listed as advanced standing on a student's grade report.

A course in which CR is earned may not be retaken for a A, B, C, D, F grade nor may a course in which a student earns a grade on the A, B, C, D, F basis be retaken for a CR-NC grade.

Graduate students should consult the Graduate Catalog.

Grade points are given for all courses in which grades of A, B, C, D, or F 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.

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, I, NC or CR have been recorded are not included in the computation of ratios.

Grade Reports. Grade reports are sent to students at the end of each semester and the summer session.

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 published in the Schedule of Courses and also issued prior to the testing period by the office of admissions and records.

Foreign Language Placement Examinations. All students who have previously studied a foreign language and wish to continue studying that language at the University of Hawaii at Manoa 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 departments of European languages, East Asian languages, or Indo-Pacific languages.

Credit for Previous Foreign Language Study. Credit towards graduation for a foreign language studied outside the University may be given in one of the following ways: by transfer of advanced standing credits from another institution, by placement and proficiency validation test during registration, by credit by examination (see below), or through the Advanced Placement Program.

Students who have taken the placement test and who subsequently complete a 202 language course or higher, or who demonstrate ability at 202 or higher level on the proficiency validation test will be eligible to receive credits. The credits will be given for the course level the students have attained and also for the prerequisite(s) to that course in accordance with the regulations of the students' colleges.

A minimum of 4 credits towards graduation may also be obtained by attaining a score of 3 or better on the Advanced Placement Examination in French, German, Latin or Spanish. (The amount of credits in excess of 4 is determined by the results of the placement examination administered by the European languages department.) 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 courses in high school. Further information may be obtained in most high schools, or directly from the Educational Testing Service, Princeton, New Jersey.

To obtain credit by the above procedures, a student must make application at the College of Arts and Sciences student services office.

Credit by Examination. Students who wish to obtain credit by examination for basic courses in economics, calculus, general chemistry, psychology, sociology, and English literature should contact the Counseling and Testing Center. The student applies to the center, pays the fee (currently $15) and takes the corresponding general or subject examination under the College-Level Examination Program. A satisfactory score on these 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 to take them are somewhat more stringent. An enrolled student with a grade-point average of 2.4 or better who presents evidence to his college dean that he 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.) Graduate students may also obtain credit in this manner for certain undergraduate courses. A $5.00 fee is charged for each examination. (See Graduate Catalog.)

In each case the examination must be prepared under the auspices of the department concerned, 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.
ACADEMIC REGULATIONS

ACADEMIC PROBATION, SUSPENSION, DISMISSAL

A. Undergraduates

If a student fails to meet the minimum scholastic requirements of the University, he is put on probation, suspended or dismissed. For purposes of measuring this minimum requirement, the grade-point ratio (GPR) is used. The following guidelines are generally applied:

Probation. A student may be placed on academic probation at the end of any semester in which his cumulative GPR falls below 2.0. The probationary student continues work at the University, but he must achieve a GPR in each probationary semester of at least 2.0 to be allowed further registration.

Regulations governing academic probation will be applied at the end of each semester.

Suspension. A student who has been denied continuing registration for the first time is placed on academic suspension. A student will be suspended if, even though he is not on probation, he has failed, after taking 24 credits, to achieve a cumulative GPR of at least 1.7. A student will also be suspended if he is on academic probation at this University and has not maintained a GPR of at least 2.0 in the work of the probationary period.

Regulations governing academic suspension are applied at the end of each semester.

A suspended student is eligible to return to the University after he has remained out of the University for at least one semester (not including summer session). However, a student suspended at the end of the spring semester is permitted to attend the summer session immediately following his suspension. If he brings his cumulative GPR up to 2.0 at the end of the first summer term, a committee on academic standing has the option of setting aside the suspension period and allowing the student to enroll for the fall semester.

Dismissal. A student is dismissed when he has been previously suspended and has failed on readmittance to maintain a GPR of at least 2.0 in his initial semester, or when he is admitted on academic probation and fails to meet academic requirements during the probationary period. Such students will be readmitted only in unusual circumstances. Regulations governing academic dismissal are applied at the end of each semester.

Applications for Return from Suspension or Dismissal. Students applying for return from suspension should do so at the office of admissions and records for the 1973 fall semester from December 1 to May 1 and for the 1974 spring semester from June 1 to November 1 and not later than April 1 for the following summer session. The same deadlines apply for applications to return after dismissal except that these applications should be filed at the student services office of the student's college. Applications, even though received before the closing deadline, will not be processed once enrollment is filled for the semester for which a student applies.

Other Provisions. Ordinarily, failure in the first semester of a year course bars a student from registering for the second semester of that course. However, there are a number of exceptions to this, wholly at the discretion of the individual departments. A department may choose to withhold credit from a student registered illegally in such a course.

Upon finding that a student is suffering from a physical or mental condition detrimental to the student or the University, the dean of students will, on medical advice, recommend proper action to the appropriate college dean. The dean may then request that the student be withdrawn officially, without prejudice or academic penalty. Readmission is contingent upon review and recommendation by the college dean and the dean of students.

B. Graduate students should refer to the Graduate Catalog.
Degree Programs

PROGRAMS LEADING TO ADVANCED DEGREES

At the graduate level, the University of Hawaii at Manoa currently offers curricula leading to the Master's degree in 73 areas (including the arts, sciences, fine arts, business administration, education, agriculture, engineering, nursing, public health, library studies, and social work). Doctoral programs leading to the Ph.D. degree are presented in 34 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 Graduate Catalog.

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 69 academic fields, plus experimental programs which offer students an opportunity to study with interdisciplinary frameworks or to design their own interdisciplinary field of concentration instead of selecting a departmental major.

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 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 and participation in society 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 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.), 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 technical nursing; two-year certificate in dental hygiene.
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 interests. 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 and expressing his thoughts 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—described 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 six broad areas listed below. 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. A description of the equivalent "core" requirements for the Survival Plus Program is obtainable in the program office, 9 Maile Way.

Communications: Each student must show competence in expository writing appropriate for study at an institution of higher learning. The usual means of fulfilling this requirement is to pass any English course in the 100 series or (for foreign students) ESL 100. Any student who already has this competence may demonstrate it—and receive credit for the equivalent courses—by passing examinations offered by these departments.

Quantitative and Logical Reasoning: Ability to apply, understand or appreciate the uses of mathematics, or its philosophical base in logic may be demonstrated by passing any mathematics course at the university level, or a course in logic, or any basic course in statistics or computers, such as those listed among the options for Arts and Sciences on p. 46, or by passing examinations equivalent to such courses.
World Civilizations: Adequate comprehension of the broad sweep of cultural development may be demonstrated by passing History 151-152, World Civilization, or its counterpart in the Honors Program, 161-162. However, with the concurrence of their academic advisers, students with an adequate understanding of Western civilizations may complete the requirement by passing one or more courses in history of Asia, such as History 241-242 (same as Asian Studies 241-242). Conversely, students with a satisfactory comprehension of Eastern civilizations may fulfill the requirement by completing one or more courses in Western history, most appropriately in European history, since American history is in large part derivative of it, or European Languages 161-162.

Humanities: The educational objective sought here is to develop standards of value and beauty, to sharpen critical judgment by the study of literature and other creative arts, of philosophy and religion. Students may fulfill this requirement by passing 3 semester courses, distributed among 2 or more of the following 3 groups. The following list of courses is provided as a general guide. Substitutions may be made upon the approval of the dean of the college in which the student is registered.

I. English 251, 252, 253, 254, 255, 256; Drama 160; literature courses offered by the language departments (in original language or in translation).
II. Philosophy 100, 200, 201; Religion 150, 151.
III. (History, Theory of the Arts) Art 101, 270, 280; Asian Studies 241-2, 310; Drama 180, 260; English 320, 331, 335, 351-2, 360, 471-3; History 241-2, 281-2; Linguistics 102; Music 160, 170, 180, 190.

Natural Sciences: Sought here is a critical understanding of natural phenomena and of the methods of science used in their study. Students may fulfill this requirement by passing 3 semester courses, chosen from the following, and preferably including both the biological and physical sciences. The following list of courses is provided as a general guide. Substitutions may be made upon the approval of the dean of the college in which the student is registered.

Biochemistry 441; Biology 220; Botany 101, 130, 201, 450; Genetics 352; Microbiology 130, 351; Zoology 101, 450.
Chemistry 100 and 101, 113 and 115, 114 and 116, 117 and 118 (each combination of lecture and lab is here considered one course); Geography 101; Geology and Geophysics 101, 102; Meteorology 101.
General Science 121, 122, 123, 124; Information Sciences 301, 302.
Oceanography 201; Physics 100, 102, 110, 111, 151, 152, 170, 272, 274.

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. Students may fulfill this requirement by passing 3 semester courses, including at least one semester course from each of the following groups. The following list of courses is provided as a general guide. Substitutions may be made upon the approval of the dean of the college in which the student is registered.

I. American Studies 201, 202, 301, 302; Anthropology 150, 200; Asian Studies 312; Botany 105; Psychology 100, 110, 112, 320, 321, 322; Sociology 100, 200, or any course at the 300 level except 362.
II. Economics 120, 150, 151; General Engineering 203 (same as IS 203); Geography 102, 151; Political Science 110.

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, taking credit courses or their equivalent by examination) 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.

Application for Degree. An application for graduation must be filed at the admissions and records office, Bachman Hall 125, at least a semester, and preferably a year, prior to graduation. The student must file a new Degree Application form if the date of graduation should change.

Graduate Credit for Seniors. Seniors at the University of Hawaii may earn credit toward an advanced degree for some courses completed during their last semester as undergraduates provided (1) that the courses taken are in excess of the requirement for the bachelor's degree, (2) that such courses may be used to fulfill requirements in the major field, and (3) in the field of education, that they have completed their student teaching. To obtain such credit requires written approval of the dean of the appropriate undergraduate college and the Graduate Division when registering for the course.
Special Instructional Programs

Honors Programs
Program Office: Sinclair Library 504-B

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, mathematics, philosophy, political science, religion and other subjects. Students who take the majority of their lower division work in these special courses and sections may be eligible for the award of Sophomore Honors.

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 upper-class 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 honors 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 director of Undergraduate Honors Programs atop Sinclair Library.

Academic Distinction. 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 Distinction." At least 30 semester hours of this undergraduate work must have been taken at the University of Hawaii within six years prior to graduation.

Honors Courses
(Limited to SSP and Honors students)

Hon 151-152 Science and Ideas (4-4) I, II
Man's present understanding of nature and foundations upon which that understanding is based. Honors equivalent of Sci 121-122.

Hon 317-318 Research Method (v) I, II Linn
Survey of research areas, specialized reading and preliminary experimentation; definition of a specific research problem. Available only in selected fields.

Hon 485 Engineering Field Study (3) I, II
Field work in selected Oahu engineering firms, under supervision of professional personnel and faculty. Participation in research, development, consulting and manufacturing. (Satisfies Technical Elective requirement in Engineering.)

Hon 491-492 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 honors degree.

Hon 493-494 Senior Honors Thesis (2-2) Yr Linn
Preparation of research paper under individual faculty supervision. Required for graduation with honors.

Interdisciplinary Courses

In addition to the many interdisciplinary courses listed among the offerings of the departments of the several colleges in the following pages, there are a few such courses which do not fit within any department. The following are administered by the Honors Program but are open to any qualified student.

IS 203 Technology and Society (3) I, II Takahashi
The nature of technology and its impact on society. Historical interactions, current aspects, projections for the future. Present problems and conflicts, and prospects of resolution. (Identical to GE 203.)

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

IS 293 Pre-Education Practicum (3) I, II Joseph
Tutoring the culturally disadvantaged; seminar compares the educational assumptions of subcultures in Hawaii.
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.

**IS 751-752 Interdisciplinary Teamwork (2-2) I, II** Stringfellow Seminar and supervised participation in interdisciplinary intervention with handicapped children and their families. Pre: consent of instructor.

---

**Liberal Studies B.A. Program**

**Program Office:** Sinclair Library 504-D

In this period of rapid growth at the University, some students have come to feel regimented by the standardized curricular requirements of the school, or neglected as individuals in a large student body. As a partial response, the University has instituted a Liberal Studies Major B.A. Program which leads to a bachelor of arts degree in liberal studies from the College of Arts and Sciences.

The Liberal Studies Program permits a qualified undergraduate to construct his own multidisciplinary major-equivalent with the advice and consent of the program director and a faculty member of his choice. At present, a student in the program must satisfy the University degree requirements, the Arts and Sciences credit requirements, and the Arts and Sciences language requirement. Also, he must maintain a 2.5 grade-point ratio in those courses which form his major equivalent. Courses in the major equivalent may not be taken on a credit-no credit basis.

Any student not on academic probation may apply for admission to the program by appointment with the program director in Sinclair Library. Essentially, the Liberal Studies Major Program has been designed for the student who: (1) wishes to study a particular problem or theme, e.g., revolution or the urban crisis, through a multidisciplinary constellation of courses; or (2) wishes to create for himself an undergraduate major or program for which there are courses—e.g., linguistics, pre-law, pre-med, pre-library science, pre-public health, etc.—but for which a baccalaureate program has not yet been established. Thus, the main advantage of the Liberal Studies Major Program is that it opens new options to the undergraduate by allowing him to tailor his bachelor's curriculum to his individual interests and needs.

**Hawaiian Studies**

The University is unique in the scope it offers to students interested in the Pacific region generally and in Hawaii particularly. A "major" in Hawaiian Studies may be designed within the Liberal Studies Program under the general supervision of a faculty committee which helps the student to achieve some integration in his selection from the wide variety of courses available. Students must achieve competence in the Hawaiian language. Although not designed to meet specific postgraduate needs, the suggested curricula will help prepare students for further study, research or employment in such
fields as education, social work, anthropology, Pacific Islands studies, linguistics, the translation of laws and historical documents, or in the tourist industry. For further information, consult the director of Liberal Studies.

Comparative Literature

A wide range of courses in the literature of both East and West provides an opportunity for comparative studies of British, American, Continental European, and Oriental literature. A B.A. "major" in Comparative Literature is available through the Liberal Studies Program.

Women's Studies

A "major" concentration in Women's Studies is available through the Liberal Studies Program. Courses are offered in a variety of departments to permit an interdisciplinary approach and to keep pace with the rapid changes and the developments in this new field. Several of the courses accommodate the Hawaiian setting by using multicultural materials drawn from Hawaiian and Oriental sources in addition to those typical of women's studies programs across the country.

English Language Institute

For ELI course descriptions see "College of Arts & 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 course work. 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 course work 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 bachelor's or master's degree from an accredited university in the United States, Australia, Canada, England, New Zealand;
(c) those whose English meets the University's standards for full-time study.

Waivers. Academic departments may assume the responsibility of waiving any or all of a foreign graduate student's recommended ELI courses. Signed waiver forms must be submitted to the ELI office in Moore Hall, room 570.

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, except as waivers apply. Because of their special purposes, ELI courses take precedence over all other course work. 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 Course Work. 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. Such students may be eligible for H.E.L.P. (Hawaii English Language Program); for information write to H.E.L.P., College of Continuing Education and Community Service, University of Hawaii at Manoa, 2500 Dole Street, Honolulu, Hawaii 96822.
Military Studies Program: ROTC

Military Science (MS)

The Army Reserve Officer Training Program (ROTC) is designed to give both male and female students on campus training and experience in the art of organizing, motivating and leading others. Successful completion of the prescribed training program qualifies the participant for a commission as a second lieutenant in the U.S. Army. Once commissioned, graduates enter active duty, or if selected, may elect to pursue an advanced degree on an educational delay status. Two program options are available to students at the University of Hawaii, the four-year and the two-year programs.

The four-year program is a voluntary program consisting of training conducted during the freshman through senior years. The first phase of training, the basic course, is administered during the freshman and sophomore years. All physically fit students are eligible for enrollment. Students who have participated in the Junior Division ROTC program 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 second phase of training, the advanced course, is administered during the junior and senior years and includes a six-week summer camp between the junior and senior years at a mainland military installation. Subsistence pay of $100 per month is paid to students enrolled in the advanced course. Pay while at summer camp is $283 (approx.) per month. 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 director of military science program; (3) successfully complete the first two-year (basic) course of a Senior ROTC course or the equivalent, as explained above.

The two-year program (male students only) 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 $307 (approx.) per month.

The Army Flight Training Program is offered to qualified students in their senior year of the ROTC program and can lead to a private pilot’s rating.

Financial assistance scholarships are available for each year of the program. The scholarships provide payment for tuition, fees, books, laboratory expenses and $100 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 three, two and one-year scholarships apply during the second semester at the University. Completion of the basic course or equivalent is a prerequisite for the receipt of the one and two-year scholarships. For further information, inquire at the office of the director of military science program.

Director: Peters.
Associate Director: Fukumoto.
Assistant Directors: Krause, Lane, Shain, Davis, Farrell.
Staff Members: Laul, Lopez, Freeman, Imasaka, Weeks, Rubio, Hirayama.

Leadership Laboratory required 1 hour per week.

MS 101 Fundamentals of Leadership and Management (2) I
Introduction to basic principles and concepts of leadership to include individual behavior and motivation, group interaction, effect of the situation and theories of effective leadership. Leadership Laboratory: Significance of military courtesy, discipline, customs and traditions of the service. Development of leadership abilities through practical exercises.

MS 102 Applied Leadership and Management (2) II
Application of fundamentals and principles of leadership in the management of a small group. Leadership Laboratory: Development of leadership abilities through practical exercise. Pre: 101 or consent of instructor.

MS 201-202 American Military History (3-2) Yr
Historical growth and development of the Army stressing personal leadership of selected individuals and the magnitude of management implications. Survey of relationship between the military and other aspects of American society. Role of the military in establishment, expansion, preservation and development of the nation. Pre: 101-102 or equivalent; consent of program director.

MS 301-302 Advanced Leadership and Management (3-3) Yr
Development of student’s ability to express himself clearly and accurately with emphasis on analysis of military problems, evaluation of situations and preparation and delivery of logical solutions. Analysis of the leader’s role in directing and coordinating efforts of individuals and organizations in execution of military missions to include military geography. Leadership Laboratory: Applicative work emphasizing duties and responsibilities of junior leaders. Pre: 201-202 or equivalent; consent of program director.

MS 401-402 Seminar in Leadership and Management (3-3) Yr
Analysis of selected leadership and management problems involved in unit administration, military justice and use of military staff in decision making. Theory and dynamics of military team; coordination and planning necessary between elements of the team in combat operations. Obligations and responsibilities of an officer on active duty; officer enlisted relationships. Leadership Laboratory: Application of leadership principles, stressing responsibilities of leader and affording practical experience through exercises. Pre: 301-302 or equivalent; consent of program director.

Aerospace Studies (AS)

Aerospace Studies (AS) is part of the Air Force Reserve Officers Training Corps (AFROTC) program. Its purpose is to prepare college students for managerial and leadership positions as Air Force officers.

Students who volunteer, meet selection criteria, successfully complete the prescribed courses, and obtain a baccalaureate degree are commissioned as second lieutenants in the United States Air Force. They will then serve on active duty, or may, in some cases, obtain an educational delay designed to allow graduate study. Women are eligible for the program and commissions and the academic courses are open to any student.

The University of Hawaii AFROTC program consists of two academic years. Normally, juniors and seniors are enrolled; however, sophomores and graduate students may
also qualify. Applicants receive six-week training at a mainland Air Force base with expenses paid before entering the program. Once enrolled, students study the development of air power, space operations, and Air Force leadership and management in an academically free student-centered environment. Seniors who medically qualify will receive no-cost flight instruction which can allow them to obtain a private pilot flying certificate.

All cadets accepted in the AFROTC program receive $100 monthly and are also paid while attending the six-week mainland training session. Scholarships covering tuition, fees, and books are also available on a competitive national basis.

Interested students should contact the director of aerospace studies early in their freshman year for information.

**Director:** Greenley.
**Assistant Directors:** Boyle, Nakaguma.

**Leadership laboratory required 1 hour per week for each course listed for Air Force commission candidates.**

**301 Growth and Development of Aerospace Power (3) I**
*Boyle*
Study of the development of U.S. air power: concepts, doctrines and functions of the Air Force in national security.

**302 Introduction to Astronautics and Space Operations (3) II**
*Boyle*
Man's efforts to explore space: the significance of major characteristics of the solar system, and the basic laws and principles which govern space operations.

**451 Air Force Leadership (3) I**
*Nakaguma*
Study of leadership as it applies to the Air Force. Includes leadership theory, styles, behavioral science, concept of professionalism for Air Force officers, and the military justice system.

**452 Air Force Management (3) II**
*Nakaguma*
Analysis of managerial functions as they apply to the Air Force.

**Population Studies Certificate**

For listing of courses, see "College of Arts and Sciences."

Population Studies is an interdisciplinary certificate program, involving faculty from several University departments, under the supervision of a Population Studies Committee composed of the program director and the chairmen of the departments of anthropology, economics, geography and sociology. The program is designed primarily for students who are candidates for an advanced degree—M.A., M.S., M.P.H. or Ph.D.—who wish to acquire an understanding of demographic structures and processes and to develop a special competence in the application of the concepts and tools of their primary discipline to various aspects of population study. The program emphasizes the social and economic aspects of the causes and consequences of population trends and examines the rationale and the ways by which societies attempt to modify these trends, with special reference to the Asian and Pacific area. Special attention is paid to training in techniques of demographic analysis appropriate to deficient or limited data.

Students who successfully complete 15 credits drawn from an approved list of courses, offered by the program and by several departments, and who pass a comprehensive examination, will be eligible to receive a certificate in Population Studies.

**National Student Exchange**

The National Student Exchange (NSE) Program was established to provide students with opportunities to become acquainted with social and educational patterns found in different parts of the United States. University of Hawaii students may incorporate into their undergraduate program a year, or semester, of exchange study at another university if that university can send a student in exchange. With a minimum of extra cost and waiver of out-of-state residence fees, a student may spend a year at another NSE institution.

To be eligible, students must be sophomores or juniors who have a 2.5 cumulative grade-point average at the time of exchange and are in good standing at the University.

Institutions in the NSE include: University of Alabama, University of Idaho, Illinois State University, University of Maine (Fort Kent and Portland-Gorham), University of Massachusetts. University of Hawaii, Montana State University, University of Montana, Morgan State College (Maryland). University of Nevada (Reno), Ohio University, Oregon State University, University of Oregon, Rutgers College (New Jersey). University of South Florida, Towson State College (Maryland). West Chester State College (Pennsylvania). William Paterson College of New Jersey, University of Wisconsin (Green Bay).

Details on costs, application procedures, living facilities, and the universities involved are available from the NSE campus coordinator in the office of admissions and records, Bachman Hall 124.

**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 of Hawaii.

The certificate is awarded upon graduation to a student who completes (1) advanced reading and conversation courses in the Russian language equivalent to at least third-year Russian and (2) 9 credits of work, exclusive of courses taken as part of the major, chosen from the offerings listed below.

- Geography 445 Geography of the Soviet Union (3)
- History 396 History Colloquium (3)
- History 449-450 History of Russia (3-3)
- History 451-452 Modern Russia and Soviet Foreign Policy (3-3)
- History 453-454 Russian Intellectual and Cultural History (3-3)
- History 457 The Russian Revolution (3)
- Philosophy 403 Marxist Philosophy (3)
- Russian Literature 311-312 Introduction to Russian Literature and Civilization (3-3)
- European Languages 331 19th-C. Russian Novel (3)
- European Languages 332 20th-C. Russian Literature (3)
- European Languages 333 Ideology and Literature in the Soviet Society (3)
- Russian 411-412 Literature of the 19th-C. (3-3)
- Russian 413-414 Literature of the 20th-C. (3-3)
- Russian 418 Advanced Composition and Stylistics (3)
- Russian 419 Advanced Reading in the Russian Daily Press (3)
- Religion 480-481 History of Religions in Russia (3-3)

Further information may be obtained from Professor Michael Klimenko, Committee on Russian Studies, Moore 454, or telephone 948-8520 or 948-8828 (department of European languages).
Marine Option Program

A certificate in Marine Studies, signifying the completion of certain requirements in addition to a regular major, is offered for undergraduate students from any academic discipline by the Office of Marine Programs of the University of Hawaii.

The certificate is awarded upon graduation to the student who completes (a) an academic core of 12 credits of work in marine-related courses, consisting of:

1. Oceanography 201 or equivalent
2. One 3-hour marine interdisciplinary course
3. Two 3-hour courses in the student’s major field having a marine orientation

and (b) the acquisition of a marine skill, defined as a level of proficiency attained through repetitive exposure to and practice of a specific marine-related technique. No credit is given for the acquisition of a marine skill. An internship fund has been established to aid selected students to acquire a marine skill.

For further information and program applications, contact the director, Marine Option Program, Office of Marine Programs, Holmes Hall 404, telephone 948-8444.

Tutoring and Services to Handicapped

A tutoring service is maintained by the University in its Kokua program. This service assists students who need special, but temporary, assistance in a particular subject. Students may be referred to Kokua by an academic adviser or by an instructor; self-referrals are also accepted.

Aids to students who have physical impairments are offered by the University, also through Kokua. Students who will need special assistance because of physical handicaps should apply as early as possible to this 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.

Freshmen Seminar Program

This unique program allows freshmen to learn in small seminars under the guidance of qualified senior students. Each class is limited to eight, so that the student does not sit passively listening to a lecture, but joins in with the seminar members in making the material relevant to his life. Each freshman, therefore, has the opportunity to make learning both enjoyable and valuable.

The seminar leaders, who receive 6 credits for participating, are selected from their respective academic departments according to academic record, faculty recommendations, group experience and interest in teaching. Seniors who may be contemplating a career as educators are provided with first-hand experience in college teaching, under the tutelage of faculty members.

Freshmen are selected on a first-come, first-served basis. In order to participate fully, they are required to enroll in two or three of the four courses offered in the seminar program—English, psychology, anthropology, religion. They select the rest of their curricula from the regular University offerings.

Because enrollment is limited, interested students and prospective leaders should contact the program director or course instructor as far in advance of the beginning of the semester as possible. More information and pre-registration forms are available at Johnson Hall B-7, telephone 948-7141.

Ethnic Studies Program

Program Office: East-West Rd., Bldg. 4

Ethnic Studies seeks to impart to students knowledge about the traditions, history, and current problems of ethnic groups in Hawaii. The program is designed to instill in members of ethnic groups living in Hawaii a sense of intelligent pride in being themselves, in finding out who they are and how they have come to be in the position they are in today.

Since much of the history and culture of ethnic groups are not recorded in written form, much learning takes place through interaction with community residents who have firsthand knowledge. People from various segments of the wider community are invited to talk about their life experiences and areas of knowledge in which they have expertise. Conversely, students are encouraged to undertake research projects in the community, gathering oral history or obtaining data on community problems, such as urban renewal in Chinatown or land development in Kahuulu.

Comparative data on other ethnic groups in the world are also incorporated to put the Hawaiian experience in clearer perspective. Parallels and contrasts with other ethnic groups in Asia, the Pacific and the mainland United States enable the student to understand better the social and economic development of Hawaii’s ethnic groups.

ES 200 Japanese in Hawaii (3) I, II

Analysis and examination of Issei roots in Japan; the contract labor experience; life in plantation society; role of Japanese immigrants in the move to organize unions, and their dilemmas and problems during WW II. Japanese in Hawaii and the process of post-WW II mobility into the Democratic Party, the legislature, the public bureaucracy. Japanese in the light of changing economic, political, and social situations in Hawaii and the Pacific; inter-ethnic relations, perspectives on identity, culture, and sex; their economics and politics.

ES 201 Chinese in Hawaii (3) I, II

History and contemporary problems of the Chinese in Hawaii—immigration, anti-Chinese agitation, political and economic roles, Chinatown, Chinese-American identity, sex and racism, relations with other ethnic groups and ties with their homeland.

ES 202 Filipinos in Hawaii (3) I, II

Examination of the Filipino experience in Hawaii including contemporary problems relating to employment, education, health and welfare, housing, acculturation, socialization process of the immigrant in Hawaii, inter-ethnic relations, intermarriage, conflict, role in organized labor.

ES 203 Caucasians in Hawaii (3) I, II

Caucasian historical experience in Hawaii: impact of traders and missionaries, rise of Caucasian business oligarchy, plantation economy, overthrow of the monarchy and annexation, economic and political control 1900-1950. Caucasians in Hawaii today: land control, the modern corporation, military influence, cultural dominance, identity and related problems of Caucasian-Americans, racism, and counter-racism.
ES 205 Black Americans (3) I, II
Historical analysis of position and status of Blacks in America—slavery, inferiority, identity, resistance and protest.

ES 221 Hawaiian Americans (3) I, II
Crucial political, social, and economic problems of Hawaiians today in light of historical developments: land, housing, education, welfare, employment, leadership.

ES 301 Ethnic Identity (3) I, II
Analysis of individual and group problems of identity. Theories of identity, identity conflict. Culture conflict, interethnic relations. Emphasis placed on understanding the meaning and roots of racism and cultural genocide, and the relevance of these concepts to local conditions. Pre: any two from Anth 305, ES 200-level courses. Psy 322.

ES 300 Field Studies (3) I, II
Students will actively participate in developing a class analysis of Hawaii focusing on specified communities. Work will involve research, oral history, interviews with people in all walks of life. Pre: consent of instructor. Two 200-level ES courses.

ES 397 Land Tenure Change in Hawaii (3) I, II

ES 398 Social Movements in Hawaii (3) I, II
Description and analysis of the role of various contemporary movements for social change in Hawaii. Pre: one 200-level ES course or introductory social science course.

ES 399 Directed Reading (3)

New College

New College began in 1970 as a group of experimental courses. With its own faculty and student body, it has evolved into a liberal arts program within the University of Hawaii at Manoa pursuing goals of general education while maximizing opportunities for creative achievement. Freshmen and sophomores are engaged in a core multidisciplinary curriculum: upper-division students are granted an unusual degree of freedom from course work and freedom to pursue intellectual and artistic enterprises of special significance to each individual. New College forms an intense subcommunity within the larger University community.

Curriculum. For many Americans the entire world is limited to here and now; they know and care about only their immediate culture, their own psyche, and this moment in time. The freshman-sophomore curriculum is designed to enlarge horizons beyond these narrow and perhaps self-limiting boundaries.

Freshman and Sophomore Years. Students in New College take two courses per semester (8 units apiece) for the first two years. The eight courses required are run by a committee of faculty of the college and broken into a number of seminars. Three of the courses deal with Modes of Thought in: (a) the Humanities; (b) the Natural Sciences; (c) the Social Sciences. The emphasis in these courses, as the title indicates, is not coverage but on the method of inquiry, the ways in which the disciplines function, other ways to think and solve problems.

A second track faintly resembles traditional World Civilization and Humanities courses, but rather than assembling Great Books, Great Ideas, or narrating centuries of political facts, an attempt is made to impart a sense of the life-style of some of the great cultures in man's past and present. All the disciplines are brought to bear in this process of recreation, synthesis, and evaluation. A time sequence, somewhat out of phase, is proposed: Modern World (the present) comes first: Gods and Men (the past) follows; the World's Future is the last course required. One result of an entry into the past and of disciplined guessing about the future may be the development of perspective on the present so that it may not only be lived, but understood as well.

A third track offers the student an opportunity to get to know well a culture other than his own via two sophomore courses which integrate language with history and life-style, and via spending some time in that other culture (which may be in a Hawaiian rural community, or in a mainland Black ghetto, as well as in Europe or Asia). The student chooses from perhaps a dozen possibilities.

Junior and Senior Years. Each student works with his faculty adviser and his faculty committee to set up a program leading to two goals: passing comprehensive examinations in a field relating to his creative project; and completion of that project. Whether it be a thesis, a symphony, a scientific finding, or a collection of poems. To accomplish these two goals, the student may take courses at the University, embark upon an extensive reading program, participate in community activities, or travel for research purposes or to gain relevant experiences.

The New College program was under review when this catalog went to press. More information is available from the director of New College, 3001 Vancouver Drive, or from the office of the dean of student services, College of Arts and Sciences. Bachman Annex 10.

NC 101 The Modern World (v) I
Multi-disciplinary examination of the meaning and consequences of mankind's experience in the 20th century. Presentations, lectures, seminars, and tutorials.

NC 102 Gods and Men (v) II
Multi-disciplinary examination of the philosophic and religious questions about existence, including a study of Judaic-Christian, Greco-Roman, and various Eastern traditions. Presentations, lectures, seminars, and tutorials.

NC 202 The World's Future (v) II
Attempt to predict the future 30 years hence, based on use of various tools of inquiry developed by New College students during their first three semesters. Special attention to technological and scientific factors: computer, genetic codes, ecology. If there is discrepancy between the "what-will-be" and an individual student's version of "what-ought-to-be," the student will be asked to determine how and if the discrepancy can be overcome.

NC 203-204 Second Culture, Introduction to (v) I, II
Multi-disciplinary study of a second culture. Geography, history, literature, art and religion of the culture or subculture in question. Students may also receive intensive language training through intermediate level. Proposed target cultures include: France, Germany, Mexico, Spain, Sweden, India, Indonesia, Japan, U.S.S.R., and U.S. subcultures. Arrangements for a summer's, semester's, or year's living-learning experience in chosen culture or subculture.

NC 220 Modes of Thought: Social Sciences (v) I, II
Analysis of methods of inquiry used to pose questions and seek answers in the social sciences.

NC 230 Modes of Thought: Natural Sciences (v) I, II
Analysis of methods of inquiry used to pose questions and seek answers in the natural sciences.
Survival-Plus Program

Survival-Plus provides a student the opportunity to organize all his undergraduate training around the major socio-ecological crises that threaten extinction of the human race and other living things. The program is ecological in the sense that it examines the complex interactions of man and his environment, where “environment” is interpreted more broadly than is common. Students examine problems inherent in human alienation, war and peace, social and economic inequities, alternative socio-political systems, etc., as well as those of pollution, overpopulation, urban decay, and the depletion of natural resources. The program attempts to provide direction to students interested in answering the question: “How can the human race survive under conditions which might make survival worthwhile?” Emphasis is on both understanding and involvement, and students are encouraged to take an active part in the process of change. Freshmen and sophomores may develop flexible curricula individually designed to provide a basic introduction to issues of contemporary importance, while acquiring rudimentary tools with which to begin meeting society’s problems. The Survival-Plus core courses provide an alternative to the University’s general education requirements. Individual and group research projects and field work, under the supervision of a multi-disciplinary staff, are available. Juniors and seniors may choose among several “directional options” leading toward the granting of a Certificate in Survival, while pursuing either a major field of study in other departments or develop their own major through the Liberal Studies Program. Active involvement in one of the traditional disciplines is encouraged, with the techniques drawn from these major studies focused on intensive investigation of particular relevant issues. Seminar courses allow students from diversified disciplines to pursue in-depth research of particular interest. Individual advising, seminars, independent and group projects and field work are available.

As the aim of the program is to reach the greatest number of individuals and promote awareness of ecological problems, students from outside the program are encouraged to participate in Sur courses if space is available. This program was introduced as an experimental program in Fall 1970 and is currently being reviewed. For further information visit the Survival-Plus office at 9 Maile Way.

Sur 101 Human Alienation (2) I, II
Man’s feeling of estrangement; brief introduction to theories, possible sources and forms of measurement. Some social, psychological and political effects.

Sur 102 Pollution and Depletion (2) I, II
Origins, kinds and consequences of pollution. Consumption rates and reserves of recurring and nonrecurring resources.

NC 240 Modes of Thought: Humanities (v) I, II
Analysis of methods of inquiry used to pose questions and seek answers in the humanities.

NC 399 Directed Work (v) I, II
Varied activities to launch each student on his creative project and on preparations for his comprehensive examinations.

NC 499 Directed Work (v) I, II
Continuation of 399 for seniors.
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 relevance to modern life,
- criteria for the assessment of values in different kinds of society and the world community,
- aesthetic standards,
- 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 or Education.

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 (p. 24). 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, and present to the student services office the goldenrod colored sheet attesting to completion of the major,
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, during the semester preceding the award of the degree, two copies of an application for graduation, one to the office of admissions and records, and one to the office of student services,
7. pay a graduation fee of $5.00 to the treasury office.

No course will satisfy more than one kind of requirement. Exemption by examination is possible in expository writing, speech-communication, and foreign language by applying to the appropriate departments. 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. (See p. 31.)

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 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 end of the sophomore 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 generally have completed a minimum of 60 credit hours of study, including the general education requirements of the University (p. 34) and certain specified courses.

Academic Advising

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

These services apply primarily to freshmen and sophomores. When the student has completed 55 credits (junior standing), he selects 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, and seniors should report to student services for a final check of their records, preferably before registering for their final semester.
Bachelor of Arts Degree Programs

Basic Requirements

Students must complete College requirements in written communication (one course from English 100, 110, 120, 130, 140, 150, 160, 170); in quantitative or logical reasoning (one course from Anthropology 400, Economics 321. Philosophy 210, Philosophy 445, Psychology 113. Communication 406, Mathematics 100 or above, excluding Math 111: Business Analysis and Statistics 301-302. BAS 351. Educational Psychology 429, Information Sciences 301-302. Agricultural Economics 434, Agricultural Economics 480); and in world civilizations.

The College requirement in written communication is strongly urged for the freshman, since he develops skills here that should aid him in many of his other subjects.

In addition, students must complete a language/culture requirement that specifies at least a first-level proficiency (i.e., through 102 or equivalent) upon entrance to the University followed by:

1. satisfactory completion of second-level (i.e., through 202 or equivalent) study of the same foreign language. or
2. approved study abroad. or
3. two semester courses in the culture of the target language, as approved either by the appropriate language department or by the College.

Area Requirements

Humanities: 6 semester courses, including at least two English courses from Group I, at least one course from Group II, and at least one course from Group III.

I. Courses identical with those in University Group I.
II. Courses identical with those in University Group II.
III. Courses identical with those in University Group III.
IV. (Creative Endeavor) Note: most of these courses have limited enrollment. Art 105. 106. 107. 108: Drama 221-2. 240, 281-2. 283-4, 490; East Asian Languages 141; English 313; Music 123-4, 125-6, 127-8, 129: Speech 231.

Natural Sciences: Completion of the University curricular requirements in Natural Sciences including one lab science.

Social Sciences: Completion of the University curricular requirements in Social Sciences, plus one additional course chosen from the University list.

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 (generally not to exceed 40 credits in any one subject), as well as related required courses. Major requirements become effective beginning with the junior year.

American Studies. Major requirements: 30 semester hours of upper division courses. Required courses: 381-382: 481-482. The remaining 18 semester hours, taken from courses in American studies and allied fields of the humanities and social sciences, will be arranged on an individual basis between each student and the assigned American studies adviser.

Students planning to major in American studies must take 201-202 and be interviewed by a faculty member. Information concerning the interview is available in the departmental office.

Anthropology. Major requirements: 27 semester hours.

Required courses: 200, 210, 215 and six courses from the 300 and 400 levels. At the recommendation of the student's adviser 150 may be substituted for 200, 210, or 215. Three of the 300 and 400 level courses may be from related disciplines with prior approval of the student's adviser. Students going on to graduate school are urged to take 305 or 306 and one course from among 370, 380, or 381.

Art. Major requirements: 39 semester hours. B.A. History of Art required courses: Art 101. 12 hours introductory studio and 24 hours history of art. B.A. Studio required courses: Art 101, 12 hours introductory studio, 12 hours history of art. and 12 hours of studio art from the following: ceramics, drawing and painting, printmaking, sculpture, textile design, weaving, visual design.

Asian Studies. Major requirements: 36 semester hours. Required courses: 241-242 (same as History 241-242); 310 or 312: 6 hours of a third-year Asian language or equivalent; one of two alternative choices: (1) 15 hours, predominantly Asia-related, from one of the following fields: anthropology, art, drama and theatre. Asian literature, economics, geography, history, linguistics. music, philosophy, political science, religion. sociology: plus 6 hours of Asia-related courses outside this field of concentration from the humanities or social sciences. OR (2) 15 hours of courses on one Asian country or region plus 6 hours of courses on another Asian country or region.

Biology. Major requirements: 30 semester hours including 220 and 250: and approved courses in genetics, physiology, and ecology. Chemistry 243-246: Physics 151-154 or 170-273; and Math 205-206 are also required. Additional nonintroductory courses are to be selected from biochemistry, botany, genetics, microbiology or zoology. Students tentatively planning to major in biology should consult with the director of curriculum in biology. immediately on entering the University of Hawaii.

Botany. There are alternative pathways in obtaining a degree in botany.

Plan A. Major requirements: 32 semester hours. Required courses: a core of 201, 410 and 470, preliminary to at least 16 credit hours in other courses above 200. Credits from two courses taken in other biological curricula as approved by adviser are required as part of the total of 32 credits. Related courses required: Chemistry 243-246, or 241-242 and Agricultural Biochemistry 402-403: Mathematics 205.

Plan B. Major requirements: 32 semester hours including not more than 4 credits in courses below 200. Required courses: a core of Biology 220, 250, Botany 201, 410 and 470. preliminary to at least 12 credit hours in other courses above 300. Related courses required: Chemistry 243-246; Mathematics 205.
Honors Program. Requirements for Plan A or B but with the addition of Mathematics 206 and either Physics 151-154, or 170-171.

Students interested in majoring in botany should seek advice from the chairman of the department immediately on entering the University.

Chemistry. Major requirements: 24 semester hours, in addition to 114-116 or 117-118; including 133-134, 243-245, 244-246, 333, 351, 352, 353. A reading knowledge of scientific German, French, or Russian required.

Chinese. Major requirements: (a) Language Emphasis: 36 hours above 201-202, including 301-302, 401-402 and 6 hours from a list of approved courses in Chinese literature or civilization. (b) Literature Emphasis: 36 hours above 201-202, including Chinese Literature 261-262, 341-342, 441-442, 451, East Asian Literature 491, plus Japanese Literature 261 or 262, Korean Literature 261 or 262 and Chinese 301-302 or 321-322.

Classics. Major requirements: 24 semester hours in upper-division Latin and Greek courses.

Communication. Major requirements: 30 semester hours in Communication courses. Required: Communication 200, 201, 384, 406. Additional requirements: one of the following: Psychology 322, Sociology 322, Sociology 342, Anthropology 330; and also one of the following: Psychology 430, Educational Psychology 311, Psychology 320.

Drama and Theatre. The faculty views theatre not only as a craft, but as an art form capable of making arresting statements of significant human experience. The student is therefore expected to develop his interests in literature and the arts, and to gain understanding of the relation of the theatre to other intellectual activities.

Underclassmen considering a major should complete History 151-152 and proceed with a foreign language. For drama concentration, the following Area Requirements are recommended: Art 101, Drama 160, Drama 260, Music 160 or 170, Philosophy 200. Drama 160, 260, or 240 are prerequisite to certain upper division courses. For dance concentration, the following are recommended: Drama 180, Music 180, and 190.

Major requirements: For drama concentration: 24 semester hours, which may include the drama courses above if not applied to area requirements. Required are a semester each of acting, technical theatre, history of the theatre, and directing. In addition to courses in drama and theatre, 6 hours of dramatic literature are required. For dance concentration: 24 semester hours, including a semester each of intermediate modern dance, intermediate ballet, dance composition, dance history, and two theatre courses at the 200 level or above in two different areas—Drama 221 and 240 are recommended. For either concentration: Majors acquire a working knowledge of the theatre through production experience in scenery, lighting, costumes, and acting, and take a major responsibility in at least one of these areas before graduation; a limited amount of credit for this work may sometimes be earned in Drama 299 and Drama 499.

Economics. Major requirements: 24 semester hours of upper division courses. Required courses: 150-151, 300, 301, 321, 340.

English. Major requirements: 27 hours of upper-division courses. Normally required: 3 hours in each of five of the following areas: Medieval, Renaissance, Restoration and Eighteenth Century, Romantic and Victorian Periods, Modern Literature, American Literature, Language, Imaginative Writing; 3 additional hours in one of these five chosen areas; 6 additional hours in courses numbered 300-499; 3 hours in Shakespeare. It is recommended that majors or prospective majors in English take English 336 as early as possible in their undergraduate career.

Special major programs: Students with other special interests may, with the concurrence of their adviser and of the director of undergraduate advising, plan a major program of their own; this program may include related upper-division work outside the department of English, but must include a total of 27 hours of upper-division work. Such a program must be approved before the beginning of the senior year.

French. Major requirements: 30 semester hours, exclusive of 101-102, 201-202. Required are 331 and 332, one of which must be completed as prerequisite to courses numbered 400 and above.

Geography. Major requirements: 30 semester hours. Required courses: 101, 151, 375, 380, 390, and four additional courses at the 300 or 400 level of which at least three must be in systematic human or physical geography and at least one from each grouping. Geography 490 is recommended for all majors and required for admission to the graduate program. Related courses required: 9 non-introductory credits in related field(s) approved by the department. In choosing courses under the College area requirements, students are advised to select Anthropology 150 or 200 and Economics 151 under the Social Sciences options, Mathematics 134 and 201 or 205 under the Basic Requirements, and basic courses in physics (151-154), chemistry, biology, or geosciences under the Natural Sciences options.

Geology. Major requirements: 24 semester hours beyond 101-102, and including 301, 302, 303, and 305. As related courses, 16 hours chosen from chemistry, physics and/or biology. Recommended foreign languages are French, German, or Russian.

German. Major requirements: 30 semester hours of courses numbered 300 and above. 203 may count toward major.


History. Major requirements: 28 semester hours of courses over 200. Required courses: 496 and at least one course (3 credits) in each field (United States, Pacific and Asia, Europe). Honors program students take 493-494 instead of 496. No more than 6 credits applicable to the major may be taken at the 200 level. 200 level courses applied to distribution requirements may not be counted toward the major.

Japanese. Major requirements: (a) Language Emphasis. 36 hours above 201-202, including 301-302, 401-402 and 6 hours from a list of approved courses in Japanese literature or civilization. (b) Literature Emphasis. 36 hours above 201-202, including Japanese Literature 261-262, 341-342, 441-442, 451, East Asian Literature 491, plus Chinese Literature 261 or 262, Korean Literature 261 or 262 and Japanese 301-302 or 321-322.
COLLEGE OF ARTS AND SCIENCES


Mathematics. Major requirements: 18 semester hours in courses numbered above 300.

Microbiology. Major requirements: 24 semester hours. Required courses: 351 and three of the following: 431, 441, 451, 461-462, 463, 475, 480, 490. Additional work to consist of an integrated group of courses selected from appropriate offerings in biochemistry, biology, botany, chemistry, genetics, microbiology, and zoology. As related courses, Biology 220-250; Chemistry 133-134 or 351; Mathematics 206; and Physics 151-154 or 170-273.

Music. The degree may be obtained through a general program of music study or in one of three emphases—ethnomusicology, music literature, or music theory.

Major requirements: 38 semester hours. including 181-182, 183-184, two semesters of second-level music theory and two semesters of music history. For specific course requirements in ethnomusicology, music history and music theory, see departmental bulletin. For general major, see departmental adviser.

All students planning to major in music should consult with the chairman of the music department immediately upon entering the University of Hawaii.

Non-major Program (Liberal Studies): see p. 37.

Philosophy. 24 semester hours in addition to 210 and at least one of the following: 100, 200, 201. Undergraduates planning work in Asian and Comparative Philosophy should take introductory courses in Indian, Buddhist and Chinese Philosophy.

Physics. Major requirements: 32 semester hours including 170-171, 272-273, 274-275, 310, 350, 405, 430 or 450, 460, 480-481. The following in mathematics: 205-206, 231, 232, 402 or 403, and Chem 113 through 116 or 117-118 are also required. Upon recommendation of a physics department adviser, the requirements 170 through 273 may be satisfied by 151 through 154.

Political Science. Major requirements: 27 semester hours. Required courses: 110 and 300-301. As part of his major, each student is required to complete introductory one-year sequences in three subfields, numbered 300 and above, including 300-301, Political Thought. The remaining subfields are: International Relations, Policy Formation, Comparative Government and Politics, Public Administration, Public Law and Politics. The balance of the political science courses may be taken either within the same subfields or in others. "Topics" courses will be offered each semester. As their contents will vary from year to year, they may be taken more than once for credit.


Religion. Major requirements: 24 semester hours plus Rel 300 for a total of 27 semester hours. Individual programs will be worked out with an assigned adviser, preferably before the beginning of the junior year. The student should plan a sequence of courses to follow any subfield (Chinese, Japanese, Western Religion, and Religion and Society) through to the advanced seminar level. If an Asian sequence is chosen, at least one course should be taken in the Western tradition. If a Western sequence is chosen, at least one course in an Asian tradition should be included. Also, one course in Religion and Society should be taken.

Russian. Major requirements: 30 semester hours from courses numbered 209 and above.


Spanish. Major requirements: 30 semester hours above the intermediate level. Required courses: 303-304, 330, 351-352, 441 or 444 or 450, plus six units of literature. Majors must also pass the MLA Proficiency Tests for Teachers and Advanced Students (on Listening, Speaking, Reading and Writing). Portuguese 360 or 361 may be counted towards the major requirement.

Speech. Major requirements: 30 semester hours. Required courses: 211, 231, 251 or 253, 385, 491. Additional requirements: 6 hours in a related field such as anthropology, communication, drama, linguistics, sociology, as approved by major adviser.

Zoology. Major requirements: Biology 220; or Zoology 101 and Botany 201 or Botany 101. in addition at least 20 credits including the following: Zoology 430 (or Biology 250); Zoology 490; 3 or more additional zoology courses 200 or above, two of which must be laboratory courses. Other courses outside the zoology department acceptable toward the 20 credits: Genetics 451, 452; Entomology 261, 361, 362, Botany 450 (cross-listed as Zoology 450). Related required courses: One year of introductory chemistry (Chemistry 113-116 for students with high school chemistry, or 117-118); one year of organic chemistry, or one semester of organic chemistry and one semester of biochemistry; Mathematics 134.

The beginning student intending to major in zoology should consult a departmental adviser at his earliest convenience. The recommended procedure is to meet prerequisites for and take Biology 220 (see "Biology" for course description) as soon as possible. Alternatively, the student may take Zoology 101 and Botany 201 or Botany 101 without prerequisites and fulfill the chemistry and mathematics requirements later.

Students planning to continue their professional education beyond the B.A. degree should also include a course in genetics, botany, one year of physics, mathematics through calculus, and proficiency in an acceptable foreign language to at least an intermediate level. In addition, a candidate for a master's degree in zoology at the University of Hawaii is required to have taken vertebrate zoology (including comparative anatomy), embryology, and physiology.
Bachelor of Fine Arts Degree Programs

Basic and area requirements are those of the bachelor of arts degree programs except that a foreign language is not required.

Majors (B.F.A. Degree)

Art.  This program is designed to provide basic preparation in ceramics, drawing and painting, printmaking, sculpture, textile design, visual design, and weaving.  Requirements normally include a maximum of 63 credits in the field of art of which 18 must be in the history of art.  All majors must take 12 credit hours of introductory studio courses.  Art 101 should be taken concurrently with introductory studio courses in numerical sequence and in pairs (113 & 114; 115 & 116).

Architecture.  Undergraduates may prepare themselves to study for professional degrees at the graduate level or to pursue professional or related careers in such fields as the construction industry, urban/regional design, agencies of community service, interior design offices, etc.  The basic curriculum incorporates studies in the social and physical sciences, the humanities and the arts as well as environmental design.  Particular stress is laid upon the unique conditions that prevail in Hawaii.  Some of these programs were under review when this catalog went to press; more information is available from the chairman, George Annex B-2.

Major requirements: 42 credits of recommended courses plus required courses: Arch 113, 114, 115, 116, 271, 273, 274, 275, 276.  Students granted advanced standing for the M. Arch (Architectural Design) must complete the following courses during their senior year: Arch 303, 312, 321, 331, 332, 372, 401, 421, 451, 4 credits of 488.

Prerequisites: Students intending to apply for the M. Arch should complete Math 150 or 205, Phys 151-152-153.  Completion of required 100-level architectural courses is prerequisite to all 200-level courses except as noted.  Completion of or concurrent enrollment in 271, 273, 274, 275 is required for enrollment in 276.  Completion of 271-276 is prerequisite to enrollment, except as noted, in all courses numbered 300 and above.

Recommended Programs of Study:


Bachelor of Music Degree Programs

Basic Requirements

Completion of College basic requirements in written communication, in quantitative or logical reasoning, and in world civilizations (see p. 46).  For students concentrating in voice, French 101-102 and German 101-102 are required.

Distributive Requirements

A.  Humanities:  one course from the following.*

1.  English 251, 252, 253, 254, 255, 256; Drama 160; literature courses offered by language departments in original language or translation.

2.  Philosophy 100, 200; Religion 150, 151.

B.  Natural Sciences: completion of the University curricular requirements in Natural Sciences.

C.  Social Sciences: completion of the University curricular requirements in Social Sciences.

Music Concentrations


Piano or Organ.  Basic theory: 181-182, 281-282, 183-184, 283-284; music history: 265-266; applied music: 8 credits in 135-136, 235-236 and 12 credits in 335-336, 435-436; secondary performance for piano: 2 credits from 131, 231, 123-124; secondary performance for organ: 2 credits from 233, 235-236 and 12 credits in 335-336, 435-436; music literature: 469; 4 credits in 420(21) for piano, 4 credits in 420(22) for organ, 4 credits from 461, 462, 463, 464, 465, 466, 467, 468; advanced theory: 383 for piano only, 381, 382; methods & pedagogy: 356-359 for piano, & 357 & 421 for organ; conducting: 325; keyboard ensembles: 2 credits in 401(21), one credit in 401(22) for piano, and one credit in 401(23); organizations and other ensembles: 6 credits.

*This requirement is supplemented by Music 180 and 265-266 required in the music concentration.
from 401, 402, 404, 405, 409; music electives: 6 credits for piano, 2 credits for organ; free electives: 6 credits for piano. 14 credits for organ.

Voice. Basic theory: 181-182, 281-282, 183-184, 283-284; music history: 265-266; applied music: 8 credits in 135-136, 235-236, 6 credits in 335-336 and 8 credits in 435-436; 6 credits of piano (or equivalent, as determined by the piano faculty) selected from 115-116, 215-216, 131, or 231; music literature: 8 credits in 420(11), 2 credits from 461, 462, 463, 464, 465, 466, 467, 468, or 469; advanced theory: 2-3 credits from 381, 382, 383; organizations: 6 credits in 404, 8 credits in 402; music electives: 6-7 credits.

Bachelor of Science Degree Programs

Basic Requirements

Completion of College basic requirements in written communication, in quantitative or logical reasoning, and in world civilizations (see p. 46). Also required are Chemistry 114-116 or 117-118; Mathematics 205-206: Physics 170 through 273, or 151-154.

Distributive Requirements

Humanities: A total of at least three semester courses, chosen from three of the four Humanities groups in the B.A. requirements (p. 46).

Social Sciences: Three semester courses, including at least one from each group:

1. Am St 201, 202, 301, 302; Anthro 150, 200; Asian 312; Psy 100, 110, 112, 320, 321, 322, 430; Soc 100, 200, 312, 322, 332, 342, 352.
2. Econ 120 or 150, 151; GE 203: 1S 203; Geog 102, 151; Pol Sci 110.

Majors (B.S. Degree)

Biology. Major requirements: 37 semester hours including Biology 220; Biology 250; and approved courses in genetics, physiology, ecology, biochemistry, statistics or computer language, and geosciences. Chemistry 243-246 and Physics 151-154 or Physics 170-273 and Mathematics 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, mathematics or geosciences 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 requirements: 37 semester hours, in addition to 114-116 or 117-118; including 133-134, 243-245, 244-246, 333, 351, 352, 353, 422, 444 and a minimum of 6 semester hours from the following: 399, 445, 601, 602, 603, 622, 623, 631, 632, 633, 641, 642, 651, 653, 655, 658 and Biochemistry 601-602.

As related courses, German 211-212 or Russian 207-208, Mathematics 231 and Physics 170-171, 272-273 are required.

Recommended electives are Mathematics 232, 311, 402, 431, 432, Physics 274.

Geology and Geophysics. Undergraduate specialization may be in geodesy, geology, geophysics or hydrology, and shall be stipulated at the beginning of the third year. A suitable program of courses, selected with departmental approval can lead from these specializations to future professional work in geochemistry, geodesy, geology, geophysics, hydrology, or oceanography.

Major requirements: 38 semester hours, including 101-102 or the equivalent, from among appropriate offerings in geology and geophysics and in departments of natural sciences, mathematics, and engineering. As related courses, Mathematics 274-275 are required, except for geology majors, who may substitute GG 360 or 465-466.

Meteorology. Major requirements: 38 semester hours from among appropriate offerings in meteorology (courses 300 through 400), and in departments such as engineering, geography, geology and geophysics, information sciences, mathematics, oceanography, physics and soil science.

As related courses. Physics 170-171 and 272-275 are required.

Physics. Major requirements: 35 semester hours, including 170-171, 272-273, 274-275, 310-311, 350, 405, 430 or 450, 460, 480-481. The following in mathematics: 205-206, 231, 232, and 402, and Chemistry 113 through 116, or 117-118 are also required. Upon recommendation of a physics department adviser, the requirements 170 through 273 may be satisfied by 151 through 154. Requirements for courses above 310 may be modified in order to accommodate special emphasis, or interdisciplinary programs for which the major in physics is appropriate—by recommendation of a physics adviser and by approval of the department chairman.

Recommended First Year Program

For All B.S. Candidates

It is recommended that entering students who have had high school courses in mathematics through pre-calculus, take the following courses during their freshman year:

Chem 113-116 or 117-118: English Composition; Math 205 and perhaps Physics 151-154 or 170-171.

If the student does not have a high school course equivalent to Mathematics 134 (pre-calculus), he may take this course at the University during a prior summer session. Otherwise Mathematics 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 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 Premedical Sciences Committee 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 student services of the College, Counseling and Testing Center and Placement and Career Planning Office.

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 and 250 (general), 320 (vertebrate), and 420 (embryology).
- Chemistry: Chemistry 114-116 or 117-118 (general), 243, 244, 245, and 246 (organic), 133 and 134 (quantitative).
- Physics: Physics 151 through 154 (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.

Catalogs 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.

Students interested in preveterinary medicine should see "College of Tropical Agriculture."

"Nonmajor"

See "Liberal Studies Program" on page 37.

ARTS AND SCIENCES COURSES
See p. 3 for a discussion of course descriptions.

American Studies (AmSt)

Department Office: Moore Hall 324

Professors: Brown, Denney, Lutzky, Matson.
Associate Professors: Bertelson, Gurian, McCutcheon, Neil.
Assistant Professors: Helbling, Meyerson, Ogawa.

Instructors: Alcantara, Boylan, Kauka, Senecal.

201-202 or equivalent is prerequisite to all 400-level courses except as noted.

(Note: Numbers in parentheses indicate former numbers of courses)

201-202 Introduction to American Civilization (3-3) Yr Boylan Central themes of American life and experience studied in the perspectives of history, literature and the social sciences.

301-302 American Perspectives (3-3) Yr Brown Studies of selected urgent problems of American life: the urban crisis, the deterioration of the environment; sex and race discrimination, poverty and plenty, disarmament and the uses of nuclear energy.


381-382 Junior Seminar (3-3) Yr Helbling Materials and methods for the study of American life and thought. Pre: consent of instructor.

419 American Environment: Topics (3) I, II Past topics have included the American Calendar, Rural and Urban America and tours of the U.S. Mainland. See Schedule of Courses for current topic.

420 American Subcultures: Survey (3) I Kauka, Helbling General introduction to the nature and meaning of sub-cultures in American society using history, literature and the arts to examine regional, religious, ethnic, sexual and other sub-cultures.

421 (29S) American Subcultures: American Indians (3) I Gurian Examination of the American Indian from an historical and anthropological view.

422 (495) American Subcultures: Black Americans (3) I, II Helbling Examination of the nature of American national character and of the role Black Americans have played in the making of that character. Pre: U.S. history or equivalent.


424 (490) American Subcultures: Filipino-Americans (3) I, II Alcantara Examination of specific aspects of the Filipino-American experience in Hawaii and the United States, with emphasis on its cultural and situational adaptation patterns in American society.

429 American Subcultures: Topics (3) I, II Matson Past topics have included regional studies, ethnic studies of the Chinese-Americans, studies of deviant minorities and studies of political and religious minority groups. Spring 1974: Studies of non-ethnic deviant minorities.
430 (390) American Institutions: Survey (3) I, II Lutzky
Survey of representative social, political and economic institutions in American society. Suggested for foreign students.

431 (615) American Institutions: Leaders and Movements (3) I, II Brown, Denney
Examination in depth of two or three significant personalities in American history and culture and the movements which originated from their ideas. Different personalities considered each semester. May be repeated for credit.

432 (435) American Institutions: Radical Tradition (3) II Gurian
Three varieties of American radicalism which have provided a continuing critique of prevailing religious, political, economic and social structures: Radical Spiritualism, Communist Utopianism, Anarchism.

439 American Institutions: Topics (3) I, II
Past topics have included the American presidency, the family in America, the role of the military and the mass media in politics. See Schedule of Courses for current offerings.

441 (421) American Thought & Beliefs: Regionalism (3) I, II Bertelson, Gurian
Examination of the historic and cultural aspects of regions of the U.S. with special references to the problems of regional values in a national context. Fall 1973: The Notion of the Southern Identity; Spring 1974: The West in the American Consciousness.

442 (460) American Thought and Beliefs: Myths (3) I McCutcheon
Examination of major American myths—success and failure, individualism, equality, progress, concept of wilderness and frontier and the American sense of mission.

443-444 American Thought and Beliefs: Religious Issues (3-3) Yr Walsh
Examination of ways in which religious thought and religious movements have influenced American culture. Course will center upon issues and religious thinkers.

449 American Thought and Beliefs: Topics (3) I, II Gurian, Bertelson

450 (475) Culture and Arts in America: Survey (3) I, II
Study of popular attitudes towards the arts, travel, fashions, craft and industrial productions, and recreation. The past will be used to explain the present.

451 (465) Culture and Arts in America: Popular Culture (3) II Matson
Examination of the major themes, modes and media of popular or mass culture in the U.S., with emphasis on cultural trends and social implications.

452 Culture and Arts in America: Writers and Their Times (3) I, II Kauka, Boylan
Examination of several American figures, their lives and times, with emphasis upon those who captured the spirit of a period or a lifestyle. Fall 1973: Men and Women in American Fiction; Spring 1974: The Twenties and Thirties.

453 (403) Culture and Arts in America: American English (3) I, II
Linguistic, regional and cultural developments of American English from the Colonial period to the present in literary works. (Cross-listed as English 403) Pre: 2 semesters sophomore literature.

454 (370) Culture and Arts in America: Music in Modern America (3) I, II
Varieties of music, including jazz and popular forms, in contemporary American life, with relevant antecedents. (Cross-listed as Music 370) Pre: sophomore standing.

455 Culture and Arts in America: Themes in American Literature (3) I, II Boylan, Bertelson
Thematic approach to selected topics in American literature. Topics include war, ethnic minorities, men and women, politics and others. Fall 1973: Sports in Literature; Spring 1974: Loners and Outcasts.

459 Culture and Arts in America: Topics (3) I, II Matson, Kauka
Past topics have included Black literature, the mass media, American architecture, rock music and the film in America. Fall 1973: The Film in America; Spring 1974: American Women in the Arts.

460 America and the World: Comparative Cultures (3) I, II Alcantara
Exploration of Asian and Western cultures using cross-cultural and comparative perspectives.

461 (641) America and the World: Comparative Arts (3) I, II
Examination of the cross-cultural influences of Asian and American literature, thought, architecture and the fine arts.

462 (479) America and the World: Foreign Policy and American Character (3) I, II Meyerson
Historical factors in American society that have shaped the personalities of individual makers of foreign policy and how these factors continue to influence policy making today.

463 (651) America and the World: As Others See Us (3) I, II Lutzky
The image of American society, past and present, as expressed through travelers' reports, film, the foreign press and other media.

469 America and the World: Topics (3) I, II Denney
Past topics have included Anglo-American cultures, American civilization and the overseas American. Fall 1973: Social Thought; East and West—major thinkers and their texts.

481-482 Senior Seminar (3-3) Yr Gurian
Further considerations of and individual research into problems of American life and thought. Pre: consent of instructor.

499 Readings in American Studies (v) I, II
Directed readings and research for majors in the field.

610 American Environment: Seminar Topics (3) I Matson
Examination in depth of settlement and exploitation of the American land stressing geography, economics and history. Fall 1973: Technology and Environment.

620 American Subcultures: Seminar Topics (3) II Helbling
Examination in depth of regional, ethnic, sexual, political and religious minorities. Spring 1974: Harlem Renaissance—Black and white intellectuals and creative artists of the 1920's.

630 American Institutions: Seminar Topics (3) II Matson
Examination in depth of representative social, political and economic institutions in American society. Spring 1974: Mass Media in American Society.

640 American Thought and Beliefs: Seminar Topics (3) I Bertelson
Examination in depth in the fields of philosophy, literature, religion and the American mythos. Fall 1973: Creation of a National Literature.

650 Culture and the Arts in America: Seminar Topics (3) I, II Lutzky
Examination in depth in the elite, popular and folk arts and their relevance to American contemporary life. Fall 1973: Folk Traditions in the Arts.

660 American in the Modern World: Seminar Topics (3) I, II Denney
Examination in depth of the political and cross-cultural relationships between the U.S. and other cultures with particular stress upon Asia and the Pacific regions. Spring 1974: Commercial and Cultural Exchange between U.S. and Japan.

701-702 Proseminar—M.A. (3-3) Yr Bertelson
Training in bibliography, research methods and readings in American studies. (For degree candidates only.)

710 (713) American Environment: Readings (3) I Matson
Readings in technology and the environment. Pre: consent of instructor and Ph.D. candidate status.

720 American Subcultures: Readings (3) I, II
Readings concerned with minority groups and individuals. Pre: consent of instructor and Ph.D. candidate status. (Not offered 1973-74)
730 (711) American Institutions: Readings (3) I Brown
Readings concerned with American representative institutions, public and private. Pre: consent of instructor and Ph.D. candidate status.

740 (712) American Thought and Beliefs (3) II Denney
Readings in the beliefs of Americans as expressed in character and cultural studies. Pre: consent of instructor and Ph.D. candidate status.

750 (714) Culture and the Arts in America: Readings (3) II Lutzky
Readings in the American elite, popular and folk arts. Pre: consent of instructor and Ph.D. candidate status.

760 America in the World: Readings (3) I, II
Readings in the political, economic and cross-cultural relationships of the U.S. with Asian nations. Pre: consent of instructor and Ph.D. candidate status. (Not offered 1973-74)

799 Directed Research (v) I, II
Pre: graduate standing; consent of instructor.

800 Thesis Research (v) I, II

Anthropology (Anh)

Department Office: Crawford Hall 206

Professors: Dewey, Howard, W. Lebra, Lieban, Maretzki, Oliver, Solheim.

Associate Professors: Boggs, Finney, Gould, T. Lebra.

Assistant Professors: Griffin, Hanna, Pietrusewsky, Tuggle, Watson.

Most 300 and 400 level courses have as a prerequisite one of the 200 level courses. If passed with a grade of A or B, 150 may be substituted for any of these 200 level prerequisites. Otherwise, written consent of the instructor will be required. 300 and 400 level courses may be taken for graduate credit with prior approval of the student’s adviser.

150 Introduction to Anthropology (3) I, II
Major principles and theoretical orientations of physical anthropology, archaeology and ethnology. With grade of A or B, may serve as an introductory requirement to upper division courses; intended for non-majors.

200 Cultural Anthropology (3) I, II
Nature of culture; introduction to basic concepts for analyzing cultural behavior; patterning, integration, and dynamics of culture; culture and the individual.

210 Archaeology (3) I, II
Introduction to prehistoric archaeology; methods and techniques of excavation and laboratory analysis; brief survey of man’s cultural growth in prehistoric times.

215 Physical Anthropology (3) I, II
Introduction to physical anthropology; primatology, fossil man, heredity, modern man, human growth and constitution.

300 Study of Contemporary Problems (3) I, II
Significance of anthropology for contemporary affairs, particularly American ethnic and minority group relations. Relevance and role of anthropology for various professions, governmental policy, political action, and accomplishment of change. No prerequisites.

305 History of Anthropology (3) I
Historical development of anthropology, emphasizing unity of diverse fields which constitute the study of man. Pre: 200.

306 Foundations of Anthropological Method (3) II
Empirical and logical bases of the social sciences applicable in anthropological inquiry. Pre: 200.

310 Human Evolution (3) II
Theory of evolution; evolutionary biology of primates; the fossil evidence for primate and human evolution. Pre: 215.

320 Archaeological Theory and Interpretation (3) II

330 Social Organization (3) II
Systematic study of human social institutions; general principles of social interaction formulated from ethnographic data. Pre: 200.

340 World Ethnography (3) I
Comparative study of selected tribal, folk, peasant, urban societies of the world. Pre: 200.

350 Oceania (3) I
Introduction to native cultures of Polynesia, Micronesia, Melanesia, Australia. Pre: 200.

355-356 Asia (3-3) Yr
Introduction to the cultures of Asia. Emphasis on ecology, social organization, religion, and problems of transition from traditional to modern societies. Pre: 200.

370 Ethnographic Field Techniques (3) II
Problems and techniques of cultural and social anthropological field work; ethnographic literature and work with informants. Pre: 200.

380 Archaeological Field Techniques (3) I
Archaeological survey and excavations; week-end field trips, mapping, photography, recording. Pre: 210.

381 Archaeological Laboratory Techniques (3) II
Laboratory analysis and evaluation of field data; preservation and restoration of artifacts. Preparation of materials for publication. Pre: 210.

384 Human Osteology (3) I
Human biology of skeletal populations. Methods and techniques used in metrical and nonmetrical study of human skeletal and dental remains; estimation of age and sex; pathology; inter-populational comparisons. Pre: 215 and written consent of instructor.

385 Undergraduate Proseminar (3) I, II
Reporting and discussion of selected problems in current research. (1) Archaeology; (2) ethnography; (3) social anthropology, (4) applied anthropology, (5) psychological anthropology, (6) biological anthropology. Pre: written consent of instructor. May be repeated.

399 Directed Reading or Research (v) I, II
Pre: 2.7 grade-point ratio, or 3.0 grade-point in anthropology, or written consent of instructor.

400 Anthropological Statistics (3) I
Introduction to statistical methods and their use in analysis of anthropological data. Pre: 200, 210, or 215.

414 Introduction to Linguistic Anthropology (3) I
Introduction to the ethnographic study of speech and language. Pre: written consent of instructor. (Same as Linguistics 414.)

415 Ecological Anthropology (3) I
Study of relationship of man with his natural environment, particularly emphasizing role of culture as dynamic component in ecological systems. Pre: 200.

416 Economic Anthropology (3) II
Analysis of economic activities in non-Western, non-industrial societies with emphasis on the production, distribution, and consumption of goods and services in a variety of cultural contexts. Pre: 200. (Alt yrs; not offered 1973-74)

417 Political Anthropology (3) I
Character of political institutions and their development in non-Western and non-industrial societies. Pre: 200.

418 Culture and the Individual (3) II
Cultural factors in the development of personality, cognitive development, deviant behavior; psycho-cultural characteristics of the species. Pre: 200.
419 Oral Art (3) I
Oral prose and poetry in cultural perspective in nonliterate and literate societies; structural, functional, and linguistic description and analysis. Pre: 200. (Complements Music 471 and Art 472 in which credit towards the major will be granted.)

422 Comparative Religion (3) II
Comparative, structural, and functional analysis of supernaturalism, primarily in tribal and folk societies. Anthropological theories of religion and magic. Pre: 200. (Cross-listed as Religion 422.)

423 Social and Cultural Change (3) I
Consideration of various approaches to examples of social and cultural change in non-literate societies. Emphasis on change associated with historical features and social processes of colonialism. Pre: 200.

425 Medical Anthropology (3) I
Study of social and cultural aspects of medicine: the relationship of medicine to the beliefs, social systems, ecological adaptations and cultural changes of human groups.

445 Regional Ethnology (3) I, II
Historical problems and regional developments in ecology, social structure, world view, and other aspects of indigenous cultures. (1) Mainland Southeast Asia. (2) Island Southeast Asia. (3) Micronesia. (4) Polynesia. (5) Melanesia. (6) other to be announced. Pre: 200 and, for sections 1, 2, and 3, 355-356, for sections 4, 5, and 6, 350, or written consent of instructor. May be repeated.

460 Regional Archaeology (3) I, II
Regional surveys of prehistoric cultures, based on archaeological research. (1) Asia and Pacific. (2) Africa. (3) North and South America, (4) other to be announced. Pre: 210. May be repeated.

480 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.)

481 Applied Anthropology (3) II
Methods and results in the application of anthropological concepts to the practical problems of agricultural, commercial, and industrial development. Oriented toward majors in anthropology. Pre: 200. (Alt yrs: offered 1973-74.)

483-484 Japanese Culture and Behavior (3-3) Yr
Systematic analysis of socio-cultural factors for an understanding of Japanese behavior. Fall semester will give attention to social structure with particular emphasis on traditional institutions. Spring semester will emphasize behavior patterns with reference to cultural values, norms, and beliefs. Students may enroll in either semester or both. No prerequisites.

485-486 Peoples of Hawaii (3-3) Yr
Intensive study of Hawaiian society and culture from anthropological viewpoint. 485 focuses on pre-European Hawaii; 486 on modern Hawaiians. Pre: 200. 485 is prerequisite for 486.

488-489 Chinese Culture and Society (3-3) Yr
Two-semester survey course, emphasizing rural life and the relationship between local communities and the larger society. First semester focuses on traditional China and the second deals with contemporary China. Students may enroll in either semester or both. No prerequisite.

620 Theory in Social and Cultural Anthropology (3) I, II
Intensive examination of major theoretical problems in (1) kinship, (2) cognitive systems, (3) religion, (4) political institutions, (5) law and social control, (6) economics, (7) ecology, (8) other to be announced. Pre: written consent of instructor. May be repeated.

630 Theory in Physical Anthropology (3) II

632 Field Study of Population (3) II
Concepts and techniques in field study of non-literate (tribal and peasant) populations. Designed for graduate students in the social sciences actively planning field research that involves taking a census of a study population. (Identical to Geography 632) Pre: consent of instructor.

635 Culture History (3) I
Relationship between data on prehistory recovered archaeologically and those derived from other sources, especially palaeophysical anthropology, historical linguistics, history, ethnology, social anthropology and historical geography. Course designed for non-specialists as well as archaeologists. Pre: written consent of instructor.

640 Method and Theory in Archaeology (3) I, II
(1) Prehistory. (2) environmental archaeology, (3) other to be announced. Pre: written consent of instructor.

699 Directed Reading or Research (v) I, II
Pre: classified graduate standing and written consent of instructor.

710 Seminar in Research Methods (3) I, II
Theory construction and research design in social and cultural anthropology: techniques for collection of data; processing and evaluation of data. Intended for students preparing research of their own. Pre: classified graduate students in anthropology above first year level and written consent of instructor. May be repeated.

712 Data Processing in Archaeology (3) II
Techniques of data retrieval: strategies of field work and data analysis which involve identifying, sampling, and processing large bodies of materials. Pre: classified graduate standing and written consent of instructor. May be repeated.

800 Thesis Research (v) I, II

Architecture (Arch)

Department Office: George Hall Annex B-2

Associate Professors: Burgess. Sidener.
Assistant Professors: Minerbi. Preuss. Toth.
Instructors: Brooking. Liu.


The department of architecture may retain any student work for departmental use.

The research and service arm of the department of architecture is the Community Design and Research Center, a nonprofit design and research program. It provides intern experience for students working under the direction of professional architects, landscape architects, engineers, planners, and interior designers.

101 Introduction to the Visual Arts (3) I, II
Nature of visual arts and its expressions in various forms. Lectures, demonstrations. Offered only as CR/NC. (Cross-listed as Art 101)

113 Introductory Studio "A": Perception (3) I, II
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 (may be taken concurrently). (Cross-listed as Art 113)
114 Introductory Studio "B": Light and Color (3) I, II
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 (may be taken concurrently). (Cross-listed as Art 114)

115 Introductory Studio "C": Space (3) I, II
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 (may be taken concurrently). (Cross-listed as Art 115)

116 Introductory Studio "D": Time and Systems (3) I, II
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 (may be taken concurrently). (Cross-listed as Art 116)

271 World of Environmental Design (3) I, II (3L)
World-wide survey of man's attitude to the provision of shelter and the environmental setting of his life from prehistoric times to present day.

273 Design Processes (3) I, II (2L, 1Lb)
Introduction to environmental design, theory, methodology, and programming including use of the computer.

274 Communication and Presentation (3) I, II (2L, 1Lb)
Basic graphic and written techniques for environmental design communication, including models, structural systems and photography.

275 Introductory Seminar (2) I, II (3L)
Study of the professions contributing to the field of environmental design.

276 Basic Environmental Design (3) I, II (3 2-hr Lb)
Studio problems with graduated stages involving the scope of environmental design and its component fields; i.e., world, national, regional, urban design and planning; architecture; landscape architecture; interior and industrial design. Studio lab and lectures.

301 Architectural Structures "A" (3) I, II
Introduction to basic mechanics, force systems, equilibrium, truss systems, frames and arches. Pre: Math 205. (Identical to GE 301)

302 Architectural Structures "B" (3) I, II
Mechanics of materials. Design of simple beams, columns, and trusses in various materials. Pre: 301. (Identical to GE 302)

303 Architectural Structures "C" (3) I

311 Construction Materials (3) I (3L)
Properties and uses of construction materials. Reading and interpretation of construction drawings and plans. Open to engineering students.

312 Basic Drafting and Site Surveying (3) II, SS (3Lb)
Skills and techniques needed to survey and record exist existing site conditions as well as preparation of drawings and details to describe site design. Preparation of working drawings and specifications for small residence. Pre: 311. Concurrent registration in a design studio.

321 Architectural Climatology (3) I (2L, 1Lb)
How climate affects the design of buildings, with emphasis on tropical climates. Climate and comfort analysis, solar control, thermal control, design for air movement and ventilation. Thermal planning, design of external openings, design of solid elements. Evaluation of an existing building.

322 Mechanical and Electrical Equipment (3) II (2L, 1Lb)

331 Architecture "A": Single Activity Buildings (3) I (3Lb)
Site planning and the relationship of building forms to existing natural and man-made environments in terms of housing. Studio labs with lectures, assigned projects, sketch problems, as well as student-generated project and weekly seminar on site planning and systems housing. Pre: 274, 276 and consent of instructor and program adviser.

332 Architecture "B": Multiple Activity Buildings (3) II (3Lb)
Functional design in quantitative terms as it relates to building types of multiple activities. Studio labs with lectures, assigned projects, and sketch problems, as well as student-generated project and weekly seminar on quantitative architectural design. Methodology including programming, industrialization techniques, computer applications and systems theory. Pre: 331 and consent of instructor and program adviser.

333 Architecture "C": Building Complexes (3) I (3Lb)
Human factors in architectural design as it relates to building complexes of multiple activities. Studio labs with lectures, assigned projects, and sketch problems, as well as student-generated project and weekly seminar on psychological, sociological and anthropological determinants of architectural design. Pre: 332 and consent of instructor and program adviser.

351 Landscape Architecture "A" (3) I, II
Survey of principles and theories of landscape architecture.

352 Landscape Architecture "B" (3) I (3Lb)
Landscape design solution for public and semi-public institutions. Pre: 351.

353 Landscape Architecture "C" (3) II (3Lb)
Landscape architecture, management and modification of private, public and semi-public land. Pre: 352.

361 Interior Design "A": Single Spaces (3) II (3Lb)
Evaluation of needs and objectives of man in relation to interior spaces. Introduction to thermal, luminous, aural, communicative, and hygienic systems as they influence interior space design. Pre: 271, 273, 274, 275, 276.

362 Interior Design "B": Multiple Spaces (3) I (3Lb)
Functional interior design in quantitative terms as it relates to multiple activity interior spaces. Studio labs with lectures, assigned projects on sketch problems. Pre: 361 and interior design faculty recommendation.

363 Interior Design "C": Space Complexes (3) I (3Lb)
Human factors as it relates to interior spaces containing multiple activities. Studio labs with lectures, assigned projects and sketch problems. Pre: 362 and recommendation from interior design faculty.

371 Principles of Architectural History and Theory (3) II (3L)
Emphasizes knowledge of the theory of architecture in light of architectural history through lectures, slides and individual projects. Pre: 271, 272 or equivalent.

372 Principles of Planning and Land Use (3) I (3L)
Arrangement and disposition of buildings and exterior spaces to provide appropriate and effective relationships of traffic control, natural features and climate, including relationships between architecture and urban problems. Pre: 271 or equivalent.

374 Introductory Computer Applications (3) I (2 3-hr L-Lb)

375 Design With Nature (3) I (3L)
Problems, techniques and implications of creating a nature-related built environment in man's contemporary urban and suburban settings. Special emphasis on problems of visual pollution. Pre: consent of instructor. For majors and non-majors. (Not offered 1973-74)

376 Japanese Architecture and Landscaping (3)
Review of Asian architecture and landscaping from historical to present times including shrines, temples, gardens, and domestic architecture with a study of the people, their motives and philosophies as they affect architecture. Pre: consent of instructor.
399 Directed Work (2-4 v) I, II
Pre: 333 and consent of instructor and program adviser.

400 Special Projects in Architecture (2-4 v) I or II
Intensive and specialized work at advanced level in fields of special interest of visiting staff. See announcement for current offering. May be repeated. Pre: advanced standing and consent of chairman.

401 Architectural Structures “D” (4) II

402 Architectural Structures “E” (4) I

411 Building Economics and Codes (3) I (2L, 1Lb)
Study of building codes and ordinances as they restrict and define architectural design. Pre: 312 or equivalent.

412 Working Drawings, Estimating and Specifications (3) II (2L, 1Lb)
Feasibility and programming studies of construction. Documents for current building construction practices and methods using a team approach on actual project. Pre: 411.

413 Construction Technology and Management (3) I (2 3-hr L-Lb)
Construction planning, scheduling and management. Methods and programming. Material testing and inspection. Exploration of new products and systems. (Offered Fall 1973 and alternate years)

421 Environmental Control (3) I (2L, 1Lb)

431 Architecture “D” : High Rise Housing (4) II (3Lb)
Advanced site planning and building design. Emphasizes thematic approach to relate functional requirements, human factors and the environmental setting in terms of architectural form and space. Studio labs. lectures. Assigned project. sketch problems and weekly seminar on design theory and principles. Pre: 333 and 6 credits of 488 or equivalent.

432 Architecture “E” : Community Design (4) I (3Lb)
Development of design projects in sufficient detail to include integration of structural, mechanical and electrical systems as well as building codes, economic and climatic limitations; including diagrams, presentation drawings, models, and research brochure. Intermittent sketch problems and weekly seminar on architectural design theory and principles. Pre: 431 or equivalent.

441 Strategy in Urban & Regional Design (4) II (3L)
Review of major theoretical contributions of urban and regional design to planning strategies.

442 Methods of Urban & Regional Design (4) I (3L)
Methods for descriptive, prescriptive, predictive, implemental and managerial phases of the development and design of urban and regional patterns. Pre: 441.

451 Planning Problems (3) II
Introduction of urbanism and planning through study of forces which shape the environment.

452 Planning Processes (3) I (3-hr L-Lb)
Planning as decision-making process for infra-urban and supra-urban environmental situations. Pre: 451.

453 Urban & Regional Design Studio (3) II (3-hr L-Lb)
Planning structure and function of urban and regional communities in relation to social change and technological innovation. Pre: consent of instructor. Pre: 452.

471 Environmental Psychology (3) I (3L)
Psychological aspects of problems of ecology, environment and the future. (Cross-listed as Psy 471) Pre: Psy 100.

474 Advanced Computer Applications (3) II
Preparation of software (Programma 100, Basic) for the broad field of architectural and urban/regional design. Application of existing software (stress, strudel). Development of design tables, charts for office use and publication. Future uses of computerization in the professional (computer graphics, surveys, quantitative analysis). Pre: 374.

476 Architectural Archetypes (3) II (3L)
Studies of primordial architectural imagery expressed in myths, rituals and symbols. Meanings of the entrance, cave, circle, wall, tower, opening, garden, labyrinth, directional light, fire, water, and rites of passage as they are reinforced in the design of architectural form and space. (Offered Spring 1973 and alternate years) Pre: consent of instructor.

477 Research Seminar (v) I, II
Research methodology for the qualitative development of an optimum environment for man. May be repeated.

488 Design Internship (v) I, II
Internship program providing professional experience by working with professional architects, engineers, landscape architects, planners, and interior designers on actual projects for community development. Pre: advanced standing and consent of instructor. May be repeated.

496 Field Studies (v)
Study tours to various countries to examine historical and contemporary art and architecture with lectures at various sites. May be repeated. Pre: consent of instructor. (Cross-listed as Art 496)

601 Architectural Kinetics (4) II

616 Professional Practice (3) I
Ethical and economic problems of professional practice. Pre: consent of instructor.

621 Seminar on Architecture in Developing Countries (3) I
Problems, philosophies and systems of tropical architecture from various areas of tropics and sub-tropics. Pre: consent of instructor.

640 Housing and Planning in Tropical Areas (4) II
Socio-economic and political factors in physical development, formulation and execution of building programs. Pre: consent of instructor.

645-646 Development Planning (3-3) Yr
Interdisciplinary two-semester course for students with strong interest in development. Emphasis on development planning at the regional level. (Identical to CE 645-646 and Plan 645-646) Pre: consent of instructor.

671 Advanced Environmental Psychology (3) II
Psychological aspects of problems of ecology, environment and the future. (Cross-listed as Psy 671) Pre: 471.

672 Environmental Design in Hawaii (3) II (3L)
Seminar on architectural aspects of American life, generally with contemporary emphasis. (Offered Spring 1974 and alternate years)

699 Directed Work (v) I, II
Pre: consent of instructor and program chairman.

800 Thesis Research (v) I, II
Art (Art)

Department Office: George Hall 131

Professor Emeritus: J. Halley Cox.
Associate Professors: Bushnell, Ecke, Kowalke, McVay, Preble.
Assistant Professors: Creekmore, Dunn, Everson, Junkin, Roster, Sato, Shapiro, Waite, Wisnosky, Wolfe.
Instructors: Beaver, Davidson, Gilbert.

The history of art as well as the studio programs are concerned with the creative, the experiential and the developmental aspects of art.
Except as noted, completion of introductory studio courses 113, 114, 115, 116 and 101 are the prerequisites to all studio courses numbered 200 and above. Art 101 should be taken concurrently with introductory studio courses in numerical sequence, and in pairs (113 & 114, 115 & 116).
101 is the prerequisite to all history of art courses but other appropriate preparation may be substituted with the consent of the instructor.
For all courses with prerequisites, waivers may be granted for equivalent experience.

It is the policy of the department to retain selected student works for educational purposes with the consent of the student.

101 Introduction to the Visual Arts (3) I, II Preble
Nature of visual art and its expression in various forms. Lectures, demonstrations. Offered only as CR/NC. (Cross-listed as Arch 101)

105 Elementary Studio—Ceramics (3) I, II
Studio experience mainly for non-majors. Lectures and projects. Credit cannot count towards major requirements in art.

106 Elementary Studio—Sculture (3) I, II
Studio experience mainly for non-majors. Lectures and projects. Credit cannot count towards major requirements in art.

107 Elementary Studio—Photography (3) I, II
Studio experience mainly for non-majors. Lectures and projects. Credit cannot count towards major requirements in art.

108 Elementary Studio—Drawing and Painting (3) I, II
Studio experience mainly for non-majors. Lectures and projects. Credit cannot count towards major requirements in art.

113 Introductory Studio “A” (3) I, II
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 (may be taken concurrently). Offered only as CR/NC. (Cross-listed as Arch 113)

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 involving drawing, painting, sculpture, design. Pre: 101 (may be taken concurrently). Offered only as CR/NC. (Cross-listed as Arch 114)

115 Introductory Studio “C” (3) I, II
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 (may be taken concurrently). Offered only as CR/NC. (Cross-listed as Arch 115)

116 Introductory Studio “D” (3) I, II
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 (may be taken concurrently). Offered only as CR/NC. (Cross-listed as Arch 116)

399 Directed Work (v) I, II
Pre: consent of instructor and chairman.

400 Special Projects in Art (v)
Intensive and specialized work at an advanced level in fields of special interest of visiting staff. Pre: advanced standing and consent of instructor.

699 Directed Work (v) I, II
Not more than 3 credits per semester for a total of 12 credits maximum. Pre: consent of instructor and chairman.

800 Thesis Research (v) I, II

HISTORY OF ART

270 Aspects of European and American Art (3) I, II
Major developments in arts of Europe and America.

280 Aspects of Asian Art (3) I, II
Major developments in arts of Asia.

370 Ancient Art (3) I
Arts of Mediterranean Basin, paleolithic through Egyptian. (Alt yrs, not offered 1973-74) Pre: 270.

371 Medieval Art (3) II
Arts of Europe from early Christian era to Renaissance. Pre: 270.

373 Classical Art (3) I

376 Arts of the 19th Century (3) I
Turnbull
Architecture, sculpture and painting of Europe. Pre: 270.

384 Art of Japan and Korea (3) I
Neogy

385 Early Chinese Sculpture (3) I
Ecke
Secular and religious sculpture of China from the prehistoric period to the 10th C.: bronze, jade, stone, wood and clay. Pre: 280.

391 Art of South Asia (3) I
Neogy
Characteristics of South Asian art. Cultural and historical contexts. Pre: 280.

470 Renaissance Art (3) I
Waite
Architecture, sculpture and painting of Europe during Renaissance. Pre: 270.

471 Baroque and Rococo Art (3) II
Turnbull
Architecture, sculpture and painting of Europe in Mannerist, Baroque and Rococo periods. Pre: 270.

472 American Art (3) II
Artists of North America with emphasis on 18th and 19th centuries. Pre: 270.

473 Contemporary Art (3) II
Turnbull
Arts of Europe and America. Pre: 270.

Arts of the 20th Century (3) I
Turnbull
Architecture, sculpture and painting of Europe & America. Pre: 270.

475 Arts of the Pacific (3) II
Waite
Stylistic and aesthetic characteristics of indigenous arts of Oceania, including Australia, Indonesia, Micronesia, Melanesia, Polynesia.

476 Primitive Art (3) I
Waite
Survey of styles and aesthetic characteristics of arts of preliterate cultures.

477 Primitive Arts of the Pacific Rim (3) II
Waite
Survey and comparative study of aesthetic and stylistic characteristics of prehistoric and tribal arts of areas bordering the Pacific.

478 Arts of Melanesia (3) II
Waite
Stylistic and aesthetic characteristics of the arts of New Guinea and Melanesian islands and their relationship to arts of adjoining areas. Seminar. Pre: consent of chairman and instructor.
483 Applied Arts of Japan (3) II
Archaeology, gardens, lacquer, ceramics, textile, metal work. Pre: 280.

485 Applied Arts of China (3) I
Architecture, furniture, landscaping, ceramics, metal work, lacquer, textiles. Pre: 280.

492 Comparative Aspects of Art (3) II
Comparisons in modalities of form in art. Methodological concerns: experiential, descriptive, semantic, structural, historical. Pre: 270, 280, or consent of instructor.

495 Art of Southeast Asia (3) I

496 Art and Architectural Field Studies (v)
Study tours to various countries to examine historical and contemporary art and architecture with lectures at various sites. May be repeated. Pre: consent of instructor. (Cross-listed as Arch 496)

675 Arts of Hawaii (3) I
Stylistic and aesthetic characteristics of arts of ancient Hawaii, their relationship to arts of Polynesia. Seminar. Pre: consent of chairman and instructor.

677 Tribal Arts of Indonesia and South Asia (3) I
Stylistic and aesthetic characteristics of tribal arts of India, Southeast Asia and the Indonesian area. Seminar. Pre: consent of chairman and instructor.

683 Early Chinese Painting (3) II
Ecke
From earliest times through Sung dynasty. Seminar. Pre: 385 or consent of chairman and instructor. (Alt yrs: not offered 1973-74)

686 Later Chinese Painting (3) II
Ecke
From end of Sung dynasty to present. Seminar. Pre: 385 or consent of chairman and instructor. (Alt yrs: offered 1973-74)

780 Japanese Sculpture (3) I
From earliest times through Kamakura period. Seminar. Pre: consent of chairman and instructor.

781 Japanese Painting (3) II
From earliest times through Edo period. Seminar. Pre: consent of chairman and instructor.

791 Buddhist Art of South Asia (3) I
Neogy

792 Hindu Art of South Asia (3) II
Neogy

CERAMICS

243 Ceramics A (3) I, II
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

341 Advanced Ceramics (3) I, II
McVay
Wheel throwing or hand building. Individual development. Seminars. Pre: 244. May be repeated.

342 Glaze Calculations (3) I, II
Beaver
Molecular formulae of glazes: temperature effects. Analysis of quality of glazed clay bodies. Seminars. Pre: 244. May be repeated.

401 Glass Blowing (3) I, II
Horan
Forming of glass while in a molten condition using off hand blowing and tooling techniques. Decorative techniques as applied both on the hot workable glass as well as the cooled annealed glass. Pre: 341 or 353 or consent of instructor.

402 Glass Blowing (3) I, II
Horan
Continuation of 401. The designing, construction and using of molds to blow glass in, for utilitarian and sculptural objects. Construction of glass furnaces and lehrs.

646 Ceramics (3) I
Individual problems in advanced ceramics using hand building techniques. Seminars. Pre: consent of chairman and instructor. May be repeated.

647 Ceramics (3) II
McVay
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
Horan
Individual problems in glazes and firing techniques. Seminars. Pre: consent of chairman. May be repeated.

649 Ceramics (3) II
Horan
Individual problems in clay bodies and firing techniques. Seminars. Pre: consent of chairman and instructor. May be repeated.

DRAWING

213-214 Life Drawing (3) I, II
Drawing from the model. Pre: 213 is prerequisite to 214. 214 may be repeated.

313 Advanced Drawing Studio (3) I, II
Creative projects in drawing, graphic techniques. Pre: 213 and 214. May be repeated.

PAINTING

220 Materials and Techniques (3) I, II
Gilbert
Painting studio with emphasis on materials and techniques.

222 Painting “A” (3) I, II
Painting from studio and outdoor subject matter. Elements of pictorial style.

224 Painting “B” (3) I, II
Painting from identifiable sources: emphasis on expression and structure. Oil and related media. Pre: 223.

225 Painting “C” (3) II
Emphasis on water-soluble media, including contemporary developments. Pre: 220.

320 Brush Art of the Far East (3) II
Ecke
Studio course in historical development of brush technique in the art of painting and calligraphy in classical tradition. Pre: consent of instructor.

323 Advanced Painting (3) I, II
Development of independent expression with considerable freedom of choice. Seminars. Pre: 224 or 225. May be repeated.

624 Painting (3) I, II
Individual problems in advanced painting. Seminars. Pre: consent of chairman and instructor. May be repeated.

PRINTMAKING

215 Printmaking—Intaglio (3) I, II
Kowalke
Basic intaglio techniques of printmaking, including etching, engraving, drypoint, aquatint, plus perceptual and conceptual exercises in composition and pictorial structure.

216 Printmaking—Lithography (3) I, II
Davidson
Technical controls: development of concepts appropriate to lithography.

315 Advanced Printmaking—Intaglio (3) I, II
Kowalke
Advanced intaglio techniques of printmaking, including etching, engraving, drypoint, and aquatint plus complex two and three dimensional projects in composition and pictorial structure. Pre: 215. May be repeated.

316 Advanced Printmaking—Lithography (3) I, II
Davidson
Advanced studio practice in independent projects related to lithography. Pre: 216. May be repeated.
617 Printmaking (3) I, II
Kowalke
Individual problems in intaglio, relief and planographic processes. Seminars. Pre: consent of chairman and instructor. May be repeated.

SCULPTURE

253 Sculpture (3) I, II
Roster, Sato
Study of form and structure, using variety of materials and techniques. Seminars.

254 Intermediate Sculpture A (3) I, II
Roster
Developing concepts of form and form relationships using a variety of materials with an emphasis on carving and casting. Seminars. Pre: 253.

255 Intermediate Sculpture B (3) I, II
Roster
Developing concepts of form and form relationships using a variety of materials with an emphasis on the additive process. Seminars. Pre: 253.

353 Advanced Sculpture (3) I, II
Sato
Individual projects stressing experimentation and subjective approach to form. Seminars. Pre: 254, 255. May be repeated.

653 Graduate Sculpture (v) I, II
Sato
Pre: consent of chairman and instructor.

TEXTILE DESIGN

230 Textile Design (3) I, II
Everson

330 Advanced Textile Design (3) I, II
Everson

630 Textile Design (3) I, II
Everson
Individual problems in areas of specific interest within textile field. Seminars. Pre: consent of chairman and instructor. May be repeated.

VISUAL DESIGN

207 Photography A (3) I, II
Creekmore, Shapiro
Camera as tool of expression and photography as basic art form. Student required to have own camera.

208 Photography B (3) I, II
Shapiro
Development of form in photography. Pre: 207.

209 Basic Cinematography (3) I, II
Shapiro
Introduction to 8 and 16 mm film production. Pre: basic still photography experience. Students supply own cameras.

265 Advanced Visual Design (3) I, II
Everson
Investigation into processes of visualization, its expression and control. Seminars. May be repeated.

266 Advanced Visual Design (3) I, II
Everson
Design and communication. Projects closely bound to idiom and problems of our time; systems, grid, module, computer, symbol. May be repeated. Pre: 265.

309 Intermediate Cinematography (3) I, II
Shapiro
Individual projects in film production. Developing a personal language and technique of film. Pre: 207 or equivalent knowledge and 209.

361 Letter Forms (3) I
Creekmore
Design and communication. The letter as visual symbol and element in design organization. Pre: 266.

362 Typography (3) II
Creekmore

407 Advanced Photography (3) I, II
Shapiro
Individual projects in advanced photography. Seminars. Pre: 208. May be repeated.

463-464 Visual Communication (3-3) Yr
Creekmore
Experimental problems of visual design which communicate creation of new images and symbols. Pre: consent of chairman and instructor.

665 Advanced Typography (3) I
Anderson, Kingrey
Individual problems in typography. Seminars. Pre: consent of chairman and instructor. May be repeated.

773-774 Visual Design Research (v) Yr
Anderson, Kingrey
Advanced design and communication. Emphasis on problem-solving incorporating research. Seminars. Pre: consent of chairman and instructor. May be repeated.

WEAVING

238 Weaving (3) I, II
Robinson
Creative processes of weaving. Warping and threading of simple hand looms and multiple harness looms. Seminars.

239 Weaving (3) I, II
Robinson

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.

638-639 Weaving (3-3) Yr
Robinson
Individual problems in advanced weaving. Seminars. Pre: consent of chairman and instructor. May be repeated.

Asian Studies (Asian)

Department Office: Moore Hall 315

Faculty from the departments of: anthropology, art, drama and theatre, East-Asian languages, East-Asian literature, economics, geography, history, Indo-Pacific languages, linguistics, music, philosophy, political science, religion, sociology.

241-242 Civilizations of Asia (3-3) Yr

Historical survey of major civilizations of Asia from earliest times to present, including East Asia, Southeast Asia and South Asia. (Cross-listed as Hist 241-242)

310 Asian Humanities (3) I

Inquiries through the colloquium and occasional lectures into Asian works of imagination, faith, and enduring value. Pre: 241-242 or equivalent.

312 Contemporary Asian Civilizations: Problems and Topics (3) II

Examination by means of problems and topics into modern and contemporary experiences of Asian societies. A multidisciplinary approach encompassing the social sciences. Pre: 241-242 or equivalent. May be repeated for credit.

499 Directed Reading (v) I, II
Pre: consent of instructor.

601 Contemporary Chinese Studies Seminar (3) I, II

Readings and research into selected aspects of modern and contemporary China. Research paper required. Pre: Hist 409-410 or equivalent. (Cross-listed as Hist 725-726)

603 Contemporary Japanese Studies Seminar (3) I, II

Critical examination and study of selected aspects of modern and contemporary Japan. Research paper required. Pre: Hist 413-414 or equivalent.

605 Contemporary Korean Studies Seminar (3) I, II

Critical examination and study of selected aspects of modern and contemporary Korea. Pre: Hist 418 or equivalent.

750 Seminar in Asian Studies (3) I, II

(1) East Asia I, II. (2) Southeast Asia I, II. (3) South Asia II.

799 Directed Research (v) I, II
Individual problems and research. Pre: consent of instructor.

800 Thesis Research (v) I, II
Biological Sciences

Biology (Biol)

Program Office: Snyder Hall 113
A program offered by the departments of botany, microbiology and zoology.

Professor: Townsley.
Associate Professors: B. Z. Siegel. C. W. Smith.

220 Biology (5) I (3L, 2Lb) B. Siegel, Smith, Townsley Fundamentals of biology. Devoted to study of microorganisms, lower and higher plants and animals with emphasis on their comparative physiology, development, behavior, evolution, systematics. Prereq: concurrent registration or completion of Chem 243, 245 and Math 203.

250 Biology (4) II (3L, 1Lb) B. Siegel
Cell structure and function. Patterns and operation of biological organization through which molecules, organelles, cells and tissues give living organisms their basic properties. Prereq: 220 or consent of instructor and concurrent registration or completion of Chem 244, 246.

310 Symbiosis (2) I (2L) Smith, Townsley Relationship between organisms in symbiotic association emphasizing physiological and biochemical interactions. Evolution of each symbiotic association discussed in terms of its adaptive significance. Prereq: 250.

313 Patho-biology of Air Pollution (4) II (4L) Dickenson, Patil, S. Siegel Meteorology, sources and nature of air pollutants, bioeconomics, etiology and symptomatology. factors governing air pollution injury to organisms, resistance and protection. Public health and demographic aspects. Prereq: 220 and 250 or equivalent or consent of instructor.

401 Molecular Basis of Cell Function (2) II (2L) 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. Prereq: 250. Chem 243-246 or consent of instructor.


440 Environmental and Space Biology I (2) I (2L) 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. Prereq: 220 and 250 or equivalent; Chem 243-246; and consent of instructor. (Not offered 1973-74)

499 Biological Problems (v) I, II Directed reading and research. Limited to senior majors in biology (B.A. and B.S.) with 2.7 grade-point ratio or 3.0 in biology courses. For seniors whose research interests are not served by Micro 499, Zool 499, or Bot 399. Prereq: senior status.

Botany (Bot)

Department Office: St. John Lab 101

Professors: Cooit, Doty, Friend, Kefford, Lamoureux, Mueller-Dombois, S. Siegel.
Associate Professors: Putman, C. Smith, Theobald.
Instructor: Gay.
Lecturers: Hirano, Nagata.

101 General Botany (4) I, II (3L, 1Lb) Gay, Kefford Growth, functions and evolution of plants; their relations to the environment and particularly to man and his activities. Designed for non-science majors: with permission of instructor, students with previous biological training may proceed to higher level course.

105 Ethnobotany (3) I Theobald Plants and their influence upon culture of Hawaii and Pacific; uses of cultivated and wild plants.

130 Plants in the Hawaiian Environment (4) II (3L, 1Lb) Theobald Introduction to plant communities and species of the Hawaiian Islands and their interactions with man and the Hawaiian environment. Laboratory will stress field observations of the native and introduced flora and the basic principles of identification and classification.

160 Identification of Tropical Plants (2) II Nagata Non-technical course in identification of common plants of tropics. Not open to students who have had 461, not credited for botany major.

201 The Plant Kingdom (4) II (2L, 2Lb) Siegel, Smith Comparative studies of structure and physiology of plants with reference to distribution and classification. Prereq: 101 or Biol 220.

399 Botanical Problems (v) I, II 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 (2L, 1Lb) Lamoureux Structure of vascular plants: origin and differentiation of tissues; relation of structure to function. Prereq: 201 or equivalent. Recommended: 470.

412 Microtechnique (3) I, II (2L, 1Lb) Lamoureux Preparation of plant materials for histological and cytological study, photomicrography. Prereq: 410 or consent of instructor.

421 Developmental Biology (3) II (3L) Analysis of the development of organisms emphasizing the cellular role in organization. Animal and plant systems compared and contrasted. Identical with Biol 421, Micro 421, Zool 421. (Not offered 1973-74)

430 Mycology (3) II (2L, 2Lb) Morphology, physiology, ecology of fungi: their identification. Prereq: 201 or Biol 220 or consent of instructor.

436 Medical Mycology (3) I (2L, 2Lb) Diagnostic morphology and physiology of fungi pathogenic to man. Prereq: 430 or Micro 351, or consent of instructor. (Alt yrs: offered 1973-74)

450 Natural History of the Hawaiian Islands (2) II (2L-Lb) Kay, Lamoureux Geography, geology, climatology, biotic environment of Pacific Basin and Hawaiian Islands: evolution of terrestrial biota of oceanic islands. Prereq: one semester of biological science at college level. Identical with Zool 450.


461 Systematics of Vascular Plants (4) I (2L, 2Lb) Theobald Principles of plant evolution, diversity, structure, and classification. Laboratory emphasizes plant identification and circumscription of plant families. Prereq: 101 or Biol 220 or consent of instructor.

470 Principles of Plant Physiology (4) II (3L, 1Lb) Friend Introduction to plant physiology. Prereq: 201 or Biol 220, Chem 114, 116, Phys 151, or equivalents with consent of instructor.

480 Phycology (3) II (1L, 2Lb) Doty Morphology, taxonomy, ecology of algae. Identification of common algae. Prereq: 101 or Biol 220 or Zool 101 or Micro 351.
610 Botanical Seminar (1) I, II
Study and discussion of significant topics and problems in botany.

612 Advanced Botanical Problems (v) I, II
Investigation of any botanical problem; reading and laboratory work. Pre: consent of instructor. May be repeated.

615 Morphology Seminar (2) II
Recent developments in morphology, anatomy, cytology. Pre: consent of instructor.

618 Cytology (3) II (2L, 1Lb)
Structure and function of cell components. Pre: Biol 250 or equivalent or consent of instructor. (Alt yrs; not offered 1973-74)

619 Seminar in Biology Teaching (1) I, II
Staff
Consideration of effective teaching methods, including organization of courses, preparation of lectures, development of laboratory exercises, development and evaluation of examinations. Open to doctoral candidates in the biological sciences.

631 Marine Phytoplankton (3) I (2L, 1Lb)
Identification, systematic morphology, autecology, distribution and abundance. Pre: graduate standing or permission of instructor.

637 Physiology of Fungi (4) I (2L, 2Lb)
Patil
Comprehensive investigations of fungal physiology based on lectures, discussions, and individual laboratory projects, covering metabolic processes related to growth and reproduction of fungi. Pre: 430 or Micro 431 or AgBio 402-403 or consent of instructor. (Identical with PPath 637) (Alt yrs; not offered 1973-74)

640 Environmental and Space Biology (v) I, II
S. Siegel
Orientation towards experimentation with biological systems in extreme environments and individual investigations with such systems. Pre: graduate standing and consent of instructor.

650 Ecology Seminar (1) II
Mueller-Dombois
Literature reviews of concepts and methods in physiological and vegetation ecology. Pre: graduate standing, or well-prepared undergraduates with consent of instructor. May be repeated.

651 Dynamics of Marine Productivity (3) II (2L, 1Lb)
Staff
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.

662 Advanced Taxonomy (4) II (2L, 2Lb)
Theobald
Principles of plant speciation and biosystematics with emphasis on modern techniques for gathering data. Pre: consent of instructor. (Alt yrs; offered 1973-74)

665 Nomenclature Seminar (2) II
Doty

670 Plant Nutrition and Water Relations (3) I (3L)
Cool
Plants in relation to water and nutrient elements; absorption and translocation of water and solutes in plants. Pre: 470, Chem 244, Phys 152.

671 Energetics and Biosynthesis in the Plant Kingdom (3) II (3L)
S. Siegel
Comparative and synthetic aspects of natural products in plant kingdom, their distribution, bioenergetic relationships and metabolism. Pre: Chem 244, Biol 250 or equivalent. (Alt yrs; offered 1973-74)

672 Techniques in Physiology (2) I (2Lb)
Putman
Nutrient absorption and composition; osmotic relations. Pre: 470, Chem 244, Phys 151, consent of instructor.

673 Techniques in Physiology-Biochemistry (2) I (2Lb)
Putman
Determining substances of physiological significance in plant materials. Pre: 672, consent of instructor.

675 Physiology Seminar (1) I, II
Significant topics and problems in physiology. May be repeated. Pre: consent of instructor.

681 Phycology—Chlorophyta (2) II (2Lb)
Doty
Systematics, functions and utilization considered at advanced level. Pre: consent of instructor. (Alt yrs; offered 1973-74)

682 Phycology—Rhodophyta (2) II (2Lb)
Doty
Systematics, functions and utilization considered at advanced level. Pre: consent of instructor. (Alt yrs; not offered 1973-74)

683 Phycology—Xylophyta and Phaeophyta (2) II (2Lb)
Doty
Systematics, functions and utilization considered at advanced level. Pre: consent of instructor. (Alt yrs; not offered 1973-74)

684 Phycology—Rhodophyta (2) I (2Lb)
Doty
Systematics, functions and utilization considered at advanced level. Pre: consent of instructor. (Alt yrs; offered 1973-74)

699 Directed Research (v) I, II
Pre: candidacy for M.S. degree; consent of instructor.

799 Directed Research (v) I, II
Pre: candidacy for Ph.D. degree; consent of instructor.

800 Thesis Research (v) I, II

**Microbiology (Micro)**

**Department Office:** Snyder Hall 207

**Professors:** Benedict, Berger, Contois, Folsome, Gundersen, Herzbeg, Loh.

**Associate Professors:** Allen, Hall, Siegel.

**Assistant Professors:** Adams, Baumann.

130 General Microbiology

Berger, Folsome, Gundersen, Hall, Loh

Fundamentals of microbiology. The role of microorganisms and how they affect man and his possessions. Discussion groups optional. Not open to those who have credit in 351. Multiple sections, each with a different emphasis, as follows: (1) Survey of microbiology with emphasis on broad aspects of biochemistry, genetics, physiology, exobiology and origin of life. (2) Medical and public health aspects, bacterial and viral diseases, epidemiology. (3) Ecology with emphasis on the microbiology of soils and water; environment and pollution; industrial microbiology.

140 Microbiology Laboratory (1) I, II (1Lb)

Hall, Loh
Primarily for students in nursing and dental hygiene. Pre: credit or registration in 130; Chem 113-115.

351 Procaryotic Biology (4) I, II (3L, 2Lb)

Adams, Baumann

Study of bacteria: their anatomy, chemistry, physiology and development, their roles in natural processes. Pre: Biol 220, Chem 241-242 or 244; or consent of instructor; Math 205 desirable.

397 Microbial Physiology (3) I (3L)

Berger

Metabolic and physiological diversity among the microorganisms. Energy-yielding mechanisms, patterns of cell regulation, special cellular functions and activities; the effect of the environment on growth processes. Designed to meet a “physiology” requirement of the biology major. Pre: Biol 250 and 1 semester of biochemistry. Not open to microbiology majors.

421 Developmental Biology (3) II (3L)

J. Arnold, Staff

Analysis of the development of organisms emphasizing the cellular role in organization. Animal and plant systems are compared and contrasted. Pre: Biol 250 and one yr organic chemistry.

431 Microbial Biochemistry and Function (4) I (3L, 2Lb)

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; general biochemistry; or consent of instructor.

441 Ultrastructure of Microorganisms (3) I (3L)

Allen

Cellular structures, both common and specialized, of the lower eucaryotes and procaryotes; correlating macromolecular structure with cell functions. Pre: Biol 250 and Chem 243-244 or consent of instructor.

451 Biology of Bacteria (4) II (3L, 3Lb)

Baumann

Detailed consideration of the cultivation, physiology, structure and taxonomy of the main groups of bacteria. Methods of isolation by enrichment culture. Pre: 351, 431; biochemistry desirable.
461 Immunology (3) I (3L) Benedict Structure and biological actions of antigens and antibodies; fundamentals of antibody production. Pre: 351, Math 205; concurrent registration in 462 or consent of instructor: Biochem 441 or Ag Biol 402 desirable.

462 Immunology Laboratory (1) (2Lb) Benedict Basic exercises and experiments in immunology. immunochemistry, and immunobiology to illustrate principles of 461. Pre: 351, Math 205; concurrent registration in 461 or consent of instructor: Biochem 441 or AgBio 402 desirable.

463 Microbiology of the Pathogens (4) II (3L, 2Lb) Herzberg Host-parasite relationships in microbial diseases of man and animals. Characteristics of bacterial pathogens. Basic techniques of isolation, identification, diagnosis. Pre: 351, 461, 462.

475 Microbial Genetics (4) I (2L, 2Lb) Folsome Genetic analysis and molecular basis of transmission, replication, mutation, segregation, expression of heritable characteristics in procaryotes and unicellular eucaryotes. Pre: 351. consent of instructor; Math 206.

480 Microbial Ecology (4) I (2L, 2Lb) Gundersen Interactions between microorganisms and between microorganisms and other organisms in nature. Pre: 351 or consent of instructor.

490 Virology (4) II (2L, 2Lb) Loh Basic concepts of animal virology involving comparative consideration of physical, chemical, and biological properties of representative animal viruses. Laboratory: emphasis on the use of animal tissue culture systems. Pre: 351. 461: Bioch 441: or consent of instructor.

499 Microbiological Problems (v) I, II Staff Directed reading and research. Limited to senior majors with 2.7 grade-point ratio, or 3.0 in microbiology.

625 Immunoc hemistry (3) II (3L) Benedict Detailed reports and discussions on selected advanced topics and current research literature in immunoch emistry. Pre: 461: Bioch 601: or consent of instructor. (Alt yrs: offered 1973-74)

632 Advanced Microbial Physiology (3) II (3L) Berger Selected topics. Pre: 431 or consent of instructor. (Alt yrs: offered 1974-75)

642 Marine Microbiology (3) II (3L) Gundersen Microbial activities in sea: ecology and physiology of marine microorganisms. Pre: 480: Ocean 620 or 623: or consent of instructor. (Alt yrs: offered 1973-74)

655 Virology (3) I (3L) Loh Detailed reports and discussions on selected advanced topics and current research literature in virology. Pre: 463. 490: Bioch 441 or 601: and consent of instructor. (Alt yrs: offered 1973-74)

665 Electron Microscopy (2) II (2Lb) Allen Introduction to use of electron microscope and preparative techniques. Pre: 441 and consent of instructor.

671 Microbial Genetics (3) II (3L) 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 1973-74)

675 Exobiology (3) II (3L) Folsome Advanced introduction to literature dealing with detection of extraterrestrial life, basic organic chemistry pertinent to origin-of-life problem, and the construction of exotic ecological systems. Pre: Chem 351, Bio 440. (Alt yrs: offered 1974-75)

681 Host-Parasite Relationships (3) I (3L) 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 1973-74)

690 Seminar (1) I, II Allen, Gundersen Significant topics in microbiology. Required of graduate students. May be repeated.

699 Directed Research (v) I, II Staff Selected problems in microbiology. Pre: consent of instructor.

795 Special Topics in Microbiology (v) I, II Staff Selected topics in any aspect of microbiology. May be repeated.

800 Thesis Research (v) Staff

Zoology (Zool)

Department Office: Edmondson Hall 152

Senior Professor: Tester.


Associate Professors: Reed, Stevens.


101 Principles of Zoology (4) I, II (3L, 1Lb) Reed Introduction to zoology. Living animals, their structure, physiology, development, reproduction, evolution, habits, ecology. and their relationship to other living organisms and the environment. Pre: none.

230 Survey of Ecology (2) I, II Kinzie, Reese, Stimson Distribution and abundance of organisms discussed in relation to physical, physiological, population and community characteristics. Intended for students from fields other than biological sciences. No credit in 230 if student has taken 439. Pre: none. Recommended: introductory course in botany, biology, or zoology.

306 Ethology (2) II (2L) Losey, Popper, Reese Introduction to the study of animal behavior with emphasis on ethological concepts. Behavioral physiology, development and ecology are discussed. Lecture may be taken without lab.

307 Ethology Lab (1) II (1 3-hr Lb) Losey, Popper, Reese Demonstration of basic concepts in animal behavior presented in lecture portion. 306. Pre: concurrent registration in 306.

310 Invertebrate Zoology (3) I, II (2L, 1Lb) Banner, Bailey Morphology. evolution. systematics, ecology, life history of invertebrate phyla. Pre: 101 or Bio 220. No credit for students who have taken 411 or 412.

320 Vertebrate Zoology (4) I, II (2L, 2Lb) Berger, Popper Classification, evolution, and comparative functional anatomy of vertebrates. Pre: concurrent registration or completion of 101 or Bio 220.

340 Parasitology (3) II (2L, 2Lb) van Weel Parasitology with reference to man and domestic animals; classification, comparative morphology, life history, control.

411 Zoology of the Lower Invertebrates (4) I Brock, Hadfield Intensive investigation of form and function in the lower invertebrate animals, excluding the protozoa, and including the echinodermata. Designed to give the professionally-oriented student a thorough understanding of the potential for and current use of these invertebrates in modern research. General life cycles but no detailed helminth parasitism. Pre: Bio 220 or Zool 101 and 1 year of general chemistry (Chem 113-114).

412 Zoology of the Higher Invertebrates (4) II Brock, Hadfield Intensive investigation of form and function in the higher invertebrate animals, including the annelids, mollusks. and arthropods. Designed to give the professionally-oriented student a thorough understanding of the potential for and current use of these invertebrates in modern research and of readily available materials in the Hawaiian fauna. Pre: Bio 220 or Zool 101 and 1 year of general chemistry (Chem 113-114).

416 Histology (3) I (2L, 2Lb) van Weel Studies of tissues, principles of histology, and microscopic anatomy of a limited number of vertebrates. Pre: 320 or completion or concurrent registration in 420.

417 Microtechnique (3) I (2L-Lb) van Weel Fixing, staining, mounting of tissues, entire animals and organs.
420 Embryology (4) I, II (3L, 1Lb) Haley
Experimental procedures employed to analyze developmental phenomena in animals. Although all levels of organization are considered, the major approach is organismal, with animal heredity as the unifying principle. Pre: 101 or Biol 220.

421 Developmental Biology (3) II (3L)
Analysis of development of organisms emphasizing the cellular role in organization. Animal and plant systems compared and contrasted. Pre: one year of organic chemistry and Biol 220. (Cross-listed as Biol 421 and Micro 421)

430 Animal Physiology (4) II (2L, 2Lb) Cooke, Stevens
Introduction to functions of tissues and organ systems of vertebrates.

435 Endocrinology (2) I Kamemoto
Anatomy and physiology of the organs of internal secretion, role of hormones in metabolism and development. Pre: 1 course in biological sciences.

439 Animal Ecology (3) II (3L) Kinzie, Stimson
Comprehensive course in ecology designed for students of the biological sciences. Course designed around principles and theories illustrated with examples from current experimental and analytical literature of ecology. Pre: 101 or Biol 220 and one semester of calculus.

440 Laboratory in Animal Ecology (1) II (3Lb) Kinzie, Stimson
Laboratory in ecology to introduce some of the methodology of ecology and to provide experience in characterizing populations and communities. Pre: credit or concurrent enrollment in 439.

441 History of Zoology (2) II Banner
Development of zoological science as specialized field of human knowledge. Pre: 101, Biol 220, or consent of instructor.

450 Natural History of Hawaiian Islands (2) II (2L-Lb) Kay, Lamoureux
Geography, geology, climatology, biotic environment of Pacific Basin and Hawaiian Islands; evolution of terrestrial biota of oceanic islands. Pre: one semester of biological science at college level.

460 Avian Biology (3) II (2L, 1Lb) Berger
Introduction to anatomy, physiology, annual cycle, behavior, distribution, taxonomy of birds; special attention given to Hawaiian and oceanic birds. Pre: 101 or Biol 220.

466 General Ichthyology (3) I Losey
Anatomy, physiology, ecology, distribution. Pre: 101 or Biol 220.

470 Limnology (3) II (2L-Lb) Maciolek
Biology, physics, chemistry of lakes, streams, estuaries, including field and laboratory techniques. Pre: 310, 330, or consent of instructor. (Alt yrs; offered 1973-74)

480 Animal Evolution (3) II Popper and Stevens
Processes of evolution; interaction between population genetics and natural selection in animals. Desirable preparation: Genetics 451.

485 Biogeography (3) II Distribution of plants and animals studied in light of the factors that determine the distributions we see today and the processes that caused, maintain and modify these distributions. Approach will be synthetic and dynamic rather than descriptive and static. Pre: 101 and Bot 101 or 201 or Biol 220. Suggested: credit or concurrent enrollment in 439 and 480. (Alt yrs; not offered 1973-74)

490 General Zoology Seminar (1) I, II Staff
Reports on research or reviews of literature. Required of students majoring in zoology or entomology.

497 General and Comparative Physiology (3) I General physical-chemical, molecular, and membrane mechanisms underlying physiological processes, their organization into organ systems, and variations observed in various animal groups, especially invertebrates. 432 taken with 433 will satisfy the biology program and zoology departmental requirement for physiology. Pre: one course in biological sciences, 5 credits of chemistry, Math 205 or equivalent.

498 Comparative Physiology Laboratory (2) I Experiments, projects, and demonstrations in comparative physiology. Pre: 497 previously or concurrently.

499 Directed Reading or Research (1) I, II Staff
Limited to senior majors with 2.7 grade-point ratio or 3.0 grade-point ratio in zoology.

604 Comparative Endocrinology (3) II (3Lb) Kamemoto
Laboratory in biology of hormonal mechanisms, with emphasis on invertebrates and lower vertebrates. Pre: 435 or consent of instructor.

605 Comparative Endocrinology Laboratory (1) II (3Lb) Kamemoto
Laboratory in biology of hormonal mechanisms, with emphasis on invertebrates and lower vertebrates. Pre: concurrent registration in 604.

606 Principles of Animal Behavior (2) I (2L) Losey, Popper, Reese
Basic concepts and theories of animal behavior. Methods and ideas of various schools of thought are emphasized. Lecture may be taken without lab. Pre: graduate standing.

607 Principles of Animal Behavior Laboratory (1) I (1 3-hr Lb) Losey, Popper, Reese
Lab will demonstrate basic concepts and theories of animal behavior as covered in lecture, 606. Pre: concurrent registration in 606.

608 Growth and Form (4) II (2L, 2Lb) Haley
Analysis of normal growth patterns. Regulating mechanisms of normal growth, differentiation and influence of environmental factors.

609 Biology of Symbiosis (3) II (2L, 1 3-hr Lb) Losey
Behavioral, physiological, and ecological relationships between species, including mimicry, commensalism, mutualism, parasitism and predation discussed, with emphasis on adaptive value and behavioral interactions. Pre: undergraduate major, with permission of instructor, or graduate standing.

610 Topics in Developmental Biology (v) I, II Staff
Discussion and survey of literature pertaining to specific topics in developmental biology.

619 Seminar in Teaching (1) I, II Consideration of effective teaching methods, including organization of courses, preparation of lectures, development of laboratory exercises, development and evaluation of examinations. Open to doctoral candidates in the biological sciences. (Same as Bot 619)

620 Marine Ecology (3) II (2L, 2Lb) Kinzie
Principles of ecology discussed in relation to marine biota and environment. Pre: undergraduate major, consent of instructor, or graduate standing in zoology, oceanography, or botany.

622 Isotopic Tracers in Biology (3) II (2L, 1Lb) Townsley
Chemical and physical features of radioactive isotopes used in biological work. Methods of detection; application to biological systems.

631 Biometry (3) I (2L-Lb) Tester
Elementary statistical methods; confidence interval, chi-square, t-test, normal distributions, regression, correlation. Pre: Math 134.

632 Advanced Biometry (3) II (2L-Lb) Tester
Analysis of variance and covariance, curvilinear regression, multiple correlation, design of experiments. Pre: 631.

642 Cellular Neurophysiology (3) II (2L-2Lb) Cooke
Biophysical and membrane mechanisms of conduction, synaptic transmission, and other electrical responses of nervous cells, the significance of specializations of function and form of neurons to their integrative role. Discussion of special topics which will vary from year to year. Pre: one 300 or higher level course in biological sciences, 5 credits of chemistry, Math 205 or equivalent and consent of instructor.

666 Advanced Ichthyology (3) II Staff
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 (v) I, II Staff Directed research and reading in various fields of zoology.

702 Preparation of Scientific Manuscripts (1) I Berger Use of bibliographical tools; styles and methods of preparation for publication. Required of all students for Ph.D. degree in zoology or entomology.

714 Topics in Animal Behavior (v) I, II Staff Lecture-discussion of selected topics in the behavior of animals. Pre: permission of instructor.

715 Topics in Invertebrate Zoology (3) I, II (2L, 2Lb) 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 physiological ecology, electrophysiology, or neurophysiology. Basic concepts and measurements of function at the organismic or cellular level in animals.

800 Thesis Research (v) I, II

---

Chemistry (Chem)

Department Office: Bilger Hall 118


Associate Professors: Andermann, Gilje, Hubbard, Mann, McDonald, Moore, Schaleger, Seff.

Assistant Professors: Bopp, Buddemeier, Cramer, Fadley, Muenow.

100 Chemistry and Man (3) II (3L) Schaleger Non-mathematical introduction to chemistry. Basic concepts and their relationship to the modern world. Not open to those with previous college chemistry.

101 Chemistry and Man Laboratory (1) I, II (1Lb) Schaleger Experiments in everyday chemistry. Pre: credit or registration in 100.

113-114 General Chemistry (3-3) Yr (3L) Zeitlin, Gilje, Seff, Muenow Fundamental laws, principles, methods. Pre: high school algebra and plane geometry.

115 General Chemistry Laboratory (1) I, II (1Lb) Zeitlin, Staff Experiments illustrating fundamental principles of chemistry. Pre: credit or registration in 113.

116 General Chemistry Laboratory (1) II (1Lb) Zeitlin, Staff Continuation of 115. Pre: 115, credit or registration in 114.

117 Principles of Chemistry (4) I, II (4L) Bopp, Fadley, Naughton Principles, theories, elementary analytical methods. Pre: high school chemistry, credit or registration in 118, and Math 205.

118 Principles of Chemistry Laboratory (1) I, II (1Lb) McDonald Principles, techniques, elementary analytical methods. Pre: credit or registration in 117.

133 Elementary Quantitative Analysis (2) I, II (2L) Naughton, Pecsok Beginning gravimetric and volumetric analysis. Pre: 114, 116 or 117, 118.

134 Elementary Quantitative Analysis Laboratory (2) I, II (2Lb) Naughton, Pecsok Gravimetric and volumetric analysis. Pre: credit or registration in 133.

241 Survey of Organic Chemistry (3) I (3L) Kiefer 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) I (1Lb) Liu, Schaleger Techniques of preparation, purification, identification of organic compounds. Pre: 116 or 118 and credit or registration in 241.

243-244 Organic Chemistry (3-3) Yr (3L) Kiefer, Liu 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.


246 Organic Chemistry Laboratory (1) II (1 4-hr Lb) Liu, Schaleger Continuation of 245. Pre: 245. credit or registration in 244.

333 Intermediate Quantitative Analysis (4) I (2L, 2Lb) Hubbard Introductory instrumental analysis. Pre: 134. credit or registration in 351.


353 Physico-Chemical Measurements (2) II (2 Lb) Waugh Modern laboratory techniques. Pre: 333, GE 251 or GE 253, credit or registration in 352.

399 Directed Reading or Research (v) I, II Staff Limited to majors with 2.7 grade-point ratio or 3.0 grade-point in chemistry. May be repeated.

422 Intermediate Inorganic Chemistry (3) I Cramer Classification description. fundamental theory. Pre: credit or registration in 352.

444 Qualitative Organic Analysis (4) II (2L, 2Lb) Scheuer Identification and characterization of organic compounds and mixtures. Pre: 134, 246, credit or registration in 351.

445 Intermediate Organic Chemistry (3) II (3L) Larson Reactions and reaction mechanisms. Pre: 244.


602 Chemical Applications of Spectroscopy (3) II Bopp, Inskeep Introduction to magnetic resonance, infrared, uv and visible spectroscopy, emphasizing applications to organic and inorganic chemistry. Pre: 601.

603 Structure and Reaction Mechanisms (3) I Gilje, Schaleger Stereochemistry of organic and inorganic compounds. Theories of acid-base interactions. Chemical kinetics and the determination of organic and inorganic reaction mechanisms. Pre: 244, 422.

622 Advanced Inorganic Chemistry I (3) II Gilje Mechanisms of various dynamic processes occurring in inorganic compounds are discussed using examples drawn from the current literature. Pre: 352, 422.

Communication (Comun)

Program Office: George Hall 313
Professors: Bystrom, Dykstra, Ellingsworth, Heinberg, Rider.
Associate Professors: Byers, Harms, Sanderson, Welden.
Assistant Professors: Kunimoto, Rosario, Weller.
Instructors: Bond, Virta, Warner.

145 Interpersonal Communication (3) I, II
Introduction to communication strategies and outcomes through participation in interpersonal communication activities.

200 Introduction to Theories of Communication (3) I, II
Welden, Kunimoto
Introduction to theory through a study of various models of the communication process. Involvement in dyadic and small group interaction to enhance knowledge of concepts.

201 Message Development (3) I, II
Sanderson, Bond
Provides practice (1) in development of messages with specific outcomes and goals; (2) in utilization and management of media in message development; (3) in methods for evaluating and analyzing communication outcomes. Pre: 200 or concurrent enrollment.

221 Communication Contexts for Creative Learning (3) I, II
Byers, Kunimoto

261 Broadcasting (3) I
Bond, Rider
Analysis and survey of radio and television as communications media. Attention to the interrelations of press, radio-TV, and film.

263 Broadcast Laboratory (3) I, II
King
Introduction to equipment and operation of radio and television studios, and roles of members of the production team. Basic production techniques. (R) Radio production; (T) Television production; (P) Performance.

304 Communication Characteristics of the Source (3) I, II
Heinberg
Analysis of two-person communication systems by designing and evaluating communication games. Pre: 145 or 200.

305 Language and Meaning in Communication (3) I, II
Dykstra
Language and meaning and their relationship to purposes and outcomes in communication systems. Pre: 200 or concurrent registration.

365 Writing of Broadcast Messages (3) I
Bond

366 Methods in Broadcast News (3) II
Bond
Comparative study of print and the broadcast media as purveyors of news; strategies and techniques available to the broadcaster in selection, editing, and presentation of news.

367 Management of Broadcast Stations (3) II
Berger
Detailed study of functions, duties, and problems of the management team of broadcast stations and the strategies available to them in solving problems.

384 Communication Among Cultural Groups (3) I, II
Harms, Kunimoto, Rosario
Survey of social-psychological and cultural variables which affect communication among peoples of different cultures. Use of this knowledge in understanding and facilitating social and cultural change. Pre: Majors—200 and 201; Nonmajors—social science background.

390 Organizational and Administrative Communication (3) I, II
Sanderson
Analysis of organizational communication theories, organizational structure and communication networks with special emphasis on task-oriented administrative communication problems. Pre: 200.
397 Communication and the Future (3) I, II
Harms
Human communication as a means to shape and guide the future.
Major world trends and probable breakthroughs. Interaction between
global transportation and telecommunications networks. New
technologies and human capacities. Freedom and control.
The alternative futures of man as communicator.

399 Broadcasting Workshop (3) II
Silvan
Advanced study of an experience in the preparation and presenta-
tion of broadcast programs. Same sub-sections as 263. (R) Radio;
(T) Television; (P) Performance. Pre: 263 under appropriate sub-
heading.

406 Evaluation of Communication (3) I, II
Byers, Welden
Development of skills in designing and using evaluative measures
for communication activities. Recommended: Majors—200 and
201; Nonmajors—social science core.

454 Communication Strategies in Social Action
and Development (3) II
Sanderson, Ellingsworth
Analysis of the role of interpersonal and mass communication
in programs of social action and development. Practice in plan-
ing communication strategies for social and technological change.
Pre: 390.

467 Broadcasting and Government (3) I
Rider
Responsibilities of broadcasters as regulated by law, government
policies, and court decisions. Comparison of communications
media. Systems of media control in other countries. Pre: 261.

468 Broadcasting and the Public (3) I
Bond, Rider
Relationship and interaction between broadcasting agent, govern-
ment regulatory agencies, and public. Development of bases for
critical evaluation of educational, cultural, and economic signifi-
cance and impact of broadcasting.

469 World Broadcasting (3) II
Rider
Comparative analysis of principal broadcasting systems of the
world, with detailed study of specific examples. World-wide com-
unication systems. Typical examples of international broad-
casting. Pre: 261, six hours beyond introductory courses in social
sciences.

471 Broadcast Programming (3) II
Rider, Bond
Objectives and methods of creating and implementing program for-
mats. Special emphasis on individual contemporary formats
and their possible results. Pre: 201 or 261.

499 Special Problems (v) I, II
(1) Communication theory and process: (2) intercultural com-
mmunication: (3) communication training: (4) mass media: (5)
teacher preparation: (6) organizational and administrative com-
mmunication. Pre: consent of instructor and department chairman.

Drama and Theatre (Drama)

Department Office: Kennedy Theatre 115

Professors: Brandon, Dukore, Langhans, Trapido.
Associate Professors: Cannon, Knapp, R. Mason, Wolz.
Assistant Professors: Carroll, Finney, Hunt, Sasa.
Instructor: Boyd.

160 or 260, and 240 are prerequisites to all courses in direction,
design, stagecraft, and lighting.

160 Introduction to Drama and Theatre (3) I, II
Representative plays studied as illustrative of changing forms
in the theatre and dramatic literature.

180 Introduction to Dance (3) I, II
Study of basic theory of human movement and the phenomenon
of dance in the West.

201 Introduction to the Art of the Film (3) I
Introduction to aesthetic aspects of silent and sound movies. Techni-
cal subjects analyzed only as they relate to thematic and
stylistic aspects of film.

202 Plays Into Films (3) II
Critical study of motion pictures based on plays. Analysis of
differences between stage plays and screen plays, and between
the media themselves.

221-222 Beginning Acting (3-3) Yr
Cannon
Individual exercises and group rehearsals with emphasis on voice,
movement, relaxation. Students must perform in direction class
scenes. 221 is prerequisite to 222.

240 Basic Stagecraft and Stage Lighting (3) II
Trapido
Introduction to theory and practice of stagecraft and lighting.

260 Dramatic Production (3) I
Trapido
Introduction to process of converting the play into the perfor-
mance.

281-282 Beginning Modern Dance (3-3) Yr
Knapp
Introduction to basic technical skills and creative processes. Pre:
281 prerequisite to 282.

283-284 Beginning Ballet (3-3) Yr
Introduction to the vocabulary of movement of classical ballet.
Pre: 283 prerequisite to 284.

299 Theatre Practice (3) I, II
Cannon
Supervised work in one or two areas: stagecraft, lighting, costum-
ing, make-up. Term paper required. May be repeated.

321-322 Intermediate Acting (3-3) Yr
Knapp
Emphasis upon individual work in characterization and impro-
visation. Students must perform in direction class scenes and
must be available to perform in at least one major production
each semester. Pre: 221-222 or consent of instructor. 321 pre-
requisite to 322.

330 Direction (3) I
Cannon
Readings, reports, discussion of theory and practice of stage
direction.

340 Advanced Stagecraft (3) I
Boyd
Principles applied. techniques employed, in contemporary stag-
ing.

353-354 Design in the Theatre (3-3) Yr
Mason
Principles of design as related to scenery, costume, lighting for
the stage. 353 is prerequisite to 354.

356 Costume for the Stage (3) I
Finney
Survey of historical costume, with special emphasis on translation
of historical styles into theatrical form.

370 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 Drama in Performance (3) II
Carroll
Study of plays as scripts for performance.

380 Creative Movement for Children (3) I, II
Study of techniques for teaching children to move, with emphasis
on creative exploration.

381-382 Intermediate Modern Dance (3-3) Yr
Wolz
Development of flexibility, control, rhythm, and expressiveness.
Pre: 281-282 or consent of instructor. 381 prerequisite to 382.

383-384 Intermediate Ballet (3-3) Yr
Sasa
Training in standard ballet combinations. Pre: 283-284 or consent
of instructor. 383 prerequisite to 384.

387-388 Dance Composition (3-3) Yr
Wolz
Study of techniques and materials used in composing dances.
Pre: 382 or consent of instructor.

410 Theatre Management (3) II
Business organization, management, public relations as practiced
in professional, university, community, secondary school
theatres.

421-422 Advanced Acting (3-3) Yr
Knapp
Intensive work on technique: introduction to historical styles.
Students must perform in direction class scenes and must be
available to perform in at least one major production each semes-
ter. Pre: 321-322 or consent of instructor. 421 prerequisite to
422.
440 Advanced Stage Lighting (3) II Boyd
Tools and techniques of lighting: emphasis on design process.

461-462 History of the Theatre (3-3) Yr Langhans
Survey of development of the theatre from ancient times to present.

464 Oriental Drama and Theatre: India and Southeast Asia (3) I Brandon
Principal forms of drama in India and Southeast Asia and manner of production in the theatre. Pre: consent of instructor.

465 Oriental Drama and Theatre: China and Japan (3) I Brandon
Principal forms of drama in China and Japan and manner of production in the theatre. Pre: consent of instructor.

468 Dance History (3) I Wolz
Survey of styles of dance in the West from ancient times to 20th century.

470 Advanced Creative Dramatics (3) II Wolz
Intensive study of the literature, philosophy, and technique. Supervised field activities with children. Pre: 370 and consent of instructor.

474 Children's Theatre (3) I, II

476 Puppetry (3) I, II
Survey of history and scope of puppetry. Construction and presentation of puppets for adult and child audiences. May be repeated.

480 Dance Workshop (v) I, II Sasa
Preparation of standard and new works for performance. May be repeated. Pre: 384 or consent of instructor.

481-482 Advanced Modern Dance (3-3) Yr Wolz
Emphasis upon performance of complete dances. Pre: 381-382 or consent of instructor. 481 prerequisite to 482. May be repeated.

483-484 Advanced Ballet (3-3) Yr Sasa
Emphasis upon performance of complete dances. Pre: 383-384 or consent of instructor. 483 prerequisite to 484. May be repeated.

490 Playwriting (3) I, II
Carroll
One-act plays; practice in writing in dramatic form; possibility of production. May be repeated. Pre: 3.0 grade-point in English composition.

492 Advanced Playwriting (3) II Carroll
Full-length plays and experimental writing in dramatic form. Pre: 490 or equivalent.

499 Directed Work (v) I, II
Limited to senior majors with 2.7 grade-point ratio, or 3.0 grade-point ratio in drama and theatre.

610 Seminar in Theatre Research (3) I Langhans
Bibliography and research methods; fundamentals of thesis and dissertation writing. Required of all Master's candidates.

620 Advanced Acting Techniques (3) II Knapp
Individual and group exercises in stage movement and line reading. Research and reports on styles of acting. May be repeated.

631-632 Seminar in Direction (3-3) Yr Knapp
Directorial analysis of plays of different styles and periods; exercises; preparation of prompt books. Pre: 631 prerequisite to 632.

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 Advanced Design (3) I Mason
Advanced study, analytical and creative, of visual aspects of dramatic art. Pre: 353-354.

662 Seminar in Drama and Theatre (3) II Dukore
Special topics in Western theatre.

664 Seminar in Oriental Theatre (3) II Brandon
(1) India and Southeast Asia. (2) China and Japan. Pre: consent of instructor.

665-666 Theories of the Theatre (3-3) Yr Carroll
Theories of production, from Aristotle to Brecht. 1st Sem: Classical Greece to 1700. 2nd Sem: 1700 to present.

688 Advanced Choreography (3) I, II Wolz
Advanced study, analytic or creative, in choreography. Pre: 387-388 or consent of instructor.

699 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
Organizational and artistic processes of the director. Pre: 631-632.

750 Seminar in Design (3) II
Mason
Design projects emphasizing conversion of historic materials to use in the theatre. Pre: 650.

760 Seminar in Aesthetics of the Theatre (3) II
Consideration of the theatre as an art form.

799 Directed Work (v) I, II
Reading or research in theatre theory or history; reading and practice in particular areas of dramatic production. Pre: consent of instructor.

800 Thesis Research (v) I, II
Pre: consent of instructor.

East Asian Languages

Department Office: Moore Hall 370

Professors: DeFrancis, Young.
Associate Professors: Cheng, S. J. Kim.
Assistant Professors: Ashworth, Hsieh, Jolly, Kurokawa, Kusanagi, Landers, Li, Sakurai, Sohn, Song, Taylor, Yoshikawa.
Specialists: Kobayashi, Nakanishi, Sato.

General (EALa)

100 Directed Elementary Language Study (v) I, II
Directed study of an East Asian language, including regularly offered languages in special cases (e.g., if a transfer student needs special assistance or if a student wishes to proceed at his own pace in his own special area of interest), and languages not regularly offered, if demand warrants and staff available. May be repeated for credit. Pre: consent of department chairman.

200 Directed Intermediate Language Study (v) I, II
Continuation of 100. May be repeated for credit. Pre: consent of department chairman.

271 Survey of Asian Languages (3) I
General survey of languages of the area, aimed at giving a non-technical summary of geographical distribution, historical development, and linguistic, social, and political aspects of the languages. Special attention paid to lexical borrowing, use of a common script, and problems in language engineering, including language reform and establishment of national languages. Conducted in English. (Cross-listed as IP 271)

300 Directed Third-Level Study (v) I, II
Continuation of 200. May be repeated for credit. Pre: consent of department chairman.

400 Directed Fourth-Level Study (v) I, II
Continuation of 300. May be repeated for credit. Pre: consent of department chairman.
451-452 Structure of an East Asian Language (3-3) Yr
Structure of an East Asian language, depending on demand and staff. Pre: two levels of an East Asian language.

543 Methodology of Teaching East Asian Languages (1) I, II
Separate sections conducted in Chinese, Japanese, and Korean for teachers of these languages. Emphasis on identification and analysis of problems in language learning, teaching, and testing; preparation of teaching materials; and in-service training. May be repeated.

690 Directed Reading (v) I, II
Directed reading of advanced texts in one of the East Asian languages. May be repeated for credit. Pre: consent of department chairman.

699 Directed Research (v) I, II
Pre: consent of department chairman.

---

Chinese (Chnse)
See also General (EALa)

101-102 Elementary Chinese (3-3) Yr
Development of listening, speaking, reading, writing. Structural points introduced inductively. Meets 1 hour daily, Monday through Friday. Daily laboratory work.

103 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.

105 Special Elementary Chinese (3) I
Rapid introduction to spoken and written standard Chinese for students who already have some knowledge of the writing system (including students who have background in Cantonese. Hakka, Japanese, etc.). In one semester content of 101-102 covered. Meets 1 hour daily, Monday through Friday. Daily laboratory work. Pre: placement test.

107-108 Beginning Cantonese (3-3) Yr
Introduction to standard dialect spoken in Canton, emphasizing the acquisition of conversational skills. Meets 1 hour daily. Daily laboratory work.

141 Introductory Calligraphy (1) I, II
Practice in writing with a Chinese brush. Open also to students in Japanese and Korean, or with no language background.

142 Advanced Calligraphy (1) I, II
Introduction to various forms of cursive writing.

201-202 Intermediate Chinese (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. Daily laboratory work. Pre: 102 or equivalent.

204 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.

206 Special Intermediate Chinese (4) II
Rapid introduction to spoken and written standard Chinese for students who already have some knowledge of the writing system (including students who have background in Cantonese, Hakka, Japanese, etc.). In one semester content of 201-202 covered. Meets 1 hour daily, Monday through Friday. Daily laboratory work. Pre: 105 or equivalent.

207-208 Intermediate Cantonese (3-3) Yr
Continuation of 107-108; meets 4 hours a week. Pre: 108 or equivalent or consent of instructor.

240 Elementary Chinese Composition (1) II
Practice in composing simple communications in Chinese, such as informal notes, invitations, announcements, etc. Pre: 201.

272 Survey of the Chinese Language (3) II
Non-technical survey in English of the Chinese language, including its history and internal and external linguistic relationships. Attention given to development of writing system, social factors in evolution of modern Chinese, influence of Chinese on neighboring languages, and controversies regarding language reform. Pre: 102 or equivalent.

301-302 Third-Level Chinese (4-4) Yr
Emphasis on vocabulary building and extended mastery of sentence structures of modern Chinese through reading and related conversation. Pre: 202 or equivalent.

303 Accelerated Third-Level Chinese (8) I
In one semester content of 301-302 covered. Pre: consent of instructor.

321-332 Chinese Conversation (3-3) Yr
Systematic practice on everyday topics of conversation. Laboratory drill. Pre: 202 or equivalent.

331-332 Chinese for Reading Knowledge (3-3) Yr
Conducted in English for students in other departments who are interested solely in acquiring a reading knowledge of Chinese. Pre: 202 and consent of instructor.

401-402 Fourth-Level Chinese (4-4) Yr
Extensive reading with emphasis on academic topics. Pre: 302 or 303.

404 Accelerated Fourth-Level Chinese (8) II
In one semester content of 401-402 covered. Pre: consent of instructor.

421-422 Advanced Chinese Conversation (3-3) Yr
Systematic practice on academic topics of conversation. Laboratory drill. Pre: 202 and consent of instructor.

431-432 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. May be repeated for credit. Pre: consent of instructor.

435-436 Introductory Classical Chinese (3-3) Yr
Analysis of basic structural patterns in classical Chinese through selected readings in various texts. Pre: 202 or consent of instructor.

437-438 Advanced Classical Chinese (3-3) Yr
Advanced readings in classical texts. Pre: 436 or equivalent.

440 Advanced Chinese Composition (2) I, II
Training in modern Chinese composition. Pre: 402 or equivalent and consent of instructor.

451-452 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 Study of Chinese Characters (2-2) Yr

470 Language and Culture of China (3) II
Extensive exposure, chiefly through tape recordings, classroom conversation and outside readings, to the history, culture, and institutions of China. Pre: 322, 402 or 422 or concurrent registration in either.

490 Reference Materials for Chinese Studies (1) I

631 History of the Chinese Language: Phonology (3) I
Phonological changes from archaic Chinese through ancient Chinese to modern Chinese represented by Mandarin, Lectures in English. Pre: 452, or Ling 421: consent of instructor.

632 Chinese Dialects (3) II
Synchronic description of a Chinese dialect and contrastive and comparative studies of the given dialect and Mandarin. May be repeated for credit. Pre: 452 or consent of instructor.

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.

750 **Research Seminar in Chinese (3) I, II**
Specialization in (1) teaching methods, (2) structure, (3) classical grammar, (4) other topics. Pre: consent of department chairman. May be repeated.

800 **Thesis Research (v) I, II**
Pre: consent of department chairman.

---

**Japanese (Jpnse)**

*See also General (EALa)*

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. (Special sections for students who already know some Japanese will meet 3 hours a week.) Pre: placement test.

103 **Accelerated Elementary Japanese (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.

120 **Special Elementary Japanese Conversation (3) I, II**
For students who have 102 equivalent writing ability but lack speaking proficiency. Content similar to spoken aspect of 101-102. Meets 3 times a week. Lab. Pre: placement test.

130 **Special Elementary Japanese Reading (3) I, II**
For students who have 102 equivalent speaking ability but lack reading and writing proficiency. Content similar to reading and writing aspects of 101-102. Meets 3 times a week. Laboratory. Pre: placement test.

200 **Intensive Fundamental Japanese (14) I**
Meets 4 hours daily, Monday through Friday, with daily laboratory drill. In one semester content of 103 and 204 covered. Pre: consent of instructor.

201-202 **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 **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 and consent of instructor.

272 **Survey of the Japanese Language (3) II**
Origin, development and various aspects of Japanese language discussed in connection with anthropology, politics, ideology, culture and history of Japan. Objective is to introduce background of Japanese language to students who have completed elementary level of Japanese. Conducted in English. Pre: 102 or equivalent.

301-302 **Third-Level Japanese (4-4) Yr**
Study of modern spoken and written Japanese involving advanced structures, expressions, patterns, kyōiku kanji. Meets 1 hour daily, Monday through Friday. Pre: 202 or equivalent.

303 **Accelerated Third-Level Japanese (8) I**
Meets 2 hours daily, Monday through Friday. 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, radio, tape recordings, and other audio-visual aids. Pre: 202 or equivalent.

321-322 **Japanese Conversation (3-3) Yr**
Development of general oral-aural proficiency. Pre: 202 or equivalent.

331-332 **Japanese for Reading Knowledge (3-3) Yr**
Reading course for those interested in developing skill in reading in their areas of specialization. Pre: 202 or equivalent.

340 **Japanese Composition (2) I, II**
Writing modern compositions following designated patterns, kanji and themes. Pre: 202 or equivalent.

400 **Intensive Advanced Japanese (16) II**
Meets 4 hours daily, Monday through Friday, with daily laboratory drill. In one semester content of 303 and 404 covered.

401-402 **Fourth-Level Japanese (4-4) Yr**
Study of modern spoken and written Japanese involving complicated structures, expressions, patterns, tōyō kanji. Meets 1 hour daily, Monday through Friday. Pre: 302 or equivalent.

404 **Accelerated Fourth-Level Japanese (8) II**
Meets 2 hours daily, Monday through Friday. 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, radio, tape recordings, 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. Pre: 302 or equivalent.

431-432 **Selected Readings in Japanese (3-3) Yr**
Rapid reading of material related to student's own areas of research or discipline. Pre: 332 or equivalent.

435-436 **Introduction to Classical Japanese (3-3) Yr**
Analysis of basic structural patterns in classical Japanese, including kambun, sōrō bun, and others, through selected readings in various texts. Pre: 402 or consent of instructor.

440 **Advanced Japanese Composition (2) I, II**
Writing advanced modern composition following designated patterns, kanji and themes. Pre: 302 or equivalent.

451-452 **Structure of Japanese (3-3) Yr**
Phonology, morphology, syntax of modern colloquial grammar. Pre: 202 or equivalent.

455-456 **Topics in Japanese Grammar (3-3) Yr**
Analysis of topics in modern colloquial Japanese grammar. Pre: 302 or equivalent.

457-458 **Japanese Grammar—Classical (3-3) Yr**

470 **Language and Culture of Japan (3) II**
Extensive exposure, chiefly through classroom discussion and outside reading, to culture, history and institutions of Japan. Pre: 401 or concurrent registration.

471-472 **Topics in Language and Culture of Japan (3-3) Yr**
Intensive exposure, chiefly through tape recordings, classroom conversations and outside readings, to selected topics in culture, history and institutions of Japan. May be repeated for credit. Pre: 470.

490 **Reference Materials for Japanese Studies (1) II**
How to find, use and evaluate reference materials basic to Japanese studies. Pre: 302 or equivalent.

491-492 **Japanese Interpretation (3-3) Yr**
Training in techniques of interpretation and study of the theory of interpretation. Summary, consecutive, and simultaneous interpretation from Japanese to English and English to Japanese. May be repeated once. Pre: 402 or equivalent.
495-496  Japanese Translation (3-3) Yr  

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 audio-lingual approach. Teaching materials, teaching aids and test construction. Pre: 452 or equivalent.

750  Research Seminar in Japanese (3) I, II  
Specialization in (1) teaching methods, (2) structure, (3) dialects, (4) other topics. Pre: consent of department chairman. May be repeated.

800  Thesis Research (v) I, II  
Consent of chairman.

Korean (Kor)  
See also General (EALit)

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  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  Third-Level Korean (3-3) Yr  
Advanced conversation, reading, writing. Additional Chinese characters. Pre: 302 or equivalent.

401-402  Fourth-Level Korean (3-3) Yr  
Introduction to classical and contemporary literary styles. Pre: 402 or equivalent.

431-432  Selected Readings in Korean (3-3) Yr  
Selected readings in various discipline areas, with specific areas determined on basis of student interest and availability of staff. May be repeated for credit.

East Asian Literature

Department Office: Moore Hall 383

Associate Professors: Fujikawa, Lau.
Assistant Professors: Ma, McLeod, Tahara.

General (EALit)

399  Directed Reading (v) I, II  
Pre: limited to majors with 2.7 average. May be repeated.

491  Senior Colloquium in East Asian Literature (3) II  
Staff  
Exploration of comparative perspectives on East Asian literature.

690  Directed Reading (v) I, II  
Staff  
Directed reading of advanced literary texts in Chinese, Japanese or Korean. Pre: consent of instructor.

699  Directed Research (v) I, II  
Staff  
Pre: consent of instructor.

Chinese (ChLit)

261  Chinese Literature in Translation—Traditional (3) I, II  
McLeod  
Survey from earliest times through the Sung Period, with emphasis on poetry and essays.

262  Chinese Literature in Translation—Modern (3) I, II  
Lau  
Survey from the Sung Period to the contemporary era, with emphasis on drama and prose fiction.

341-342  Readings in Contemporary Chinese Literature (3-3) Yr  
McLeod  
Survey of recent literature in poetry, fiction and drama. Selected simple texts. Pre: Chinese 202 or equivalent.

441-442  Readings in Modern Chinese Literature (3-3) Yr  
Lau  
Selected readings in modern Chinese verse and prose, with emphasis on critical analysis. Pre: completion of 342 and Chinese 302 or 322.

451  Readings in Traditional Chinese Literature (3) I, II  
Ma  
Introduction to styles and forms of premodern verse and prose. Pre: 261 and Chinese 302 or equivalent.

490  Reference Materials for Chinese Literary Studies (3) I or II  
Ma  
Reference materials important in Chinese literary studies. Pre: 302 or equivalent.

609-610  Chinese Poetry (3-3) Yr  
Winters  
Critical study of classical Chinese poetry in various forms. Pre: consent of instructor.

611  Contemporary Chinese Literature (3) I, II  
Winters, Lau  
Representative works of leading modern novelists, poets, dramatists since 1919. Drama, poetry, fiction. Pre: consent of instructor. May be repeated for credit.

615  Traditional Chinese Fiction (3) I, II  
Ma  
(1) Short stories (t'uan-chi, pien-wen, san-yen and erh-p'o collections) and historical romances (San-kuo yen-i, Sui-T'ang yen-i, etc.) and (2) the novel—readings from among Chin-p'ing-mei, Hung-lou-meng, Ju-lin wai-shih, etc. Analysis of form and themes. Pre: consent of instructor. May be repeated for credit.

619  Traditional Chinese Drama—Northern (3) I  
Lo  
Study of major plays of the Northern style of the Yuan Period (1260-1368). Readings from among “Romance of the Western Chamber,” “The Orphan of Chao,” “Autumn in the Palace of Han,” etc. Pre: consent of instructor. May be repeated for credit.

620  Traditional Chinese Drama—Southern (3) II  
Lo  
Study of major plays of the Southern style of the Ming and Ch'ing periods (1368-1911). Readings from among “The Lute Song,” “The Peony Pavilion,” “The Peach Blossom Fan,” etc. Pre: consent of instructor. May be repeated for credit.

621  History of Chinese Literary Criticism (3) II  
Staff  
Survey of Chinese literary criticism from Confucius to 20th C. Pre: consent of instructor.

693  Advanced Chinese Bibliography (3) I  
Lo  
Principal sources of bibliographical information. Pre: 490 or equivalent.

750  Research Seminar in Chinese Literature (3) I, II  
Lau, McLeod  
Study of authors, a genre, a period, or a problem. (1) Modern literature and (2) traditional literature. Pre: consent of instructor. May be repeated for credit.

800  Thesis Research (v) I, II  
Staff  
Pre: consent of instructor.
Japanese (JaLit)

261 Japanese Literature in Translation—Traditional (3·3) I, II Araki
Survey of traditional Japanese literature, with emphasis on analysis and comparison.

262 Japanese Literature in Translation—Modern (3·3) I, II Tahara, Viglielmo
Survey of modern Japanese literature, with emphasis on analysis and comparison.

341-342 Readings in Contemporary Japanese Literature (3-3) Yr Fujioka
Survey of recent literature in poetry, fiction and drama. Selected simple texts. Pre: Jpnse 302 or equivalent.

441-442 Readings in Modern Japanese Literature (3-3) Yr Tahara
Selected readings in modern Japanese verse and prose, with emphasis on critical analysis. Pre: completion of 342 and Jpnse 302 or 322.

451 Readings in Traditional Japanese Literature (3) I, II Ikeda
Introduction to styles and forms of premodern verse and prose. Pre: 261 and Jpnse 302 or equivalent.

490 Reference Materials for Japanese Literary Studies (3·3) I, II Tahara
Reference materials important in Japanese studies. Pre: consent of instructor.

509-610 Japanese Poetry (3·3) Yr Staff
Historical survey of poetic types including tanka, haiku, senryuu, shi, folk songs. Pre: consent of instructor.

611-612 Modern Japanese Literature (3-3) Yr Viglielmo
Reading and critical analysis of representative modern literary works, with emphasis on fiction. 611: Meiji-Taisho literature (1868-1926). 612: Showa literature (1926-present).

614 Edo Literature (3) II Araki
Reading and critical analysis of prose literature of Edo Period. Pre: consent of instructor. May be repeated for credit.

615 Medieval Japanese Literature (3) I Araki
Reading and critical analysis of prose literature of Kamakura and Muromachi periods. Pre: consent of instructor. May be repeated for credit.

616 Classical Japanese Literature (3) II Tahara
Reading and critical analysis of Heian Period prose literature. Pre: consent of instructor. May be repeated for credit.

621-622 History of Japanese Literary Criticism (3-3) Yr Staff
Survey of Japanese literary criticism from ancient times to 20th C. Pre: consent of instructor.

623-624 Japanese Folklore (3-3) Yr Ikeda
Investigation of folk beliefs and customs, particularly as manifested in traditional literature and narrative literature. Pre: consent of instructor.

690 Advanced Japanese Bibliography (3) I, II Ikeda
Advanced studies in bibliographical material. Pre: 490.

750 Research Seminar in Japanese Literature (3) I, II Viglielmo, Araki
(1) Modern literature and (2) traditional literature. Pre: consent of instructor. May be repeated for credit.

800 Thesis Research (v) I, II Staff
Pre: consent of instructor.

Korean (KoLit)

261 Korean Literature in Translation—Poetry (3) I Lee
Historical survey from earliest times to present, with emphasis on analysis and comparison. Knowledge of Korean not required.

262 Korean Literature in Translation—Prose (3) II Lee
Historical survey of Korean narrative and fiction, with emphasis on analysis and comparison. Knowledge of Korean not required.

461 Introduction to Modern Korean Literature (3) I Lee
Selected readings in major genres of modern literature. Pre: consent of instructor.

462 Introduction to Traditional Korean Literature (3) II Lee
Selected readings in major genres of premodern literature. Pre: consent of instructor.

694 Reference Materials for Korean Studies (3·3) I, II Lee
Basic reference and bibliographic materials for research and use in Korean studies. Pre: consent of instructor.

750 Research Seminar in Korean Literature (3) I, II Lee
Specialization in (1) traditional literature, (2) modern literature. Pre: consent of instructor. May be repeated for credit.

Economics (Econ)

Department Office: Spalding Hall 460

Professors: Campbell, Gorter, Heller, Hung, Kamins, Miklius, Miller, Naya, Oshima, Powers.

Visiting Professor: Suits.

Associate Professors: Comitini, Ghali, Lim, Yeh.

Assistant Professors: Burcroatf, Chao, Chau, Coffman, Ebel, Haines, Hight, Mak, Moncur, Overbeek, Pollock, Rice, Richards, Rose.

120 Introduction to Economics (3) I, II
One-semester course for nonmajors. 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. Credit not given for both this course and 150.

150 Principles of Economics (3) I, II
Analysis of functioning of economic systems with emphasis on forces determining levels and changes of national income, employment and price levels. Describes basic economic institutions, e.g., markets, money, banks, labor organizations, corporations. Credit not given for both this course and 120.

151 Principles of Economics (3) I, II
Analysis of how commodity and factor prices are determined. Discusses policies for efficient allocation of scarce resources. Required of all economics majors.

220 Mathematics for Social Scientists (3) I Moncur
Basic mathematics as used in economics, emphasizing development of usable and accurate knowledge of appropriate concepts. Topics include: graphs, sets and functions; matrices, determinants and linear equation systems; differentiation, partial derivatives and total differentials, and the calculus of optimization; integration; log and exponential functions.

300 Intermediate Economic Theory: Macroeconomic Analysis (3) I, II Ebel, Yeh
Concepts: determination of income, employment, price levels; effects of fiscal, monetary, other policies. Pre: 150.

301 Intermediate Economic Theory: Price Theory (3) I, II Burcroatf, Coffman
Price determination and resource allocation under competition, monopoly, oligopoly, monopolistic competition. Theories of demand, cost, partial, general equilibrium. Pre: 151.

310 From Poverty to Affluence: Economic Development for Nonmajors (3) I, II Lim, Hung, Rice
Introduction to issues in economic development. Considers dualistic development, role of foreign trade, agricultural transformation and industrialization, property rights, investment policy, sources of savings, scope and techniques of development planning. Emphasis on case studies of Asian underdeveloped countries. Pre: 120 or 150 or equivalent.

311 The Hawaiian Economy (3) II Ebel, Mak
Course developed in two parts: Part I focuses on history of the development of Hawaiian economy. Part II emphasizes current economic problems. Pre: 150, 151 or consent of instructor.
321 Introduction to Statistics (3) I, II
Moncur, Richards
Basic elements of statistics, including descriptive statistics, probability and inference, distributions, hypothesis testing, and regression and correlation analysis.

340 Money and Banking (3) I, II
Hight
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.

360 International Economic Relations (3) I
Heller, Naya, Yeh
General survey focusing on theoretical, historical, and institutional aspects of international trade and finance. Includes international specialization, gains from trade, trade problems of less developed countries, balance of payments, capital movements, and international monetary system. Pre: 120 or equivalent.

396 Contemporary Economic Issues for Nonmajors (3) I
Ebel, Rose
To apply economic analysis to economic problems currently under public discussion. Designed for nonmajors, the required analytical background is modest. Subject matter will vary, but might include the economics of poverty, environmental pollution, discrimination, war economy, land-use and housing, public transportation, etc. Pre: 120 or consent of instructor.

399 Directed Reading (v) 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.

404 History of Economic Thought (3) I
Overbeek
Survey of economic thought from Adam Smith to present with emphasis on theory of value and distribution. Pre: 300, 301.

405 Comparative Economic Systems (3) I
Burceff
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: 150, 151 or consent of instructor.

410 Economic Development (3) I
Lim, Power, Rice
Study of characteristics of underdeveloped economies, theories of economic growth, strategies of economic development, and investment criteria. Pre: 300, 301 or consent of instructor.

411 Economic Development of Europe (3) II
Overbeek

412 Economic Development of U.S. (3) I
Mak
Analysis of U.S. economy from colonial times to the present. Topics include economics of slavery, transportation, education, industrial concentration, regional and urban growth. Pre: 150, 151. (Alt yrs: offered 1973-74)

415 Asian Economic Development (3) I
Yeh, Burceff
Study of history and economic development of Asian nations. Resources, population and income, savings, investment and consumption patterns. Role of government and private enterprise. Pre: 150-151 or consent of instructor.

420 Mathematical Economics (3) II
Chao, Moncur, Richards
Review and application of mathematical techniques in economic analysis; differentiation, integration, differential equations, difference equations, and linear programming. Pre: 300, 301, and knowledge of differential and integral calculus.

424 Introduction to the Theory of Statistics (3) I
Moncur
Covers descriptive statistics, probability theory, probability distributions, sampling, hypothesis testing, parameter estimations, bi-variate regression and correlation analysis. Pre: knowledge of differential and integral calculus.

425 Econometrics I (3) I
Chau, Ghali
Review of matrix algebra; examination of bi-variate and multi-variate regression analysis, correlation theory, properties of least squares and maximum likelihood estimates under different assumptions; examination of estimation problems likely to be encountered. Pre: 424.

426 Econometrics II (3) II
Chau, Ghali
Reviews of matrix algebra, multiple regression and problems of statistical estimation including the identification problem. Exploration of methods of simultaneous equation estimation such as indirect least squares, two-stage least squares, limited information maximum likelihood, three-stage least squares, and full information maximum likelihood. Pre: 425.

430 Economics of Human Resources (3) I
Haines, Hight
Economic analysis applied to the labor market with particular emphasis on investment in human capital, economics of education, health, migration, etc. Pre: 301.

440 Monetary Theory and Policy (3) I
Miller
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
Ebel, Kamins, Pollock
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
Ebel, Kamins, Pollock
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: 150-151 or consent of instructor.

458 Public Resource Allocation (3) I
Holmstrom
Application of economic analysis to public decision making. Introduction to cost-benefit analysis; social rate of discount; external economies; treatment of uncertainty; planning and program budgeting systems (PPBS). Applications to planning. Pre: 120 or consent of instructor.

460 International Trade and Welfare (3) I
Heller, Naya, Yeh
Theory of international trade and welfare; international specialization and exchange, general equilibrium, tariffs, quotas, common markets, including welfare implications. Pre: 301 or 360.

461 International Monetary Economics (3) II
Comitini, Heller, Yeh
International monetary theory: balance of payments, income, price level, and exchange rate determination in open economies, international capital movements, the role of international reserves, and current international monetary problems. Pre: 300 or 360.

470 Industrial Organization and Public Control of Business (3) I
Miklius

480 Transportation and Public Utilities (3) II
Miklius, Rose
Economic characteristics of transportation and public utility industries. Analysis of objectives, problems and effects of government regulation of these industries. Pre: 300, 301.

490 Location Theory and Regional Analysis (3) I

492 Regional Economic Development (3) II
Holmstrom, Renaud
Sources of regional economic growth and of regional development planning. Emphasis on Hawaiian economy and experience. Pre: 300, 301 or consent of instructor.

495 Urban Economics (3) I
Renaud
Metropolitan and regional growth and development. Intrametropolitan changes (industry, employment, population). Residential location. The urban land market, housing markets and racial problems in urban areas. The provision of urban services and municipal finance. Urban transportation issues. Pre: 300, 301 or consent of instructor.

496 Selected Topics in Contemporary Economics Problems (3) II
To demonstrate the relevance of economic principles to current events. Topics treated vary from semester to semester, depending on student interests. Typically, they include environmental pollu-
tion, crime (including drugs trade) control, racial discrimination, the draft, social choice, transit congestion, etc. Content is not informational but analytic. Student learns to pose questions, to think them through, and to analyze problems using microeconomic concepts. Pre: 301.

600 Macroeconomic Theory (3) I Campbell, Power
Static theories of aggregate economics; determinants of employment, prices, real income, policy alternatives. Pre: 300.

601 Microeconomic Theory (3) I, II Hung, Miller
Rigorous analysis of consumer’s choice; market structure; pricing of products and factors of production under different market structures; distribution. Pre: 301 and 220 (or equivalent).

602 Economic Growth and Fluctuations (3) II Campbell
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 Advanced Microeconomic Theory (3) II Hung
Topics include general equilibrium; welfare economics; linear programming; input-output analysis; capital theory; dynamic economics. Pre: 601.

604 History of Economic Thought (3) I Overbeek
Evolution of economic theories, including classical economics, marginal utility theory, neo-classical theory, welfare economics, Keynesian and post-Keynesian employment, income and monetary theory. Emphasis on post-Marshallian developments. Pre: 404 or consent of instructor.

605 Mathematical Economics (3) I Chao, Richards
Application of mathematical methods of 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.

610 Economic Development I (3) I Lim, Oshima, Power
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 Lim, Power
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 dynamic models) applied to problems of economic development. Pre: 610.

613 Advanced Economic Development of the U.S. (3) I Mak
Analysis of U.S. economy from colonial times to the present. Topics include economics of slavery, transportation, education, industrial concentration, regional and urban growth. Emphasis placed on the application of economic theory and quantitative techniques to the measurement and interpretation of economic events. Pre: 610 or consent of instructor.

614 Economic Development of Japan (3) I Oshima
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 Economic Development of China and Korea (3) II Hung, Lim
Analysis of growth, structural change, development patterns, and problems of mainland China, Taiwan, and Korea. Pre: 610 or consent of instructor.

618 Economic Development of Southeast Asia (3) I, II Lim, Naya, Power, Rice
Analysis of growth, structural change, development patterns, agricultural and industrial development, foreign investment, foreign trade, economic integration and problems of countries in the region with special emphasis on Indonesia, Malaysia, Philippines, Thailand, Singapore and Vietnam. Pre: 610 or consent of instructor.

624 Advanced Econometrics I (3) I Chau, Ghali
Classical linear regression model, its concepts and properties; analysis of variance, analysis of covariance; problems in applying the regression model to test single-equation economic relations; extension and revisions of the basic model; use of computer to perform regression calculations. Pre: 321, 426.

626 Advanced Econometrics II (3) II Chau, Ghali
Linear regression with stochastic regressors; estimations of systems of simultaneous linear relationships; econometric models of the economies; recent developments. Pre: 624.

627 Economic Programming (3) II Ghali
Application of optimization techniques, econometric models, and input-output analysis to problems of resource allocation, use of foreign assistance, trade policy, project evaluation, and problems of multi-level planning and decentralized decision making. Pre: 420 or consent of instructor.

640 Monetary Theory (3) II Campbell, Miller
Analysis of selected problems in monetary economics, with emphasis on monetary and banking policy. Pre: 440 or consent of instructor.

650 Theory of Public Finance—Expenditures (3) I Ebel, Pollock

651 Theory of Public Finance—Revenue (3) II Ebel, Pollock
Analysis of the incidence and economic effects of alternative taxes and tax systems; specification of tax systems which would have minimum impact on resource allocation determined by the free market while achieving other public policy goals. Role of public finance in economic development. Pre: 450.

660 International Trade and Welfare (3) I or II Heller, Naya, Yeh
Advanced theory of international trade and welfare; international specialization and exchange, general equilibrium, tariffs, quotas, common markets, including welfare implications. Pre: 460 or consent of instructor.

662 International Monetary Economics (3) I Cominiti, Heller, Yeh
Advanced international monetary theory: balance of payments, income, price level, and exchange rate determination in open economies, international capital movements, role of international reserves, and current international monetary problems. Pre: 461 or consent of instructor.

670 Human Resources and Manpower Economics (3) I Haines, Hight
Human resource development as source of economic growth. Labor skill excess and shortage, manpower planning. Investment in labor skills. Migration and the transfer of human capital. Pre: 430.

672 The Economics of Population Growth (3) I or II Analysis of demographic aspects of economic development with particular reference to demographic determinants of consumption, saving, employment and productivity. Population growth and the problem of natural resources. Role of demographic factors in theories of economic development. Economic aspects of population policies. Pre: consent of instructor.

690 Urban and Regional Economic Analysis (3) I or II Renaud
Analytical treatment of problems in the organization of metropolitan regions: Demand and supply of urban public services. Transportation, location decisions and urban dimensions of human resources analysis. Pre: 492 and 495 or consent of instructor. (Identical to Geog 620)

694 Economics of Marine Resources (3) I or II Cominiti
Application of techniques of economic analysis related to unique problems of utilization and development of marine resources. Topics include: economics of fisheries and other uses of the seas, institutional and legal aspects of ocean use; resource management and public policies regarding rational use of marine
environment: development and rate of diffusion of marine technology. (Identical to OE 694) Pre: consent of instructor.

699 Directed Research (v) I, II
Pre: consent of department chairman.

700 Seminar: Macroeconomic Theory (3) I Campbell, Miller
Critical evaluation and application of macroeconomic theory. Pre: 600.

701 Seminar: Microeconomic Theory (3) I Hung, Chao
Critical evaluation and application of microeconomic theory. Pre: 601, 603.

702 Seminar in Economic Development (3) II Lim, Naya, Power
Case studies, emphasizing research approaches and techniques. Theories of economic development applied to experience of certain Asian nations. Pre: 610 or consent of instructor.

730 Research Seminar (3) I, II Pollock, Miller, Haines
Review of recent literature and intensive discussion of selected issues emphasizing research approaches in one of these fields: (a) urban and regional economics, (b) public finance, (c) money and finance, (d) human resource economics. Pre: consent of instructor.

760 Seminar in International Economics (3) II Gorter
Special studies in theories of international trade and international finance. Pre: 600, 662 or consent of instructor.

780 Selected Topics in Economic Analysis (3) I, II
Special topics in economic analysis and in applied economics not covered in other courses. Pre: 600, 601 or consent of instructor.

800 Thesis Research (v) I, II

English (Eng)

Department Office: Kuykendall Hall 412


Associate Professors: Friedson, Gray, Hollingshead, Maltby, McCutcheon, Menkoff, Scott, Shapiro, Sinclair, Solomon, Stallians, Thompson, Topham, Ward, Wiley.

Assistant Professors: Baber, Creed, Edelstein, Fellmeth, Friederich, Glick, Hillman, Kau, Kennedy, Lafferty, Lichty, MacMillan, McHenry, Nam, Newton, Pak, Sherman, Shimer, Simson, Teevan, Whitlock, Wilson, Wright.

Instructors: Brown, Cha, Chirila, Church, Clark, Cunningham, Damon, DeMoss, Dick, Drinkard, Fairey, Finley, Henry, Hunter, Kamins, Lessa, Lotridge, Macdonald, McKeegan, Merz, Morrison, Mucklo, Murray, P. Nelson, V. Nelson, Ownbey, Petrie, Ricks, Rogers, Singer, Sumida, Vella, J. Weston, S. Weston, Williamson, Despain.

One course from the sequence 100-170 is prerequisite to all sophomore literature courses.

100 Expository Writing: Four Major Forms (3) I, II
Practice in representative forms of expository writing: descriptive and narrative exposition, autobiographic writing, interpretations of completed events, and presentation of arguments on social or cultural issues, together with readings in professional writing in each form.

110 Narrative and Descriptive Exposition (3) I, II
Intensive course in the writing of exposition in which description and narration play a major role. All assignments in non-fiction.

120 Exposition and Autobiography (3) I, II
Writing of essays in which the student records, examines, accounts for, and interprets noteworthy events in his own life.

130 Problem-Solving and Argument on Contemporary Issues (3) I, II
Study of elements involved in solving problems and resolution of issues in a controversy, together with writing of essays in which students identify problems, and argue in support of courses of action that should be taken to solve those problems.

140 The Uses of Language (3) I, II
Requirements frequent written commentaries on language in action. Papers based on readings in prose writing (book-length works of nonfiction, essays, reports and editorials in newspapers, articles and advertisements in periodicals) and observation of oral discourse (public speeches, television reports, radio and television advertisements, etc.). Also includes exercises in the creation of different rhetorical effects through language.

150 Exposition and the Study of the Past (3) I, II
Writing of essays focusing on analysis and comparison of ideas and issues raised by primary and secondary sources in Western cultural and intellectual development.

160 Studies in a Major Writer of Exposition or Argument (3) I, II
Writing of analyses, interpretations, and evaluations of a work or group of works by a single writer, to help students develop in focus of the author's work and of ways of analyzing major works of exposition.

170 Language and the Visual Media (3) I, II
Writing of essays analyzing visual media, with particular concentration on the role of language in visual media, such as films, television, and advertising.

Any of the following six semester courses (251-256) satisfies the requirement for sophomore literature.

251-252 Major Works of British and American Literature (3-3) Yr
251: British literature from Middle Ages to 1800. 252: American and British literature from 1800 to present.

253-254 World Literature (3-3) Yr
Major works of classical, Oriental, European, American literature. 253: Classical times to Renaissance. 254: 1600 to present.

255-256 Types of Literature (3-3) Yr

Two semesters of sophomore literature (251, 252, 253, 254, 255, 256) are prerequisites for upper division courses beginning with English 312.

309 Written Communication (3) I, II
Practice in informative, analytical, persuasive writing. Open only to students in business administration and home economics. Pre: 100 and sophomore literature. or equivalents.

310 Technical Exposition (3) I, II
Analysis of selected scientific prose: principles and practice of presenting technical information. Open only to juniors and seniors in scientific fields.

312 Literary Writing (3) I, II
Writing and criticism of essays, designed to develop effective expression, with emphasis on lively and individual style. Pre: consent of instructor.

313 Introduction to Imaginative Writing (3) I, II
Basic principles of the writing arts explored through composition of poems. short stories, and one-act plays.

315 Advanced Expository Writing (3) I, II
Writing of essays from logical and rhetorical principles, especially modes of definition, assertion, proof. Emphasis on clarity, coherency, style.

320 Introduction to Language (3) I, II
Fellmeth, Pak
Examination of modern concepts of structure and use of language, with special reference to English.

331 Introduction to Poetry (3) I, II
Written and oral analysis of imagery, sound, language, form and structure of poems, leading to increased awareness of nature of poetry.
335 Backgrounds of World Literature (3) I, II
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
Critical evaluation of the genres of literature, of various modes of analysis, of problems involved in literary perception.

351-352 English Literary History (3-3) Yr
Readings in representative authors and works, with emphasis on history of ideas and development of literary forms. 351: beginnings to 1798. 352: Romantics to present.

360 Readings in Oriental Literature (3) I, II
Shimer
Introduction to major texts in three or more Oriental literatures, with opportunity for each student to read further in one literature of his own choosing.

393-394 Junior Honors Program in English
(3-3) Yr
Bouslog
Tutorials in English and American literature. Consult departmental honors adviser for course particulars. Consent of instructor or instructors required.

399 Directed Reading (v) I, II
Individual reading. Limited to senior majors with 2.7 grade-point ratio, or 3.0 grade-point ratio in English. Pre: consent of instructor and department chairman.

401 Modern English Grammar (3) I, II
Fellmeth, Pak, Shen
Syntax of modern English examined within framework of recent linguistics scholarship. Pre: 320 or consent of instructor.

402 History of the English Language
(3) I, II
Fellmeth, Pak, Shen
Introduction to older stages of English and processes by which modern English evolved.

403 American English: Its History and Development
(3) II
Backus
Linguistic, regional, and cultural development of American English in literary works, from Colonial times to the present. (Cross-listed as AmSt 453)

404 English Phonology (3) I
Shen
Study of English sound system (including morphophonemics) and of recent theories of phonological interpretation. Pre: 320, 401, Ling 102, Sp 211 or equivalent.

410 Form and Theory of Poetry (3) I, II
Study of techniques of poetic composition and review of issues in poetic theory for students interested in poetry writing. Pre: 331 or equivalent and consent of instructor.

411 Poetry Writing (3) I, II
P. Nelson, Thompson
Writing and criticism of poetry. Pre: 410 and consent of instructor. May be repeated for credit.

413 Form and Theory of Fiction
(3) I, II
Baber, Damon, Huntsberry, MacMillan
Study of techniques of prose fiction from standpoint of the writer. Pre: consent of instructor.

414 Narrative Writing
(3) I, II
Baber, Damon, Huntsberry, MacMillan
Instruction and practice in writing fiction. Pre: 413 or equivalent, and consent of instructor. May be repeated for credit.

421 English Drama to 1642 (3) II
Fujimura, Summersgill
Origins of English drama; medieval drama and theatre; contemporaries and successors of Shakespeare.

431, 432 The English Novel (3,3) Yr
Creed, 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 20th-Century British Novel
(3) I, II
Creed, Friedson, Menikoff

437 Masters of Literary Criticism (3) I
Survey of the chief writings in criticism from Aristotle through Arnold (in English), with emphasis on classical answers to critical problems.

442 Chaucer (3) I, II
Summersgill
Study of Chaucer's development from early poems through The Canterbury Tales.

445, 446 Shakespeare
(3,3) Yr
Fujimura, Malby, Summersgill, Winters
Critical study of Shakespeare's plays. 445: from the beginning to Hamlet. 446: Hamlet through last plays. Both semester courses taught each semester.

447 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 16th-Century English Literature (3) I
McCutcheon
Poetry and prose of Tudor period, exclusive of the drama.

454 Early 17th-Century English Literature (3) II
Fujimura, McCutcheon
Poetry and prose of 17th century to 1660, exclusive of the drama.

456 Restoration Literature
Anderson, Fujimura, Larson, McHenry
Poetry, prose, drama from 1660 to 1700, exclusive of Milton.

457, 458 18th-Century English Literature
(3,3) Yr
Anderson, Fujimura, Malby, McHenry
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 The Romantic Movement in England (3) I
Stempel, Stillians

463, 464 Victorian Literature (3,3) Yr
Shapiro, Stempel

469 Studies in British Literature (3) I, II
Some aspects of British literature, such as genre, one or more major authors, etc. May be repeated for credit.

471, 472, 473 American Literature (3,3,3) I, II
Critical study of American literature. 471: from beginnings to Civil War. 472: from Civil War to 1914. 473: from 1914 to present. All three semester courses taught each semester.

475, 476 The American Novel
(3, 3) I, II
Bouslog, Edelstein, Levy
Development of American novel. 475: beginnings to 1900. 476: 1900 to present.

479 Studies in American Literature (3) I, II
Some aspects of American literature, such as genre, one or more major authors, etc. May be repeated for credit.

480 Literature of the Pacific
(3) I, II
Backus, Kirtley, Leib, Sinclair
Pacific Islands, Australia: narratives of voyagers, translations of native literature, fiction and poetry.

482 The Narratives of Oral Tradition (3) II
Kirtley
Examination of folk narratives (prose types of folklore, ballad and related types of poetry, and epic); their relation to art-literature.

483, 484 Modern Drama Literature
(3,3) Yr
Friedson, Malby, Tevezan, Topham
483: European, Ibsen, and Chekhov to Shaw. 1880-1920. 484: European and American, O'Casey to Miller, 1920 on.

487, 488 20th-Century British and American
Poetry (3,3) Yr
Friedson, Sinclair, Tevezan, Thompson
487: Study of the classic moderns in 20th-century poetry, such as Yeats, Pound, Eliot, W.C. Williams. 488: Study of other 20th-century poets.

489 Studies in Comparative Literature (3) I, II
Study of one topic, such as genre, motif, figure, theme, movement, tradition and convention, major authors, etc. in two or more literatures. May be repeated for credit.

491-492 Senior Honors Tutorial (3-3) Yr
Stempel, Stillians
Of the graduate courses that follow 660, 675, 735, 745, 757, 775, 780, and 785 may be repeated for credit.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Instructor(s)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>640</td>
<td>Old English (3) II</td>
<td>Pak</td>
<td>Structure of the language, relation to present English; reading of selected prose and poetry. Pre: consent of instructor.</td>
</tr>
<tr>
<td>610</td>
<td>Rohiter: Theories and Applications (3) II</td>
<td>Larson</td>
<td>Major rhetorical theories from Aristotle to the present: uses of rhetorical perspectives in analysis of non-fiction prose. Interpretation of imaginative literature, and in oral and written composing; current developments and issues in rhetorical theory.</td>
</tr>
<tr>
<td>637,638</td>
<td>History of Literary Criticism (3,3) Yr</td>
<td>Fujimura, Simson, Stempel</td>
<td>Chief theories of literary criticism, with readings (in English). 637: from Plato to the late 19th century. 638: modern literary criticism.</td>
</tr>
<tr>
<td>735</td>
<td>Seminar in Comparative Literature (3) I, II</td>
<td>Jackson, Krohn, Mason, M. Steinberg</td>
<td>Introduction to comparative literature: relationship of English to other literatures; sources and influences. Pre: consent of instructor.</td>
</tr>
<tr>
<td>745</td>
<td>Seminar in English Language (3) II</td>
<td>Lerner</td>
<td>Intensive study of one topic in English linguistics. Pre: consent of instructor.</td>
</tr>
<tr>
<td>755</td>
<td>Literary Genres and Problems (3) I, II</td>
<td>Tegmark</td>
<td>Study of one area of English or American literature.</td>
</tr>
<tr>
<td>760</td>
<td>Major Authors (3) I, II</td>
<td>Stempel</td>
<td>Study of one or more authors, English or American.</td>
</tr>
<tr>
<td>775</td>
<td>Seminar in English Literature (3) I, II</td>
<td>Scott</td>
<td>Study of authors or a period. Pre: consent of instructor.</td>
</tr>
<tr>
<td>780</td>
<td>Seminar in American Literature (3) I, II</td>
<td>Scott</td>
<td>Intensive study of one or two writers. Pre: consent of instructor.</td>
</tr>
<tr>
<td>785</td>
<td>Seminar in American Literature (3) I, II</td>
<td>Scott</td>
<td>Study of a problem or a period. Pre: consent of instructor.</td>
</tr>
<tr>
<td>790</td>
<td>Teaching Composition (3) II</td>
<td>Larson</td>
<td>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.</td>
</tr>
<tr>
<td>791</td>
<td>Student Teaching of College Composition (3) I</td>
<td>Larson</td>
<td>Supervised experience in teaching composition at college level. Pre: 790 or equivalent.</td>
</tr>
<tr>
<td>799</td>
<td>Directed Research (v) I, II</td>
<td>Jackson, Krohn, Mason, M. Steinberg</td>
<td>Individual reading or research. Pre: consent of instructor.</td>
</tr>
<tr>
<td>800</td>
<td>Thesis Research (v) I, II</td>
<td>Scott</td>
<td>Pre: consent of instructor.</td>
</tr>
</tbody>
</table>

Journalism (Journ)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Instructor(s)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>150</td>
<td>The Press and Society (3) I, II</td>
<td>Nam, Ward</td>
<td>Analysis and evaluation of American journalism as shaped by historical, legal, economic, social forces; comparison/contrast with the world press.</td>
</tr>
<tr>
<td>206</td>
<td>News Editing (3) I, II</td>
<td>Scott</td>
<td>News and photo editing, headline writing, publications makeup. Pre: 205.</td>
</tr>
<tr>
<td>216</td>
<td>Typography (3) I</td>
<td>Scott</td>
<td>Basic printing procedures and design; history of typography.</td>
</tr>
<tr>
<td>225</td>
<td>Public Affairs Reporting (3) I, II</td>
<td>Hillman</td>
<td>Legal, technical and professional problems in public affairs reporting.</td>
</tr>
<tr>
<td>260</td>
<td>Mass Media (3) I</td>
<td>Scott</td>
<td>Mass communications as a product of technological, industrial organization; characteristics of mass media and consumer response to media.</td>
</tr>
<tr>
<td>305</td>
<td>Advanced Reporting (4) I, II</td>
<td>Hillman</td>
<td>Intensive training in reporting and writing in sensitive news areas for the advanced student: field work. Pre: 255.</td>
</tr>
<tr>
<td>306</td>
<td>Advanced Editing (4) I, II</td>
<td>Scott</td>
<td>Intensive training in selecting and editing news material for accuracy, clarity and relevance. Pre: 255.</td>
</tr>
<tr>
<td>316</td>
<td>Editing and Publishing (3) II</td>
<td>Scott</td>
<td>Illustration and typographical design; printing processes; newspaper and magazine management; editorial responsibility; laws of libel and copyright.</td>
</tr>
<tr>
<td>325</td>
<td>Writing Non-Fiction (3) II</td>
<td>Wiley</td>
<td>Writing non-fiction articles for magazines and newspapers; preparing material for specific audience; marketing articles. Pre: consent of instructor.</td>
</tr>
<tr>
<td>350</td>
<td>Problems in Journalism (3) I, II</td>
<td>Hillman, Wiley</td>
<td>Professional problems of news media as public institutions. Pre: consent of instructor.</td>
</tr>
<tr>
<td>385</td>
<td>Directed Work (3) I, II</td>
<td>Scott</td>
<td>Internship in media operations under professional and faculty supervision. Pre: consent of instructor.</td>
</tr>
</tbody>
</table>

English as a Second Language

Department Office: Moore Hall 570

Professors: Crymes, Jacobs.
Associate Professors: Higa, Lester, Plaister, D. Steinberg.
Assistant Professors: Afendras, Alter, Blatchford, Collier, Cramer, Jackson, Krohn, Mason, M. Steinberg.
Instructors: Day, Gibson.

English Language Institute (ELI)

Note: Initial placement in ELI courses is by examination only. A grade of CR (Credit) is prerequisite to subsequent promotion or exemption. See "Special Instructional Programs" for further discussion of assignment to and exemption from ELI courses. Normal course sequencing and progression is as follows: 60, 70, 80; 61, 71, 81; 62, 72, 82; 63, 73, 83; ESL 100.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td>Oral English for Foreign Students (0) I, II</td>
<td>Intensive drill to develop facility in speaking and understanding. Language laboratory work also required. Equals 4 credits.</td>
</tr>
<tr>
<td>61</td>
<td>English Structure for Foreign Students (0) I, II</td>
<td>Intensive drill on recognition and production of English grammatical signals. Equals 3 credits.</td>
</tr>
<tr>
<td>62</td>
<td>Reading Program for Foreign Students (0) I, II</td>
<td>Instruction and practice in developing improved reading comprehension and speed, and in effective use of textbooks and reference materials. Equals 3 credits.</td>
</tr>
<tr>
<td>63</td>
<td>Writing Program for Foreign Students (0) I, II</td>
<td>Focus on the similarities and differences between spoken and written English. Practice in taking dictation; and in writing direct address, indirect address, and factual accounts. Equals 3 credits.</td>
</tr>
<tr>
<td>70</td>
<td>Intermediate Oral English for Foreign Students (0) I, II</td>
<td>Further practice in spoken fluency and accurate aural comprehension. Practice in taking effective notes on short lectures and discussions. Language laboratory work required. Equals 3 credits.</td>
</tr>
</tbody>
</table>
English as a Second Language (ESL)

360 The English Language in Hawaii (3) I, II
Survey of major historical, descriptive and pedagogical aspects of English in Hawaii, with emphasis on basic problems in such areas as pidgin and creole languages, linguistic change, and language variation. Students will work with actual language data. Pre: one course in English language or linguistics.

410 Introduction to TESL (3) I, II
Gibson, Plaister, M. Steinberg
Introduction to language systems, materials and techniques for teaching English as a second language. For nonmajors.

425 Linguistics and Reading (3) I
Jackson, Mason, Plaister
Survey of research related to reading process and development of methodology in the teaching of reading. Particular attention given to psycholinguistic investigations of reading and comparison of reading in first and second languages. Pre: English 320 or equivalent. Required for B.Ed. in English Language Teaching.

450 English Syntax (3) I, II
Crymes, Day, Jacobs
Basic course in English syntax primarily within the generative transformational framework; implications for the language teacher. Required for B.Ed. in English Language Teaching.

455 Materials for Teaching English Grammar (3) I
Crymes, M. Steinberg
Critical examination of current English grammar texts for first and second language learners to gain insights into the assumptions about language and language learning which underlie them. Required for B.Ed. in English Language Teaching.

460 English Phonology (3) I, II
Krohn
Basic course in English phonetics and phonology with particular attention paid to areas of interest to language teachers. Introduction to current work in English generative phonology. Required for B.Ed. in English Language Teaching.

465 Materials for Teaching English Phonology (3) II
Jackson, M. Steinberg
Critical examination of texts and materials for the teaching of English phonology and orthography for first and second language learners including applications of contrastive analysis. Required for B.Ed. in English Language Teaching.

470 Psycholinguistics and Language Teaching (3) II
Nature of language: language, thought and culture; language acquisition: implications for language teaching. Required for B.Ed. in English Language Teaching.

530 Internship in ESL (3) I, II
Teaching or research under supervision of cooperating institution. May be repeated. Pre: consent of instructor.

530B Topics in ESL: Language Teaching (3) I, II

530C Topics in ESL: English Language (3) I, II

530D Topics in ESL: Language Acquisition (3) I, II
May be repeated.

604 Materials Selection and Adaptation (3) I, II
Blatchford, Jackson, Plaister
Principles of selecting materials: preparation of supplements and adaptations.

610 Teaching English as a Second Language (3) I, II
Blatchford, Jackson, Mason, Plaister
Analysis of methods of teaching English as a second language; implications of recent and current research. Pre: 604.

611 Problems in TESL (3) I, II
Blatchford, Jackson, Plaister
Problems in testing, the teaching of literature in a reading program; design of teacher training curricula; individualization of instruction; cultural aspects of classroom interaction; bilingual education. For the experienced teacher of ESL. Pre: field experience and consent of instructor.

650 Psycholinguistics (3) I, II
Higa, D. Steinberg
Empiricist, rationalist and behaviorist foundations for language acquisition: cognitivist and behaviorist learning theories; competence and performance; children’s language acquisition; implications for language teaching. Pre: 450, Ling 320 or equivalent.

651 Advanced English Syntax (3) II
Crymes, Jacobs
Implications of recent grammatical research into the English language. Special attention to grammatical questions arising from ESL teaching/learning situations. Pre: 450.

660 Language, Culture, Society and Language Education (3) I, II
Afendras, Higa, D. Steinberg
Introduction to sociolinguistics, ethnography of speech, and sociology of language with special reference to language teaching. Attitudes and behavior toward language; bilingualism, diglossia, and language planning; the Whorfian hypothesis.

699 Directed Reading (v) I, II
Individual reading in various fields of teaching English as a second language. Pre: consent of department chairman and instructor.

720 Second Language Testing (3) I, II
Blatchford, Jackson, Mason, Plaister
Measurement and evaluation of achievement and proficiency in second language learning. Pre: 610 or consent of instructor.

730 Seminar in ESL (3) I, II
Current issues and problems in language teaching and learning. Development of individual projects in research or materials construction. Pre: 610 or 611 or consent of the instructor.

750 Seminar in Developmental Psycholinguistics (3) I, II
Advanced study of acquisition of syntax, semantics and phonology in child and adult; bilingualism and intelligence; language and thought; implications for language teaching. Pre: 650.

799 Directed Research (v) I, II
Individual research in various fields of teaching English as a second language. Pre: consent of department chairman and instructor.

800 Thesis Research (v) I, II
Thesis research for Plan A students.
European Languages and Literature

Department Office: Moore Hall 470

Associate Professors: M. Baciu, Burns, Crean, Gasinski, Klimenko, Moody, A. Moore, Scherer, Sang, Zants.
Assistant Professors: Ball, Benouis, Dias, Forno, Heien, Ignatius, Littman, Y. Montes, C. Moore, Quinn, Roldán, Sansone, Schweizer.

Instructor: Wernert.

General (EL)

LITERATURE COURSES IN ENGLISH

Note: These courses, given in English, do not require a knowledge of a foreign language. None of the courses counts toward requirements for any undergraduate major in this department, but may be taken as electives outside the major with the consent of the student's adviser. Many of the courses may be taken toward fulfilling the College foreign language/culture requirement (consult the student services office). Also many of these courses, as well as literature courses in the languages, may count toward the University humanities requirement.

111 Latin and Greek In Current Use (2) I or II  Sansone
To broaden English vocabulary through study of Latin and Greek elements in English, with emphasis on words in current literary and scientific use.

112 Greek and Roman Mythology (3) I or II Burns, Littman
The principle myths of Greek and Roman literature.

121 Introduction to Modern Russian Culture (3) I or II  Klimenko
Insights into modern Russian culture as viewed by Russian authors.

161-162 Humanities and the Forging of Western Civilization (3-3) Yr Scherer
Emphasis on experiencing the growth of Western civilization from earliest times as revealed by in-depth examination of man's endeavors in literature, language, music, philosophy, art and architecture.

225 Early Greek Thought (3) I or II Burns, Harter
Comprehensive study of evolution of early Greek thought from its beginnings through Aristotle as expressed in mythology, literature, science, and philosophy. (Cross-listed as Philosophy 225)

251-252 Hispanic Civilization (3-3) Yr  Sang, Schweizer
Study of the way of life of Spanish speaking peoples.

261-262 Civilization of German Peoples and Countries (3-3) Yr Sang, Schweizer
Study of cultural and artistic heritage of the German-speaking countries, with emphasis upon art, music, literature, and philosophy of ideas in Germany, Austria, and Switzerland.

303 Greek Literature (3) I or II  Sansone
Major works of ancient Greece in English translation, including epic, lyric, elegiac, and bucolic poetry, tragedy, comedy, history, philosophy, oratory, and romance.

304 Roman Literature (3) I or II  Ball
Major writers of ancient Rome in English translation, including epic, lyric, elegiac, and bucolic poetry, tragedy, comedy, history, philosophy, oratory, satire, and the novel.

305 Greek and Roman Drama (3) I or II  Sansone
Major works of Aeschylus, Sophocles, Euripides, Aristophanes, Menander, Plautus, Terence and Seneca.

306 Ancient Epic (3) I or II  Littman
Study of the Iliad, the Odyssey, the Aeneid, and selections from other ancient epics of the Ancient Near East, Greece and Rome.

331 19th-Century Russian Novel (3) I or II  Klimenko
Survey of important novelists in English translation, particularly Gogol, Goncharov, Turgenev, Saltykov, Dostoevsky, Tolstoi.

332 20th-Century Russian Literature (3) I or II  Klimenko
Survey of important literary movements and authors from Gorki to Solzhenitsyn. Lectures and discussions of most important works of this period.

333 Ideology and Literature in the Soviet Society (3) I or II  Klimenko
Reading and discussion of contemporary Soviet prose, poetry and plays in conflict with Soviet ideology, and demands of the ideology upon literary art.

356 Latin American Literature (3) I or II  Knowlton
Reading and discussion of classic works of Latin American literature in English. Purpose is to provide insight into Latin American culture through its literature.

360 The Rebel Hero in Spanish Literature (3) I or II  Dias
Reading and discussion of classic works of Spanish literature, with emphasis on how each work's hero deals with his particular circumstance and how this represents an aspect of Spanish culture.

371 The French of the Pacific (3) I or II  Klimenko
European presence in the Pacific, in relation to literature, art, culture and civilization.

372 Franco-American Relations in the 18th Century (3) I or II  Jackson
Literary and philosophical relations in the 18th century. Contributions of American to French literary trends during the 18th century.

373 European Poetry in the Middle Ages (3) I or II  Sansone
Heroic poetry of medieval Europe: Nibelungenlied, Chanson de Roland, Cid, and Scandinavian sagas; magical incantations; war chants; vagabond lyrics and love lyrics of the troubadours and Minnesingers of the Hohenstaufen Age: courtly epics, including Parzival and Tristan.

374 Literature and Thought of European Renaissance (3) I or II  C. Moore, Scherer
Main currents of European Renaissance and its impact especially in central Europe, culminating with Protestant Reformation.

375 French Literature since 1800 (3) I or II  Aspinwall, Forno, Jackson
Rapid reading in translation: lectures, discussions, and reports.

380 The Classical German Poet (3) I or II  Scherer, Schweizer
Readings in translation from dramatic works of Lessing, Goethe, and Schiller, and lectures on philosophical and aesthetic viewpoints of leading writers of the German Enlightenment. Storm and Stress, and Classical period.

381 The Modern German Poet (3) II  C. Moore, Scherer
Perspective of reality and poetic representations in the 20th-century world, including influences from Orient and Eastern philosophy. Open to lower division students.

382 German Expressionism (3) I or II  Scherer
Search for the "new man" and the revival of a humanity gone astray through world wars and technological "progress."

397 French African Literature (3) I or II  Jackson
Works reflecting the development of black African literature in French during the 20th Century. Major themes of negritude, national political unity, colonialism and traditional culture.

405 European Tragedy (3) I or II  Dias, Forno, Sansone, Schweizer
Comparative study of selected tragedies from ancient and modern European literature, team taught by members of the department of European languages and literature.

497 Dutch Colonial Literature (3) I or II  C. Moore
Dutch colonies and trade routes and their reflection in Dutch literature.

LANGUAGE COURSES

199 Directed Language Study (v) I, II  Direct study in European languages not taught on regular basis (e.g., Danish, Rumanian, etc.), depending on demand and staff. Prerequisite: permission of department chairman.
399 Directed Reading (v) I, II
Individual projects in various fields. Limited to senior majors with 2.7 grade-point ratio, or 3.0 grade-point in department major. Pre: permission of department chairman.

620 Seminar: Topics in Language or Literature (3) I or II
Staff
Study, in English, of topics, periods, etc., in the languages or literatures taught in this department. May be repeated for credit. Pre: consent of chairman of department.

630 Seminar in Research Methods (v) I or II
(1) French, (2) Spanish, (3) German, (4) Classics, (5) Russian. Study of source materials with emphasis upon basic research tools and methods.

699 Directed Research (v) I, II
Pre: consent of department chairman.

French (Fr)

Note: All courses are conducted in French.

101-102 Elementary French (4-4) Yr
Conversation, laboratory drill, grammar, reading.

103 Intensive Elementary French (8) I, II
Meets 2 hours daily, Monday through Friday. In one semester the contents of French 101-102 will be presented.

201-202 Intermediate French (3-3) Yr
Reading, conversation, laboratory drill, composition. Pre: 102 or equivalent for 201; 201 or 207 for 202.

207-208 Intermediate French: Culture and Conversation (3-3) Yr
Reading and discussion of varied material dealing with French culture and daily life. Various realia and audio-visual aids will be used. May be taken in lieu of 201-202. Pre: 102 or equivalent for 207; 207 or 201 for 208.

210 Accelerated Intermediate French (6) I or II
Course contents of 201-202 covered in one semester. Meets daily for one hour, Monday through Saturday, with daily laboratory practice. Pre: 102 or equivalent.

301 Phonetics and Pronunciation Practice (3) I, II
Ignatius, 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.

306 Structure of French (3) II
Bénouis, Niedzielski
Study of structure of contemporary French as analyzed by descriptive linguists. Pre: 202 or equivalent.

307-308 Continuing French for Nonmajors (3-3) Yr
Speaking, reading, and writing French for practice and enjoyment. Emphasis on current events and day to day social situations. Not open to French majors. Pre: 202 or 208 or consent of instructor.

311 Advanced Conversation (3) I, II
Bénouis, Niedzielski
Systematic practice designed to develop student's control of spoken French. Attention to further development of vocabulary which will permit accurate and mature expression on variety of topics. Pre: 202 or equivalent.

312 Advanced Composition (3) I, II
Emphasis on strengthening facility with language through further training in syntax, structure and composition writing. Pre: 202.

331-332 Survey of French Literature (3-3)
M. Baciu, Jackson, Ignatius
Survey of French literature covering major authors and movements. Pre: 311-312 with which either 331 or 332 may be taken concurrently.

361 French Civilization (3) I
Bénouis
Survey of culture and institutions of modern France. Pre: 202 or equivalent. May be taken concurrently with 311 or 312.

407 Introduction to Medieval Language and Civilization (3) I
Ignatius, Niedzielski
Introduction to medieval language through contrastive analysis with modern French. Selected readings on medieval history and civilization. Pre: either 311-312 or 306.

408 Masterpieces of Medieval Literature (3) II
Ignatius, Niedzielski
Sampling taken from each genre: epic, novel, verse and prose tale, lyric poetry, chronicle, theatre, didactic literature. Elementary readings in original text with edition giving modern French translations. Pre: 407 or equivalent.

410 Masterpieces of 16th-Century Literature (3) II
Bénouis
Sampling taken from all major writers of the period. Readings in original text with edition giving modern French equivalents for difficult words. Pre: 331 or 332.

411-412 Masterpieces of 17th-Century Literature (3-3) Yr
Bénouis, Forno
1st semester: Drama. Study of the principal works of major dramatists of the 17th century: Corneille, Moliere, Racine. 2nd semester: Non-dramatic literature. Study of principal movements and major authors of non-dramatic prose and poetry of 17th century. Pre: 331 or 332.

413 Masterpieces of 18th-Century Literature (3) II
Forno
Pre: 331 or 332.

415-416 Masterpieces of 19th-Century Literature (3-3) Yr
Aspinwall, Ignatius, Jackson

420 20th-Century French Novel (3) I or II
Jackson, Zants
Study of major French novelists of 20th century and their works. Gide, Proust, Mauriac, Sartre, Camus, etc. Pre: 331-332.

421 20th-Century French Theatre (3) I or II
M. Baciu

422 20th-Century French Poetry (3) I or II
Aspinwall
Explication and discussion of poems by such poets as Valery, Claudel, Apollinaire, Supervielle, Saint-John Perse, Breton, Desnos, Eluard, Aragon, Char, Revery. The goal is appreciation. Desirable preparation: 331-332.

425 Current French Literature (3) I or II
M. Baciu, Zants
Major literary works and trends of last thirty years which directly reflect the dilemma of modern man. Pre: 331 or 332.

491 Seminar in French Literature (3) I, II
Study of authors or a period. Pre: senior standing, honors, or permission of division chairman. May be repeated for credit.

601 Seminar in 20th-Century French Literature (3) I or II
Aspinwall
Study of authors and movements of modern period.

602 Seminar in French Poetry (3) I or II
Aspinwall
Technical study of representative poems from Renaissance to the present.

603 Masterpieces of the 17th Century (3) I or II
Bénouis, Forno
Study of dramatic or prose works of the Classical period.

651 Philosophic Currents in the 18th Century (3) I or II
Forno, Jackson
Study of philosophic movements and their impact on the social, political and literary life of the period and the modern era.

666 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.
671 History of the Language (4) I Ignatius, Niedzielski

672 Seminar in Medieval Literature (3) I or II Ignatius, Niedzielski
(a) Medieval Lyric Poetry: (b) Medieval Epic and Romance: (c) Medieval Drama and Prose. Genesis and evolution of literary genres from the 12th to 15th centuries. May be repeated for credit.

677 Seminar in French Language (3) I or II Niedzielski
Study of problems in French language, such as: dialectology, linguistic geography, sociolinguistic phenomena in France. May be repeated for credit.

681 Seminar: The Novel in France (3) I or II Forno, Jackson, Zants
Study of novels which have influenced movements or established techniques. May be repeated for credit with consent of chairman of graduate field.

685 Seminar in Realism in French Literature (3) I or II Jackson
Study of the major authors and works relevant to the development of the realistic school in the novel and the theatre.

690 The Theatre in France (3) I or II
Historical development of genre and study of major dramatists who have influenced movements or established techniques. Pre: 6 credits at 400 level or equivalent.

699 Directed Research (v) I, II
Pre: consent of department chairman.

735 Seminar in French Literature (3) I or II
Study of authors or a period. Pre: consent of chairman of graduate field. May be repeated for credit.

800 Thesis Research (v) I, II

**German (Ger)**

*Note: All courses are conducted in German.*

101-102 Elementary German (4-4) Yr
Conversation, laboratory drill, grammar, reading.

201-202 Intermediate German (3-3) Yr
Reading, conversation, laboratory drill, composition. Pre: 102 or equivalent for 201; 201 or 207 for 202.

203 German Phonetics (3) I or II A. Moore, Seymour
Exercises in German pronunciation, reading, speaking: laboratory exercises. Pre: 102. May be taken concurrently with 201, 202, 207, or 208.

207-208 Perspectives of Contemporary Germany (3-3) Yr A. Moore, C. Moore, Schweizer
Discussions in the language of the modern German scene. Emphasis on developing practical communication skills utilizing records, tapes, videotapes, films, film strips, slides, newspapers, magazines, etc. Pre: 102 or equivalent for 207; 201 or 207 for 208. Completion of 208 satisfies B.A. language requirement.

211-212 Intermediate: Scientific German (3-3) Yr
Emphasis on developing rapid reading skill for comprehension. Practice in listening to papers, lectures, etc., in scientific fields. Pre: 102 or equivalent for 211; 211 for 212. B.S. candidates only: B.A. science majors by permission of department chairman.

215 Intermediate: Readings in the Humanities (3) I or II Schweizer
Emphasis on developing rapid reading skill for comprehension. Primarily for graduate students. others by permission of department chairman. Does not count toward language requirement. Pre: 102 or equivalent or S106.

305-306 Composition and Conversation (3-3) Yr Crean, Dauer, A. Moore
Designed to develop proficiency in German sentence structure and phrasing: conversation; laboratory drill; exact composition on literary subjects. Pre: 202 or equivalent. Pre: for 306: 305 or permission of chairman.

307-308 Continuing German for Nonmajors (3-3) Yr Crean, C. Moore, Sang
Speaking, reading, and writing German for practice and enjoyment. Emphasis on current events and day to day social situations. Not open to German majors. Pre: 202 or 208 or consent of instructor.

312 Introduction to German Literature (3) I or II Scherer
Representative reading and discussion of cultural periods in chronological order starting about 1700 with brief reference to earlier periods. Pre: 305 or consent of chairman. For majors, concurrent registration in 305 is permitted.

315 Structure of German Language (3) I A. Moore, Seymour
Phonological, morphological, syntactic structure of contemporary German, as analyzed by descriptive linguists. Pre: 202 or equivalent.

318 The 19th Century (3) II Schweizer
Short prose form of the 19th century as a basis for techniques in literary analysis. Pre: 202 or equivalent: 315 recommended.

409 Enlightenment-Sturm Und Drang (3) I or II Schweizer
Pre: 306 or equivalent: 318 recommended.

410 Classicism (3) I or II Schweizer
Classical writings of Goethe and Schiller with some reference to other writers. Pre: 306 or equivalent: 318 recommended.

411 Romanticism (3) I or II Dauer
Pre: 306 or equivalent: 318 recommended.

413 German Literature from 1880 to 1918 (3) I or II Sang, Scherer
Origins of German Naturalism and transition into Neoromanticism as exemplified in works of Gerhart Hauptmann and others. Pre: 306 or equivalent: 318 recommended.

414 German Literature from 1918 to 1950 (3) I or II Sang, Scherer
Survey of simultaneous currents in German literature since 1918, with emphasis on trends through 1950. Pre: 306 or equivalent: 318 recommended.

415 Contemporary German Literary Activity (3) I or II Sang
Pre: 306 or equivalent.

428 Survey of German Lyric Poetry (3) I or II Scherer
Survey of development of German poetry from "Stabreimdichtung" to present. Individual interpretation will complement lectures on theoretical and historical background.

432 Stylistics (3) I or II A. Moore
Analysis of prose selections through identification of their structural and semantic elements. Written and oral styles with attention to specific structural elements and their semantic effect. Pre: 306 and 315.

451 Introduction to History of German Language (3) I Seymour
Survey of important developments of the German language from the earliest beginnings to the present. Pre: 315 or consent of instructor.

452 Introduction to Middle High German (3) II Seymour
Introduction to phonology and morphology of Middle High German with selected readings. Pre: 315 or consent of instructor.

489 Literature from the Beginnings to 1700 (3) I or II C. Moore, Scherer
Lectures and discussion of key periods of German literary history from the Germanic beginnings until the Baroque, with emphasis upon chief cultural aspects of each period. Pre: 306 or consent of chairman.

609 Middle High German (3) I Crean, Seymour
Study of grammar, syntax, phonetics, rhythm, meter (alliteration), reading.

610 Middle High German (3) II Seymour
Middle High German literature.

615 History of the German Language (3) I Seymour
Fundamentals of linguistics: development of the language from Middle High German to present.

616 History of the German Language (3) II Seymour
Development of the language from the beginnings through the Old High German period. Pre: 615 or consent of instructor.
632 German Stylistics (3) I or II
A. Moore
Concepts of style and stylistics; comparison of descriptive and applied stylistics; presentation of stylistic phenomena in texts and methods of assessment of style.

650 Seminar: The German Essay (3) I or II
Sang
Development of the genre as exemplified by typical works from various periods.

651 Seminar: The German Novelle (3) I or II
Dauer, Sang, Schweizer
Discussion of representative works of this genre from end of 18th century up to 1955.

652 Seminar: German Drama (3) I or II
Dauer, Sang, Schweizer
Development of dramatic theory and literature exemplified by typical works of literary periods.

653 Seminar: Lyric Poetry (3) I or II
Scherer
Interpretation and comparative study of works of representative German poets.

654 Seminar: The German Novel (3) I or II
Dauer, Sang
Reading and discussion of novels representative of a period, movement, or author.

655 Faust I (3) I or II
Dauer, Schweizer
Short history of Faust theme; Goethe's image of the "small world" or lower plane of human striving. (Alt yrs)

699 Directed Research (v) I, II
Seymour
Pre: consent of department chairman.

735 Seminar (3) I or II
Study of authors, topics, a genre, or a period. Pre: consent of chairman of graduate field. May be repeated for credit.

800 Thesis Research (v) I, II
Seymour

---

Latin (Latin)

101-102 Elementary Latin (3-3) Yr
Littman
Vocabulary and grammar, with reading of simple Latin.

103 Intensive Elementary Latin (6) I or II
Ball
Meets one hour daily, Monday through Saturday. In one semester contents of Latin 101-102 presented.

201-202 Intermediate Latin (3-3) Yr
Ball
Review of grammar, reading of selections from prose and poetry. Pre: 102 or the equivalent.

301-302 Structure of Latin (3-3) Yr
Littman
Intensive study of structural, idiomatic and stylistic aspects of Latin. Pre: 202 or permission.

401 Historians (3) I or II
Littman
Reading of Livy, Sallust, Tacitus and other Roman historians. (Alt yrs) Pre: 202 or permission.

409 Lyric Poets (3) I or II
Ball
Selections from foremost Latin lyricists, Horace, Catullus, Propertius, Tibullus. Pre: 202 or permission. (Alternates with 401)

420 Vergil (3) I or II
Ball
Pre: 202 or permission. (Alt yrs)

427 Satire (3) I or II
Burns
Selected readings from Horace, Juvenal, Martial. Pre: 202 or permission. (Alt yrs)

428 Drama (3) I or II
Burns
Selected dramas of Plautus and Terence. Pre: 202 or permission. (Alternates with 427)

433 Roman Philosophy (3) I or II
Ball, Burns
Pre: permission. (Alt yrs)

434 Lucretius (3) I or II
Ball, Burns
De Rerum Natura. Pre: permission. (Alt yrs)

440 Oratory (3) I or II
Sansone
Pre: permission. (Alt yrs)

490 Seminar (3) I, II
Littman
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.

601 Advanced Latin Compositions (3) I, II
Littman
Study of grammar, syntax and stylistics.

610 Literature of the Republic (3) I, II
Ball, Burns
Roman literature before Augustus.

611 Augustan Literature (3) I, II
Ball, Burns
Study of Roman literature in Livy, Vergil, Horace, Ovid, etc.

612 Literature of the Empire (3) I, II
Ball, Burns
Readings in Lucan, Juvenal, Martial, Nepos, Suetonius, etc.

651 Seminar in Roman Literature (3) I, II
Burns
Study of an author, period, genre, or work of Roman literature. May be repeated for credit.

699 Directed Research (v) I, II
Pre: consent of department chairman.

800 Thesis Research (v) I, II

---

Russian (Rus)

For information on Russian Area Studies Certificate see p. 40.

101-102 Elementary Russian (4-4) Yr
Heien
Conversation, lab drill, reading, writing, grammar.

161 Russian for Reading Proficiency (3) I
Heien
Cursory study of main points of Russian grammar to prepare students to read Russian in their own fields of study. Pre: primarily for graduate students, but open to undergraduates with consent of department chairman. Cannot be used to fulfill undergraduate language requirement. Meets five days a week.
162 Russian for Reading Proficiency (3-3) Yr Heien
Reading in selected texts from those fields in which the students in the class are enrolled. Cannot be used to fulfill undergraduate language requirement.

201-202 Intermediate Russian (3-3) Yr Heien
Reading, conversation, laboratory drill, grammar, composition. Pre: 102 or equivalent.

207-208 Intermediate Scientific Russian (3-3) Yr Heien
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. May not be counted toward major. Recommended to students completing language requirement and who graduate. Pre: 102.

209 Russian Phonetics (3) I or II Gasinski, Heien
Analysis of the Russian phonological system along with practice in speaking and reading to improve the student's oral proficiency. Pre: 102 or equivalent. May be taken concurrently with 201.

303-304 Advanced Oral Practice (3-3) Yr Heien
Systematic practice designed to develop students' control of spoken Russian through vocabulary building and stress on fluency of expression in a variety of subjects reinforced with laboratory drill. Pre: 202 or equivalent.

306 Structure and Composition (3) II Gasinski, Heien
Advanced intensive study of morphological and syntactic structure of contemporary Russian as analyzed by descriptive linguists along with composition and conversation. Pre: 202 or equivalent. 209 strongly recommended.

311-312 Introduction to Russian Literature and Civilization (3-3) Yr Heien
Survey of Russian literature covering major authors and discussion of historical background in order to provide insight into Russian culture. Pre: 202.

411-412 Literature of the 19th Century (3-3) Yr Heien, Klimenko
Reading and discussion of representative writers beginning with Pushkin. Pre: 304 or consent of instructor. (Alternates with 413-414)

413-414 Literature of the 20th Century (3-3) Yr Klimenko
Representative writers before the revolution and contemporary Soviet writers. Pre: 304 or consent of instructor. (Alternates with 411-412)

418 Advanced Composition and Stylistics (3) I Gasinski
Study and analysis of representative prose selections which exhibit variations in style. Practice in written composition. Translation into Russian. Pre: 304 or consent of instructor.

419 Advanced Reading in the Russian Daily Press (3) II Gasinski, Heien
Reading and discussion of current problems from selected articles in the Soviet press.

495 Seminar in Russian Literature (3) I, II Klimenko
Important literary movements and writers. Pre: consent of instructor. May be repeated for credit.

615 Russian Poetry (3) I or II Gasinski
Reading and discussion of classical and contemporary Russian poets. (Alternates with 617)

617 Russian Drama (3) I or II Klimenko
Reading and discussion of representative plays of 18th, 19th and 20th centuries. (Alternates with 615)

618 Comparative Grammar of Russian and English (3) I Heien
Study of selected problems in modern Russian in comparison and contrast with English language. (Alternates with 619)

619 Advanced Russian Syntax (3) II Gasinski
Study of compound and complex Russian sentences, and writing of compositions on advanced level. (Alternates with 618)

621 Historical Grammar of the Russian Language (3) I Fairbanks, Gasinski
Study of the Old Russian language as found in earliest Russian monuments. Phonemics, morphology, and syntax covered and contrasted with modern Russian in order to prepare student for reading of Old Russian texts.

622 Reading in Old Russian Language (3) II Fairbanks, Gasinski
Representative readings in the Old Russian language from 11th to 18th centuries covered, including both secular and religious literature such as chronicles, tales, hagiographic literature, sermons, etc. Pre: 621.

641-642 Old Russian Literature, X-XVIII Centuries (3-3) Yr Gasinski
Study of trends, developments, main representatives, and their thought. from the beginnings. (Alternates with 621-622)

650 History of the Russian Literary Language (3) I Gasinski, Klimenko
Study of the literary language from 18th century to present. Important literary styles, figures, and movements which have greatly influenced form of the literary language as we know it today.

699 Directed Reading (v) I, II Klimenko
Pre: consent of department chairman.

735 Seminar on Problems of Russian Literature (3) I, II Klimenko
Special study of topics, movements, genres, or of their representatives. May be repeated for credit. Pre: consent of instructor.

800 Thesis (v) I, II Klimenko

Spanish (Span)

Note: All courses conducted in Spanish except 405.

101-102 Elementary Spanish (4-4) Yr
Beginning course, primarily emphasizing oral practice. Laboratory drill.

110 Accelerated Elementary Spanish (8) I, II Holton
Meets 2 hours daily. Monday through Friday, with daily laboratory drill. In one semester, work of 101-102 covered.

201-202 Intermediate Spanish (3-3) Yr
Continuation of oral practice and grammar study, with increasing emphasis on production and writing composition. Laboratory drill. Pre: 102 or equivalent for 201: 201 or 207 for 202.

207-208 Conversation and Contemporary Hispanic Culture (3-3) Yr
Continuation of oral practice with emphasis on developing a practical communication skill. Reading and discussion of aspects of contemporary Hispanic civilization. Completion of 208 satisfies B.A. language requirement. Pre: 102 or equivalent for 207: 201 or 207 for 208.

210 Accelerated Intermediate Spanish (6) I, II Holton
Meets 1 hour daily, Monday through Saturday, with daily laboratory drill. In one semester, work of 201-202 covered.

220 Spanish Workshop I (2) I or II Hadlich
Semi-independent individual or small group study and practice of any aspect of Spanish on second-year level. May be taken concurrently with, or independently of, other Spanish courses. May be repeated for credit. Cannot be used toward meeting foreign language/culture requirement. Pre: 102 or equivalent.

303-304 Grammar Practice and Composition (3-3) Yr M. Montes, Y. Montes, Reddan
Selected grammar review and intensive practice in effective use of the written language. Pre: 202 or equivalent.

330 Phonetics and Pronunciation Practice (3) I or II Hadlich, 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 Spanish and Spanish-American Civilization (3-3) Yr Roldán
Survey of culture and institutions of modern Spain and Spanish America, with some attention to their historical backgrounds. Pre: 202 or equivalent.

365-366 Masterworks of Spanish and Spanish-American Literature (4-4) Yr Reddan
Reading and discussion in Spanish of most important works of literature of modern Spain and Spanish America, from beginning to present. Pre: 202 or equivalent.
403-404 Advanced Oral Practice (3-3) Yr  Y. Montes, Roldán
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 Spanish-English Translation (3-3) 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.

420 Spanish Workshop II (v) I or II  Holton
Individual or small group study and practice of any aspect of Spanish on advanced level. May be repeated up to maximum of 3 credits. Pre: 304 or equivalent.

441 History of the Spanish Language (3) I or II  Hadlich, Knowlton, Roldán
Pre: 202 or equivalent; one semester of college Latin or equivalent.

444 Spanish Dialectology (3) I or II  Hadlich, Holton, Knowlton
Study of principal regional and social variants from cultured standard Castilian encountered in language of Iberian Peninsula, America, Philippines. Pre: 450 or consent of instructor.

450 The Structure of Spanish (3) I or II  Hadlich, Holton
Analysis of morphological, syntactic, and semantic features of Spanish as they relate to teaching. Pre: 304 and 330.

465-466 Modern and Contemporary Spanish Literature (3-3) Yr  Diaz, M. Montes, Y. Montes
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.

481 Spanish-American Short Story and Theater (3) I

482 Introduction to Spanish-American Novel (3) I or II
Critical study of major Spanish-American novels. Pre: 481 or consent of instructor.

484 Introduction to Spanish-American Poetry (3) II  S. Baciu, Moody
Broad survey of Spanish-American poetry from colonial times to the present. Pre: 482 or consent of instructor.

490 Hispano-Philippine Literature (3) II  Knowlton
Study of important writers in Spanish from the Philippine Islands. (Alt yrs; offered 1973-74) Pre: 202 or equivalent.

625 Stylistics and Advanced Composition (3) I or II  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.

630 Topics in Spanish Linguistics (3) I or II  Hadlich, Knowlton
Aspects of linguistic analysis of Spanish including among others: (a) syntax; (b) morphology and phonology; (c) Old Spanish; (d) American Spanish; (e) Peninsular dialects, etc. May be repeated for credit. Pre: consent of chairman of graduate field.

658 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  Knowlton, Roldán
Major works and trends of periods prior to Golden Age. The epic, poetry, and prose.

670 Spanish Literature of the Golden Age (3) I or II  Y. Montes
Aspects of 16th and 17th C. Spanish literature: (a) Theater; (b) Prose; (c) Poetry; (d) Cervantes. May be repeated for credit for the various options.

671 18th and 19th Century Spanish Literature (3) I or II  Dias, Roldán
Representative readings in three literary currents: (a) Neoclassicism; (b) Romanticism; and (c) Realism. May be repeated for credit for the various options.

673 20th Century Spanish Literature (3) I or II  M. Montes
(a) Generation of 1898; (b) Pre-Civil War; (c) Post-Civil War Literature. May be repeated for credit for the various options.

682 Spanish-American Novel 20th Century (3) I or II  S. Baciu, Knowlton
Representative works selected from the following topics: Romanticism, Naturalism: novel of the Mexican Revolution, novel of the land, Indianist novel; psychological, political, existentialist, structuralist, baroque, vitalist, mythic, and propagandist novel. May be repeated for credit. Pre: consent of chairman of graduate field.

684 Spanish-American Lyric Poetry (3) II  S. Baciu, Moody

686 16th-19th Century Spanish American Literature (3) I or II  Knowlton
Spanish-American literature of the Colonial Period: conquest, baroque, neoclassicism; and Independence Period: Romanticism, Realism, and Naturalism.

695 Seminar in Hispanic Literature (3) I, II  S. Baciu, M. Montes, Y. Montes
Study of a period, author, genre or region. Pre: consent of instructor. (May be repeated.)

699 Directed Research (v) I, II
Pre: consent of department chairman.

800 Thesis Research (v) I, II

---

**Dutch (Du)**

311-312 Reading, Comprehension, and Speaking Skills (3-3) Yr  C. Moore
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.

**Italian (It)**

311-312 Comprehension, Speaking and Reading Skills (3-3) Yr  C. Moore
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 language requirement. Pre: equivalent of Latin, Spanish, French or Portuguese at the 102 level.

361-362 Intermediate Italian (3-3) Yr  C. Moore
Continuation of 311-312. Reading, conversation, grammar, laboratory practice. Cannot be used to fulfill language requirement. Pre: 312 or equivalent.

**Polish (Polish)**

319-320 Introduction to Polish (3-3) Yr  Gasinski
Introduction to modern Polish. Grammar, reading, and some speaking. References to other Slavic languages depending upon background of students. Cannot be taken to fulfill College language requirement. Pre: none; 1 year of Russian desirable.

419-420 Topics in Polish Literature and Culture (3-3) Yr  Gasinski
Treats the major works and trends of Polish literature through readings of excerpts in Polish as well as others in English translation. Pre: 1 year of Polish or equivalent.

**Portuguese (Port)**

101-102 Elementary Portuguese (4-4) Yr  S. Baciu
Reading, conversation, laboratory drill, grammar.
201-202 Intermediate Portuguese (3-3) Yr S. Baciu, Knowlton, Moody
Reading, conversation, writing, laboratory drill. Pre: 102 or the equivalent.

360-361 Introduction to Luso-Brazilian Literature (3-3) Yr S. Baciu, Knowlton
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.

Geography (Geog)

Department Office: Physical Science Bldg. 315

Professors: Armstrong, J.H. Chang, S.D. Chang, Fryer, Fuchs, Kornhauser, Pirie, Pitts, Street.
Associate Professors: Bach, Chapman.
Assistant Professors: Earickson, Fuller, Masterson, Murton, Schwind, Sommarstrom, Wester, Wingert.
Instructor: Immisch.
Lecturer: Piianaia.

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 (2L, 1Lb) Immisch, Street, Wester
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 II (3) I, II Fuller, Kornhauser, Masterson
Geography of world's major cultural regions: emphasis on geographic aspects of contemporary economic, social, political conditions. Pre: 101.

151 Geography and Contemporary Society (3) I, II Sommarstrom
Elements of economic geography and resource management: population and urban geography; application to current problems of developed and underdeveloped worlds.

201 Atmospheric Pollution (3) I, II (2L, 1Lb) Bach
Interdisciplinary approach to air pollution: Discussion of chemical, meteorological, health, economic, technological, control, legal, and public awareness aspects of air pollution.

SYSTEMATIC PHYSICAL GEOGRAPHY

300 Introduction to Climatology (3) I J.H. Chang

310 Modification of the Biosphere (3) II Street

314 Geography of the Tropics (3) I Murton
Analysis of physical environmental and resource potential of tropics: problems of human use and occupancy.

400 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.

405 Water Resources Management (3) II
Hydrologic cycle including precipitation, evaporation, transpiration, infiltration, ground water and runoff, methods of collection and analysis of hydrologic data and their use in management and development of the resource system. Pre: 101 or consent of instructor.

406 Applied Climatology (3) I Bach
Introduction to forest-, topo-, bio- and air-pollution climatology. Emphasis on energy budget approach. Literature, instrumentation, methods of analysis. Pre: 300 or GG 101-102 or consent of instructor.

407 Air Pollution Meteorology-Climatology I (3) I Bach
Introduction to general air pollution meteorology and climatology. Literature, agencies, instrumentation. Statistical and graphical methods of analyses. Pre: 300 or GG 101-102 or consent of instructor.

408 Air Pollution Meteorology-Climatology II (3) II Bach
Advanced theory and application: diffusion computations, urban diffusion experiments, tracer studies and pollution forecasting, air quality cycles, pollution incidence and surveys, industrial plant site selection, city climate and air pollution. Application to environmental planning. Pre: 407 or consent of instructor.

410 Quaternary Environments and Man (3) I Wester
Nature of past environments and their reconstruction. Ecological adjustments related to fluctuating conditions during the Quaternary, scene of man's emergence and spread over the earth. Pre: 101 or consent of instructor.

415 Medical Geography (3) II Armstrong
Geographic aspects of selected health and disease topics and interrelationships with elements of physical, biological, cultural environment. Geography of communities and their habitats as related to health. Emphasis upon theoretical approaches to problems and research. Pre: 380 or equivalent. Biol 120 or Zool 101 or equivalent, or consent of instructor. (Not offered 1973-74)

600 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 HUMAN GEOGRAPHY

326 Conservation and Resource Management (3) I Sommarstrom

328 Perspectives on Environment and Culture (3) I Murton
Concepts and methods of cultural geography. Emphasis on understanding adaptations and adjustments to environment in past and present in different societies. Examination of man-environment decision processes and models.

330 Population Geography (3) I Chapman
Spatial view of human populations: distribution, structure and internal dynamics. Emphasis upon approaches to research and development of a methodology.

335 Political Geography (3) I or II
Geographic background of international politics and national power. Case studies of problem areas and boundary problems.

351 Elements of Regional Science (3) I Earickson
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.

420 Location Theory and Regional Analysis (3) I Schwind
Location theories concerned with agricultural, manufacturing and tertiary activities and with urban systems. Basic methods of location analysis. Paths toward application in regional economic planning. (Identical to Econ 490.) Pre: 151 or Econ 300-301 or consent of instructor.

421 Urban Geography (3) I Schwind
Origins, functions, and commercial and residential activity patterns of modern cities and metropolitan regions. Location and interaction of cities in urban systems. Problems of urban growth and pathology. Pre: 151 or consent of instructor.
423 Urbanization and Urban Problems in Asia (3) II Fryer
Role of urbanization in Asian economic and social development. Problems arising from rapid city growth. Emphasis on Southeast Asia but with some attention to East Asia and South Asia.

425 Spatial Analysis of Social Behavior (3) I or II Earickson
Behavioral aspects of spatial relations, movement and information flow. Structure of mental maps; group perception of space; measurement and utility of qualitative environmental variables in spatial investigation. Application to urban structure, human interaction, and urban planning. Pre: upper division standing in social sciences. 380 or equivalent background in quantitative methods or consent of instructor.

612 Ecological Concepts and Planning (3) I Armstrong
Concepts of human ecology as bases for environmental management planning with emphasis on comprehensive health planning. (Identical to PH 612.) Pre: consent of instructor. (Not offered 1973-74)

620 Regional Economic Analysis (3) I or II
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 Econ 690.) Pre: 420 or Econ 310, 492 or equivalent.

621 Urban Systems and Analysis (3) II
Use of descriptive and predictive urban models; consideration of individual and aggregate behavior, structure, and institutions in urban areas and how they interrelate; relationship of planning and public policies to urban spatial structure. Pre: 380 or equivalent and consent of instructor.

632 Field Study of Population (3) II Chapman
Concepts and techniques in the field study of non-literate (tribal and peasant) populations. Designed for graduate students in the social sciences actively planning field research that involves taking a census of a study population. (Identical to Anth 632.) Pre: consent of instructor.

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.

Note: numbers in parentheses indicate former numbers of courses.

350 Geography of Asia (3) I or II S.D. Chang
Introduction to geographic analysis of East Asia, Southeast Asia, South Asia: physical setting, resource endowments, patterns of occupancy, problems of economic transformation. Not open to those who have taken 352, 353, 355, or 356.

368 Geography of Hawaii (3) I, II Pilaniaa
Regional, physical, cultural geography. Detailed study of people and resources.

440 (340) Geography of the United States and Canada (3) I Kornhauser
Emphasis on evolution of present patterns of settlement and economic activity of U.S.

445 (345) Geography of the Soviet Union (3) II Fuchs

452 (352) Geography of Japan (3) I Kornhauser
Regional synthesis of physical and cultural features which characterize economic, social, political geography of Japan. Emphasis on origins and development of cities.

453 (353) Geography of China (3) I S.D. Chang
Geographic interpretation of China in terms of historical evolution of spatial organization, physical conditions, resource base, patterns of agriculture and industry, and characteristics of population and urbanization. Emphasis on spatial aspects of modernization and economic development since 1949.

455 (355) Geography of South Asia (3) II Murton
Physical and human-use regions of Asia, Pakistan, Ceylon, Himalayan kingdoms. Geographic factors in history, politics, economics of the area.

456 (356) 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.

461 (361) Australia and New Zealand (3) I Fryer
Australia and New Zealand in the postwar world. Physical environment and rural industries. Demographic movements, industrialization, urbanization.

465 (365) Geography of the Pacific (3) I Pirie
Physical character of the Pacific and its islands; cultural, political, economic geography of Melanesia, Micronesia, Polynesia (except Hawaii).

475 Introduction to Cartography and Airphoto Methods (3) I, II (2L, 1 2-hr Lb) S.D. Chang, Wingert
Principles of cartography: compilation from various sources including aerial photographs, measurements from aerial photographs, alternate forms of data presentation, symbolism, design and map projections.

476 Cartographic Production (3) I (3 2-hr L-Lb) Wingert
Intensive introduction to the tools and methods used in preparation of cartographic materials for illustration and publication. Includes both drafting and reproduction stages. Pre: credit or concurrent registration in 375 or consent of instructor.

477 Advanced Cartography (3) II (3 2-hr L-Lb) Wingert
Special topics in cartography: computer mapping, relief representation, map reproduction methods, use of color, analytic map interpretation, and experimental cartography. Pre: 375 and 475 or consent of instructor.

480 Advanced Quantitative Methods in Geography (3) I Pitts
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.

485 Advanced Applications in Geography (3) I 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

390 Tutorial in Geography (3) II Murton

399 Directed Reading (v) I, II
Limited to senior majors with 2.7 grade-point ratio, or 3.0 grade-point ratio in geography.
490 Senior's Thesis (3) I
Preparation of research paper under individual faculty supervision. Required of majors; those in honors program may substitute Hon 493-494. Pre: 390.

691 History of Geographic Thought (3) II
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.

695 Pro-seminar I—Models in Geography (3) I Fuchs, Staff Concept, theory, models in physical, human and regional geography. Required of entering graduate students.

696 Pro-seminar II—Research Design (2) II Schwind Research methods in geography. Principles of scientific method and applications to research design. Preparation of individual research proposals. Consent of instructor.

700 Seminar in Geography (3) I or II Study and discussion of significant topics and problems. May be repeated.

750 Research Seminar (3) I, II Selected problems in Research (b) Biogeography, I—Street (c) Medical geography, II—Armstrong (d) Resource management (e) Population geography, II—Fuller (f) Economic geography (g) Urban geography (h) Geographic aspects of economic development, I—Fryer (i) Cultural geography, I, II—Murton (j) Conservation, I—I—Sommarstrom (k) Quantitative Models and Methods—Erickson (l) Applied Urban Climatology, I—Bach

791 Field Camp (1) II Field research problems. Camp held between semesters on a neighbor island. Students expected to pay own travel and camp expenses. Pre: 695 or consent of instructor.

799 Directed Research (v) I, II Pre: consent of instructor.

800 Thesis Research (v) I, II

---

**Geology and Geophysics (GG)**

Department Office: HIG Bldg. 253

Senior Professor: Macdonald.


Associate Professors: Daugherty, Fan, Khan, Malahoff, Manghnani, Pankiwskyj, Peterson, Resig.

101-102 General Geology and Geophysics (4-4) I, II (3L, ILb) Macdonald, Pankiwskyj, Peterson Both sections offered both semesters. Principles of geology, geophysics, geochemistry, and paleontology; origin and evolution of the earth, its structure, materials, and life. Field trips. 101: emphasis on physical geology and its place in the environment; 102: topics in geophysics, geochemistry, paleontology, and historical geology. 101 prerequisite for 102.

200 Geology of the Hawaiian Islands (3) I, II Abbott, Macdonald Survey of Hawaiian volcanism, rock types, development of land forms, ground water, engineering materials; field trip.

301 Mineralogy (3) I (2L, ILb) Pankiwskyj Mineral structure, composition and identification by physical and x-ray techniques; crystal form and symmetry. Pre: 101, Chem 113-114 or 117-118.

302 Petrology (3) II (2L, ILb) Macdonald Composition, classification, origin, occurrence of rocks. Pre: 301.


304 Geological Field Methods (2) I, II Abbott, Macdonald (8 hrs. Saturday in field) Methods used in geological investigations in the field. Pre: 303 or consent of instructor.

306 Work of Water (4) II (3L, ILb) Peterson Dynamics of streams, waves, currents, ground water. Pre: 101-102. (Not offered 1973-74)

316 Geomorphology (3) II Abbott Study of landforms and their relation to geologic structure. Pre: 303 or consent of instructor.


360 Principles of Geophysics (3) I Rose Physical laws and physical concepts which describe forces and materials of the earth. Pre: 101-102. Phys 272 or consent of instructor.

411 Paleontology (3) I (2L, ILb) Principles of paleozoology. Morphology and identification of fossils. Pre: 102 or Zool 101 or consent of instructor. (Not offered 1973-74)

412 Micropaleontology (3) II (2L, ILb) Resig Morphology and taxonomy of microfossils and recent microscopic remains capable of fossilization. Ecologic-paleoecologic stratigraphic and sedimentologic significance of microbiota. Pre: consent of instructor. (Offered 1973-74)

415 Regional Geology (3) I (2L, ILb) Moberly Geologic framework of the earth, illustrated by North America and Pacific Ocean Basin. Pre: 303. (Not offered 1973-74)

424 Advanced Mineralogy (5) I (3L, 2Lb) Pankiwskyj Crystal symmetry, crystal chemistry, x-ray crystallography, optical mineralogy. use of petrographic microscope. Pre: 301 or consent of instructor.


426 Advanced Petrology (3) II (1L, 2Lb) Fan Petrogenic theory. microscopic and related laboratory studies of rocks. (a) Igneous. (b) Sedimentary. (c) Metamorphic. All three parts may be taken for credit. Pre: 424.

430 Geology of Asia (2-1) I Fan Stratigraphy, structure and history of major geologic provinces of Asia. Pre: 302 and 303 or consent of instructor. (Alt yrs; not offered 1973-74)

440 Economic Geology (2) I, II Abbott (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 1973-74)

454 Engineering Geology (3) I (2L, ILb) Peterson Application of geology to engineering problems and structures. Includes engineering properties of earth materials, subsurface water, foundation, dam, tunnel, bridge and highway, shore-line, landslide and earthquake engineering, with special emphasis placed on urban and environmental engineering geology problems. Pre: consent of instructor. (Alt yrs: offered 1973-74)

455 Ground-Water Geology (4) I (3L, ILb) Peterson Occurrence, characteristics, movement, quality, development of water in earth’s crust. Pre: 306 or consent of instructor. (Alt yrs; not offered 1973-74)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Instructor(s)</th>
<th>Description</th>
<th>Prerequisites</th>
<th>Offered Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>465-466</td>
<td>Geophysical Exploration (4-4) Yr (3L, 1Lb)</td>
<td>Adams, Malahoff</td>
<td>Theory and methods of exploration on land and sea by means of gravity, magnetic, seismic and electrical techniques. Pre: Math 206 or consent of instructor.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>471</td>
<td>The Magnetic Field of the Earth (3)</td>
<td>Furumoto</td>
<td>Discussions on the observed magnetic field and variations, origin of the geomagnetic field; dynamo theory; magnetohydrodynamics. Pre: 481.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>481</td>
<td>Potential Theory (4)</td>
<td>Daugherty</td>
<td>Theory of the potential, force fields, harmonic functions. Field intensity and Newtonian potential of various geometrical bodies.</td>
<td>Pre: Math 232 or consent of instructor.</td>
<td></td>
</tr>
<tr>
<td>482</td>
<td>Elements of Space Science (3)</td>
<td>Khan</td>
<td>Review of relevant mathematical methods in geophysical and geodetic applications of satellites. Growth of classical orbital theory.</td>
<td>Motion of satellite in central force field. Some of the problems associated with satellite launching. Pre: Math 232 or consent of instructor. (Not offered 1973-74)</td>
<td></td>
</tr>
<tr>
<td>602</td>
<td>Seminar in Petrology (2)</td>
<td>Abbott</td>
<td>Seminars and lectures on origin and occurrence of igneous and metamorphic rocks.</td>
<td>(a) Igneous petrology (Pre: 426); (b) phase petrology (Pre: 425); (c) metamorphic petrology (Pre: 426). May be repeated for credit.</td>
<td></td>
</tr>
<tr>
<td>605</td>
<td>Seminar in Engineering and Ground-Water Geology (3) I, II</td>
<td>Peterson</td>
<td>Geologic controls on occurrence and development of ground water; geologic effects on man-made structures. Pre: consent of instructor. May be repeated for credit.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>607</td>
<td>Seminar in Ore Deposits (2)</td>
<td>Abbott</td>
<td>Consideration of physical and chemical processes and structural controls in formation of metaliferous ore deposits.</td>
<td>Pre: 302 and 303. (Alt yrs; not offered 1973-74)</td>
<td></td>
</tr>
<tr>
<td>609</td>
<td>Seminar in Geomorphology (2)</td>
<td>Abbott</td>
<td>Consideration of special problems and geologic processes in development of land forms.</td>
<td>Pre: 316. (Alt yrs; offered 1973-74)</td>
<td></td>
</tr>
<tr>
<td>614</td>
<td>Advanced Field Study (v)</td>
<td></td>
<td>Field projects in geologic sciences.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>619</td>
<td>Sedimentology (3) I</td>
<td>Fan</td>
<td>Sources of recent sediments and their environments of deposition, textures, and composition. To be followed by Ocean 642 for an integrated survey of young marine sediments. Pre: consent of instructor.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>620</td>
<td>Stratigraphy (3) II</td>
<td>Moberly</td>
<td>Analysis of stratigraphic rock units. Pre: consent of instructor. (Alt yrs; offered 1973-74)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>623</td>
<td>Marine Geology (3) I</td>
<td></td>
<td>Marine geological processes and forms. For students with strong geological background; others see Ocean 622. Pre: consent of instructor.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>625</td>
<td>Seminar in Current Research Topics (v) I, II</td>
<td></td>
<td>(a) Paleontology; (b) applied geology; (c) marine geology; (d) regional geology; (e) geochemistry; (f) lunar and planetary geology; (g) ocean floor spreading. May be repeated for credit.</td>
<td>Pre: consent of instructor.</td>
<td></td>
</tr>
<tr>
<td>653</td>
<td>Solid State Geophysics (3)</td>
<td></td>
<td>Physical properties of crystalline solids of geophysical importance. Lattice dynamics; fundamental interrelationships among the elastic, thermal and optical parameters in the materials behavior, with emphasis on laboratory study. Various equations of state and their use in geophysics. Pre: consent of instructor.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>655</td>
<td>Seismic Source Mechanisms (3)</td>
<td>Adams</td>
<td>Theoretical and observational study of source mechanism for explosions and earthquakes in aerial, underwater, or underground environments. Pre: consent of instructor. (Alt yrs; not offered 1973-74)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>656</td>
<td>Seismic Propagation Phenomena (3)</td>
<td>Adams, Sutton</td>
<td>Propagation of energy through solid media having interfaces, with considerations of effects of heterogeneity and anisotropy. Pre: consent of instructor. (Alt yrs; offered 1973-74)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>657</td>
<td>Analysis and Synthesis of Seismograms (3)</td>
<td>Furumoto</td>
<td>Development of theoretical seismograms for comparison with observed seismograms utilizing analytical and numerical techniques. Pre: consent of instructor. (Alt yrs; not offered 1973-74)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>658</td>
<td>Seismometry and Seismological Model Study (3) I</td>
<td>Sutton</td>
<td>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 1973-74)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>659</td>
<td>Physics of Earth's Interior (3)</td>
<td>Manghnani</td>
<td>Study of earth's interior in light of current knowledge gained from various interdisciplinary sciences. Interpretation of fundamental geophysical (gravity, seismic, magnetic, and thermal) and high-pressure laboratory data with the aim of understanding the elastic and anelastic properties, structure, composition, phase, and temperature distribution of the earth's deep interior. Pre: consent of instructor. (Not offered 1973-74)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>660</td>
<td>Seminar in Solid Earth Geophysics (v) I, II</td>
<td></td>
<td>(a) Tectonics and crustal deformation. (b) Isostasy. (c) Physical 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.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>661</td>
<td>Marine Geophysics (3)</td>
<td>Malahoff</td>
<td>Geophysical exploration techniques and studies of the ocean basin and margins. Offered jointly as Ocean 644. Pre: consent of instructor. (Alt yrs; not offered 1973-74)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>662</td>
<td>Principles of Theoretical Geophysics (3)</td>
<td>Furumoto</td>
<td>Continuum mechanics, potential theory, thermodynamics as applied to tectonics and physics of the earth's interior. Pre: Phys 310-311 or consent of instructor.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>665</td>
<td>Numerical Methods in Geophysical Data Analysis (3)</td>
<td>Loomis</td>
<td>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; offered 1973-74)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>672</td>
<td>Seminar in Geotectonics (3)</td>
<td></td>
<td>Evolution of the ocean basins and margins, from regional syntheses of structure, petrology, geophysics, stratigraphy, and physiography. (Cross-listed as Ocean 672. Pre: consent of instructor. (Alt yrs; not offered 1973-74)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>673</td>
<td>Seminar in Geotectonics II</td>
<td></td>
<td>Evolution of the shields and mountain systems, from regional syntheses of structure, petrology, geophysics, stratigraphy, and physiography. Pre: consent of instructor. (Alt yrs; not offered 1973-74)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>674</td>
<td>Rock Magnetism and Paleomagnetism (3)</td>
<td>Furumoto</td>
<td>Ferromagnetism of rocks, various forms of remanent magnetism; paleomagnetism, application of paleomagnetic data. Pre: consent of instructor. (Alt yrs; not offered 1973-74)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>675</td>
<td>Seminar in Geomagnetism (v)</td>
<td></td>
<td>Geomagnetic phenomena in oceanography; advanced topics on paleomagnetism, geomagnetic phenomena in the ionosphere. May be repeated for credit. Pre: consent of instructor. (Not offered 1973-74)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>680</td>
<td>Seminar in Geodesy (v)</td>
<td></td>
<td>(a) Navigation and precise positioning, includes topics in geodetic astronomy and coordinate conversions. (b) Advanced topics in potential theory and physical geodesy. (c) Gravity measurement and reduction techniques, includes absolute and relative gravity</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
measurements, pendulum and gravimeter methods, and methods of analysis of observational data. (d) Special topics in satellite geodesy. May be repeated for credit. Pre: consent of instructor.

681 Physical Geodesy (4) II Daugherty
Mathematical theory of classical and modern physical geodesy. Boundary value problem of physical geodesy at the geoid and at the physical surface of the earth. Theory of the normal and anomalous gravity fields. Reduction of gravity observations. Calculation of geodetic parameters dependent upon gravity data. Pre: 481 or consent of instructor.

683 Satellite Geodesy (3) II 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 or consent of instructor.

685 Adjustment Computation (3) II Laurila

799 Directed Research (v) I, II
Pre: consent of instructor.

800 Thesis Research (v) I, II

History (Hist)

Department Office: Crawford Hall 208-A


Associate Professors: Beechert, Connors, Ernest, Kang, Lam, Lamley, J. McCutcheon, McKnight, Morris, Saville, Sharma, Speidel, Stephan.

Assistant Professors: Choe, Cubberly, Kuzminski, Ladd, Lind, McGlone, Miller, Nader, Tao, Winchester.

History 151-152 is prerequisite to all advanced History courses.

151-152 World Civilization (3-3) Yr Akita, B. Miller, Stalker
Development of civilization from its prehistoric origins to present. Prerequisite for advanced courses.

161-162 World Cultures in Perspective (3-3) Yr Ernest, Kuzminski, Lind, Nader
Problems in world history: development of ideas, institutions. Pre: consent of instructor. (Alternative for 151-152: freshmen only)

241-242 Civilizations of Asia (3-3) Yr Lam, McKnight, Morris, Sharma, Shinoda
Historical survey of major civilizations of Asia from earliest times to present, including East Asia, Southeast Asia, and South Asia. (Cross-listed as Asian Studies 241-242)

281-282 Introduction to American History (3-3) Yr McGlone, Newby
Interpretive survey of U.S. history from earliest settlements to present.

301-302 History of Warfare (3-3) Yr Saville
Principles and practices of war, warfare and military forces around the world since 1500.

341-342 East Asian Civilization (3-3) Yr Sakai
Basic characteristics of East Asian civilization as they developed in pre-modern China; variant patterns in Japan and Korea. Modernization process and factors which affected the nature of change in these countries.

396 History Colloquium (3) I, II
Special problems in history: extensive, such as consequences of industrialism, or intensive, such as the causes of the American Revolution. Pre: consent of instructor. Recommended for honors students. May be repeated.

401-402 History of South Asia (3-3) Yr Sharma, Stein
Historical survey of Indian culture, society, economics, politics, religion, ideas and institutions—how they originated, developed, and effected culture and were affected by it.

403 Topics in South Asian History (3) I or II
(1) Social and Economic History of Modern India; (2) Social Institutions of Pre-Modern India; (3) South India, Ancient and Modern; (4) Development of Indian Thought.

405-406 History of Southeast Asia (3-3) Yr Lam, Vella
Historical survey of Southeast Asian civilizations and states, including Burma, Thailand, Laos, Cambodia, Vietnam, Malaysia, Indonesia and Philippines.

407 National and Regional History in Southeast Asia (3) I or II Lam, Vella, Van Niel

409-410 History of China (3-3) Yr Kwok
Course of Chinese civilization from earliest times.

411-412 Local History of China (3-3) Yr Lamley
Analysis of political and social conditions in China during the Ch'ing period and 20th century, with emphasis on the local and regional levels.

413-414 History of Japan (3-3) Yr Akita, Stephan, Shinoda
Historical survey of Japanese culture, government, economics, institutions.

415-416 Imperial and Feudal Institutions of Traditional Japan (3-3) Yr Morris
Detailed treatment of political, economic, and social institutions to the 17th century. Pre: 413-414 or equivalent. (Not offered 1973-74)

417-418 History of Korea (3-3) Yr Choe, Kang
Detailed political, economic and social survey of Korean history.

419 European Expansion (3) II Stein
Historical processes in modern European colonization (16th to 20th c.) emphasizing impact upon non-Europeans in Asia and Africa. Asian. Pacific or European credit.

421 Australia and New Zealand (3) I
Major historical developments from colonization to independent nationhood: present problems and policies. (Not offered 1973-74)

422 History of Oceania (3) II Daws
European impact and native response in major island groups, from exploration to annexation, trusteeship and independence. European or Pacific credit.

424 History of the Hawaiian Islands (3) I, II D. Johnson
General course, but with some detail. Emphasis on period of monarchy. Interchangeable credit: Asian, Pacific or American.

425 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.

426 The Ancient Near East (3) I Speidel
The civilizations of the Sumerians, Babylonians, Assyrians, Ancient Egyptians, Hittites, Hebrews and Achaemenid Persians. Asian, or European credit.

427 Ancient Greece (3) II Speidel
Political and cultural history of ancient Greece. Emphasis on discussion of source materials.
428-429 Roman Civilization (3-3) Yr Speidel
Political, social, and cultural history of the Roman Republic and the Roman Empire. Emphasis on discussion of source materials.

430 History of Science (3) I Haraway
Man's changing ideas concerning universe reflected against historical setting. Pre: one year of natural science. (Cross-listed as Sci 430)

431-432 Medieval Europe, 300-1300 (3-3) Yr Ernest
Cultural, social, economic and political changes in development of European community.

433 History of Medieval Germany to 1546 (3) II Ernest
Social, economic, political, constitutional, legal, religious, intellectual and cultural history of Germany from primitive tribal society to the middle of the sixteenth century.

435 Renaissance and Reformation, 1300-1600 (3) I Nader
Ideas and institutions in early period of commercial and national development.

437 Early Modern Europe, 1600-1800 (3) II Cubberly
Traces political evolution and major economic, social, and cultural developments of European states in post-Reformation and pre-Revolutionary periods.

438 French Revolution, 1789-1815 (3) I, II Cubberly
Traces causes, course, and conduct of the French Revolution and Napoleonic periods, their impact upon Europe, and emphasizing the conflict of ideologies inherent in the Revolutionary experience.

439 Europe in the 19th Century (3) I Saville, Winchester
Major political, social, economic and intellectual trends in evolution of Europe from Napoleon to end of World War I.

440 Europe Since Versailles (3) II Saville, Winchester
Problems of contemporary Europe and their historical background.

442 East Central Europe (3-3) Yr Winchester
General history of Poland, Danubian region and Balkans from Middle Ages to present.

443-444 History of Modern Germany (3-3) Yr Saville
Major political, social, economic, and intellectual trends in evolution of Germany since mid-16th century.

445-446 History of France (3-3) Yr Cubberly
Major political, social, economic, and intellectual trends in evolution of France. 1st semester: end of the Middle Ages to the Revolution. 2nd semester: the Revolution to the Fifth Republic.

447-448 History of England (3-3) Yr Lind
Major trends in development of English civilization from origins to contemporary period.

For information on Russian Area Studies Certificate, see p. 40.

449-450 History of Russia (3-3) Yr Wade
Survey of development of Russian thought and institutions, and of territorial expansion. Impact of revolutionary changes. Listed for Russian Studies Certificate.

451-452 Modern Russian and Soviet Foreign Policy (3-3) Yr White
Territorial expansion; frontier and nationality questions: cultural, diplomatic, economic and ideological relations. Listed for Russian Studies Certificate.

453-454 Russian Intellectual and Cultural History (3-3) Yr Wade
Religious and secular traditions, intellectual and social developments, political movements. Listed for Russian Studies Certificate.

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.

457 The Russian Revolution (3) I, II
The causes of the revolution, the revolutionary movements, the February and October revolutions, the civil war.

459 Constitutional History of England (3) I Ernest
Anglo-Saxon institutions; Norman innovations; legal, administrative, parliamentary development under Angevins; rise of cabinet system.

461 Colonial America to 1790 (3) I Cowing
Transit of European culture of 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 Transformation of America: U.S. History 1877-1920 (3) II Margulies
Response to industrialism, emergence of U.S. as world power, progressive movement, World War I and Reconstruction.

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 W. Johnson
World War II, Cold War and beyond; politics from Roosevelt to Johnson; McCarthyism, civil rights; economic and social development.

471-472 History of United States Foreign Policy (3-3) Yr D. Johnson, W. Johnson
History of American foreign policy and diplomacy.

473-474 History of Spain and Portugal (3-3) Yr Nader
Iberian institutions; explorations and colonization experiences in America, Asia and the Pacific; special attention to cultural developments in the second semester.

475 Constitutional History of the United States (3) I Margulies
Origins and development of the constitution from colonial times to present.

477-478 Economic History of the United States (3-3) Yr Beechert
Examination of problems and process of development in the American economy. Role of the entrepreneur, agriculture, and labor are matters of special interest. Recommended pre: 281-282.

479 American Labor History (3) I Beechert
Examination of the conditions of labor in each of the major phases of American development. Working conditions, the political and social response of labor and the community examined. Organized labor in recent history, automation and related problems covered.

480 History of Black Americans (3) II Newby
Achievements of Black Americans and their protests against racial repression and discrimination. Exploration of the meaning of Afro-American historical experience in the United States.

481-482 American Thought and Culture (3-3) Yr McCutcheon, Rapson
Advanced course in American social customs, institutions, intellectual pursuits.

484 The South in American History (3) I Newby
Southern economic, social, intellectual, political development, with special attention to race relations.

485 The City in American History (3) II McCutcheon
Urban growth as factor in shaping social, economic, political, cultural life in U.S.

486 Representative Americans (3) I Margulies, Stalker
Series of biographical sketches of leading characters in American history from Revolution to present. Discussion of common readings.
487-488 History of Latin America (3-3) Ladd Political, economic, social development of Latin American republics from colonial times to present.

489 Sex Stereotypes in History: Definitions (3) I Ladd The history of ideas defining women, those stereotypes which equated women with sex and prescribed traditional roles and those ideas which allowed women other possibilities. Stereotypes will be tested with cross-cultural materials.

490 Sex Stereotypes in History: Protest (3) II Ladd Under what conditions does women's protest develop? How can the experience of women's rights movements in the 19th and 20th centuries be compared in the U.S., England, the U.S.S.R., China, Cuba, and Japan? Pre: 489 recommended.

496 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.


All courses 600-800, except 602, require consent of instructor. All courses over 602 may be repeated for credit.

602 Seminar in Historiography (3) I, II Kuzmiński History of history, and historians; philosophies of history.

603 Colloquium in the Instruction of History (1) I or II Melandy Informal sessions on teaching and professional matters, including the learning process and general responsibilities of instruction. Students encouraged to give lectures or lead discussions under supervision. Field trips to nearby colleges arranged.


619 Seminar in Russian History (3) I or II Wade Research in problems on history of Russia and Soviet Union.

620 Seminar in Russian Foreign Policy (3) II White Research in problems of foreign policy in Russia and Soviet Union.

631 Advanced Problems and Reading in American History (3) I, II Cowing, McGlone, Margulies, Newby Interpretations and literature of important problems of American history.

635 The Colonial Period in American History (3) II Cowing Reading and research in political, social and intellectual history. Pre: 461 or equivalent.


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. (Not offered 1973-74)


661 Seminar in Chinese History (3) I, II Kwok, Lamley, McKnight, Tao, Uhalley Problems and readings 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.


667 Seminar in Korean History (3) I, II Cho, Kang Reading and research in selected topics in Korean history.

675 Seminar in Pacific History (3) I Daws Reading and research in selected topics in history of Oceania. Pre: 422 or 424 or 425 or equivalent. Upper division course in another discipline, with consent of instructor.

701 Research Materials and Methods in Asian History (3) I, II Nunn Bibliography and research methods in Asian history. Discussion of the principal Western and Asian published and archival sources.

709-710 Institutional History of Korea (3-3) Yr Cho, Kang Detailed treatment of developments in political, economic and social institutions of traditional Korea.

711 Korean Historical Sources (3) I, II Cho, Kang Systematic reading of numerous forms of historical literature and documents and training in use of reference materials, all in the original language. Reading knowledge of Korean required; reading knowledge of Chinese and Japanese preferred.


717-718 Chinese Intellectual History (3-3) Yr Kwok 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 China From Classical Antiquity to 750 (3-3) Yr Tao 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.

723-724 China from 750 to 1700 (3-3) Yr McKnight Detailed description of China's political, social and economic history during this period with special emphasis on source materials, interpretive problems and rise of the gentry state.

725-726 Contemporary China Seminar (3-3) Yr Uhalley Topical studies of contemporary China including attention to significant historical antecedents. Pre: 409-410. (Cross-listed as Asian Studies 601)

727-728 Japanese Historical Materials and Sources (3-3) Yr Sakai Examination of different kinds and styles of historical documents. Problems of terminology and interpretation. Reading knowledge of Japanese required.

730 Japan: The Bakumatsu Period (1830-1873) (3) I or II Sakai Analysis of structure and substance of feudal power; pressures for change; transition to the nation-state.
733-734  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 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 Directed Research (v)

800 Thesis Research (v)

Indo-Pacific Languages
Department Office: Webster Hall 311
Professor: Maurer.
Associate Professors: R. Baumer, Gething, Nguyen-Dang-Liem.
Assistant Professors: J. Baumer, Dardjowidjojo, Jenner, Johnson, O’Harrow, Roop, Ward.
Lecturer: de Heer.

General (IP)
In addition to the courses listed here, other languages commanded by individual faculty members may be offered if demand and staff permit. These unlisted languages include Arabic (Classical), Armenian, Avestan, Balinese, Batak, Bisayan, Cham, Javanese, Madurese, Minangkabau, Mon, Muong, Persian (Old and Modern), Sien (Vietnamese), and Tahitian. Persons interested in studying an unlisted language are requested to consult with the departmental chairman as early as possible.

101-102 Directed Elementary Language Study (3-3) Yr
Directed study of a South Asian, Southeast Asian or Pacific language not regularly listed by the department. Pre: consent of instructor.

201-202 Directed Intermediate Language Study (3-3) Yr
Continuation of 102. Pre: consent of instructor.

271 Survey of Asian Languages (3) I
General survey of languages of the area, aimed at giving a nontechnical summary of geographical distribution, historical development, and linguistic, social, and political aspects of the languages. Special attention paid to lexical borrowing, use of a common script, and problems in language engineering, including language reform and establishment of national languages. Conducted in English. (Cross-listed as EALa 271)

301-302 Directed Third-Level Language Study (3-3) Yr
Continuation of 202. Pre: consent of instructor.

361-362 Southeast Asian Literatures in Translation (3-3) Yr
Survey of traditional and modern literatures of Southeast Asia conducted in English for majors in Southeast Asian studies and comparative literature.

365-366 South Asian Literatures in Translation (3-3) Yr
Survey of traditional and modern literatures of South Asia. Fall term devoted to literature written originally in English, spring term to a vernacular literature to be determined by faculty resources and student interest.

401-402 Directed Fourth-Level Language Study (3-3) Yr
Continuation of 302. Pre: consent of instructor.

497 Survey of Structures of Southeast Asian Languages (3) II
Survey of the structures of Burmese, Cambodian, Indonesian, Tagalog, Thai and Vietnamese with emphasis on phonology, morphology and syntax. Pre: Ling 421, 422 and consent of instructor.

499 Directed Studies (v) I, II
Study of a Pacific, South Asian or Southeast Asian language through vernacular readings in various academic fields. May be repeated. Pre: third-level language and consent of instructor.

690 Directed Reading (v) I, II
Directed reading of advanced texts written in a South Asian, Southeast Asian or Pacific language. Pre: consent of instructor.

699 Directed Research (v) I, II
Pre: consent of instructor.

Bengali (Beng)
101-102 Elementary Bengali (3-3) Yr
Development of listening, speaking, reading, and writing colloquial Bengali. Structural points introduced inductively. Meets 1 hour daily, Monday through Friday. Laboratory work.

201-202 Intermediate Bengali (3-3) Yr
Continuation of 102. Introduction to the literary language. Advanced grammar. Meets 1 hour daily, Monday through Friday. Laboratory work. Pre: 102 or equivalent.

301-302 Third-Level Bengali (3-3) Yr
Continuation of 202. Primary emphasis on reading and written work. Introduction to modern literature of Bengal. Pre: 202 or equivalent.

690 Directed Readings in Bengali Texts (v) I
Pre: consent of instructor. May be repeated.

Burmese (Burm)
101-102 Elementary Burmese (3-3) Yr
Development of listening, speaking, reading, writing skills. Structural points introduced inductively. Meets 1 hour daily, Monday through Friday. Laboratory work.

201-202 Intermediate Burmese (3-3) Yr
Continuation of 102. Conversation, reading, writing. Meets 1 hour daily, Monday through Friday. Laboratory work. Pre: 102 or equivalent.

Cambodian (Cam)
101-102 Elementary Cambodian (3-3) Yr

201-202 Intermediate Cambodian (3-3) Yr
Continuation of 102. After completion, student should be proficient in use of all major sentence patterns. Meets 3 hours weekly. Pre: 102 or equivalent.

281-282 Introductory Old Khmer (3-3) Yr
Reading and analysis of inscriptions of the Angkorian period, using graduated romanized texts. Meets 3 hours weekly. Pre: 202 or equivalent. May be repeated.

690 Directed Reading (v)
Directed reading of advanced or specialized texts in Modern, Middle or Old Khmer. Pre: consent of instructor. May be repeated.

699 Directed Research (v)
Directed research involving use of Cambodian literary, historical or technical sources. Pre: consent of instructor. May be repeated.

Hawaiian (Haw)
101-102 Elementary Hawaiian (3-3) Yr
Development of listening, speaking, reading, writing skills. Meets 1 hour daily, Monday through Friday, with 4 out of 5 hours devoted to drill and practice. Daily laboratory work.

131-132 Hawaiian for Reading Proficiency (3-3) Yr
Elementary course in Hawaiian with emphasis on reading and translation.
201-202 Intermediate Hawaiian (3-3) Yr
Continuation of 102. Meets 1 hour daily, Monday through Friday. with at least 2 out of 5 hours devoted to directed drill and practice. Reading of traditional texts. Daily laboratory work. Pre: 102 or equivalent.

201-203 Third-Level Hawaiian (3-3) Yr

401-402 Fourth-Level Hawaiian (3-3) Yr
Advanced reading, writing and discussion in Hawaiian. Transcribing and translating Hawaiian language tapes. Translating English into Hawaiian, and Hawaiian into English. Pre: 302 or equivalent.

435-436 Hawaiian Translation (3-3) Yr
Problems of translation of Hawaiian documents, legends, songs. Pre: 302 or equivalent.

452 Structure of Hawaiian (3) II
Introductory study of the grammar of Hawaiian as analyzed by descriptive linguists. Position within Polynesian language family discussed. Pre: 202 and Ling 102 or equivalent.

Hindi (Hindi)

101-102 Elementary Hindi (3-3) Yr
Development of listening, speaking, reading, writing skills. Structural points introduced inductively. Meets 1 hour daily, Monday through Friday, with at least 3 out of 5 hours devoted to directed drill and practice. Daily laboratory work.

201-202 Intermediate Hindi (3-3) Yr
Continuation of 102. Meets 1 hour daily, Monday through Friday with at least 3 out of 5 hours devoted to directed drill and practice. Daily laboratory work. Pre: 102 or equivalent.

301-302 Third-Level Hindi (3-3) Yr
Continuation of 202. Conversation and advanced reading. Pre: 202 or equivalent.

Ilokano (Ilo)

101-102 Elementary Ilokano (3-3) Yr
Development of listening, speaking, reading, writing skills. Structural points introduced inductively. Meets 1 hour daily, Monday through Friday with 4 out of 5 hours devoted to directed drill and practice. Daily laboratory work.

201-202 Intermediate Ilokano (3-3) Yr
Continuation of 102. Meets 1 hour daily. Monday through Friday with 3 out of 5 hours devoted to directed drill and practice. Daily laboratory work. Pre: 102 or equivalent.

Indonesian (Ind)

103 Accelerated Elementary Indonesian (6) I
Development of listening, speaking, reading, writing skills. Structural points introduced inductively. Meets 2 hours daily. Monday through Friday with 8 out of 10 hours devoted to directed drill and practice. Daily laboratory work.

204 Accelerated Intermediate Indonesian (8) II
Continuation of 103. Meets 2 hours daily, Monday through Friday with 8 out of 10 hours devoted to directed drill and practice. Daily laboratory work. Pre: 102 or equivalent.

303 Accelerated Third-Level Indonesian (6) I
Continuation of 204. Conducted mainly in Indonesian. Meets three times a week, 2 hours each. Emphasis on vocabulary building and extended mastery of sentence structures through reading, composition, and conversation. Laboratory work. Pre: 204 or equivalent.

404 Accelerated Fourth-Level Indonesian (6) II
Continuation of 303. Conducted in Indonesian. Meets three times a week, 2 hours each. Emphasis on creative use of the language for academic topics. Introduction to varieties of speech. Laboratory work. Pre: 303 or equivalent.

Lao (Lao)

101-102 Elementary Lao (3-3) Yr
Development of listening, speaking, reading, writing skills. Structural points introduced inductively. Meets 1 hour daily, Monday through Friday with 4 out of 5 hours devoted to directed drill and practice. Daily laboratory work.

201-202 Intermediate Lao (3-3) Yr
Continuation of 102. Meets 1 hour daily, Monday through Friday with 3 out of 5 hours devoted to directed drill and practice. Daily laboratory work. Pre: 102 or equivalent.

Marathi (Marat)

101-102 Elementary Marathi (3-3) Yr
Development of listening, speaking, reading, writing skills. Structural points introduced inductively. Meets 1 hour daily, Monday through Friday. Daily laboratory work.

Pali (Pali)

381-382 Elementary Pali (3-3) Yr
Reading of simple texts from the Pali Canon. Grammar taught as needed for the reading. Pre: Sanskrit 382 or equivalent.

481-482 Intermediate Pali (3-3) Yr
Continuation of 382. Reading various Hinayana texts. Pre: 382 or equivalent.

Prakrit (Prak)

481-482 Introduction to Prakrit (3-3) Yr
Survey of the principal Prakrits with selected readings and analysis. Pre: Sanskrit 481-482 and Pali 381-382 or equivalent.

Sanskrit (Sansk)

381-382 Introduction to Sanskrit (3-3) Yr
Introduction to basic Sanskrit grammar followed by reading and analysis of progressively difficult classical texts. Pre: consent of instructor.

481-482 Intermediate Sanskrit (3-3) Yr
Continuation of 382. Reading and analysis of classical texts with review of grammar. Pre: 382 or equivalent.

681-682 Third-Level Sanskrit (3-3) Yr
Reading and analysis of various classical texts in 1st semester. Introduction to Veda in 2nd semester. Pre: 482 or equivalent.

683-684 Fourth-Level Sanskrit (3-3) Yr
Reading, analysis and interpretation of various Vedic or Sanskrit texts selected according to students' requests. Pre: 682 or equivalent.

Tagalog (Tag)

101-102 Elementary Tagalog/Pilipino (3-3) Yr
Development of listening, speaking, reading, writing skills. Structural points introduced inductively. Meets 1 hour daily, Monday through Friday, with 3 out of 5 hours devoted to directed drill and practice. Daily laboratory work.
201-202 Intermediate Tagalog/Pilipino (4-4) Yr
Continuation of 102. Meets 1 hour daily, Monday through Friday, with 3 out of 5 hours devoted to directed drill and practice. Daily laboratory work. Pre: 102 or equivalent.

301-302 Third-Level Tagalog (3-3) Yr
Continuation of 202. Conversation, advanced reading and composition. Meets 3 times weekly. Pre: 202 or equivalent and consent of instructor.

361 Philippine Literature in English (3) II
Survey in English from Period of Apprenticeship (1900-29) to Period of Emergence (1945- ). Pre: 1 semester of literature in English Department.

401-402 Fourth-Level Tagalog (3-3) Yr
Continuation of 302. Advanced reading in current literature, with discussion of cultural implications. Includes composition. Meets 3 times weekly. Pre: 302 or equivalent and consent of instructor.

451 Structure of Tagalog (3) I
Introductory study of phonology, morphology, syntax. Pre: 202 or equivalent.

690 Directed Reading (v)
Directed reading and analysis of advanced texts in Tagalog. Pre: consent of instructor. May be repeated.

699 Directed Research (v)
Directed research involving use and analysis of Tagalog sources. Pre: consent of instructor. May be repeated.

Tamil (Tamil)

101-102 Elementary Tamil (3-3) Yr
Development of listening, speaking, reading, writing skills. Structural points introduced inductively. Meets 1 hour daily, Monday through Friday. Daily laboratory work.

201-202 Intermediate Tamil (4-4) Yr
Continuation of 102. Meets 1 hour daily, Monday through Friday. Daily laboratory work. Pre: 102 or equivalent.

Thai (Thai)

101-102 Elementary Thai (3-3) Yr
Development of listening, speaking, reading, writing skills. Structural points introduced inductively. Meets 1 hour daily, Monday through Friday, with 4 out of 5 hours devoted to directed drill and practice. Daily laboratory work.

201-202 Intermediate Thai (3-3) Yr
Continuation of 102. Meets 1 hour daily, Monday through Friday, with 3 out of 5 hours devoted to directed drill and practice. Daily laboratory work. Pre: 102 or equivalent.

303 Accelerated Third-Level Thai (6) I
Continuation of 202. Meets 6 hours a week. Study of modern written texts. Laboratory work. Pre: 202 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.

451-452 Structure of Thai (3-3) Yr
Introductory study of the grammar of Thai as analyzed by descriptive linguists. Standard language and regional variants discussed. Pre: Ling 320 and knowledge of one Southeast Asian language.

Vietnamese (Viet)

101-102 Elementary Vietnamese (3-3) Yr
Development of listening, speaking, reading, writing skills. Structural and cultural points introduced inductively. Meets 1 hour daily, Monday through Friday, with 4 out of 5 hours devoted to directed drill and practice. Daily laboratory work.

201-202 Intermediate Vietnamese (4-4) Yr
Continuation of 102. After completion, student should be proficient in use of all major sentence patterns, able to produce sounds, combination of sounds, tones, and intonation and should have some understanding of Vietnamese culture. Meets 1 hour daily, Monday through Friday. Daily laboratory work. Pre: 102 or equivalent.

301-302 Third-Level Vietnamese (3-3) Yr
Continuation of 202. Emphasis upon vocabulary building, mastery of sentence structures, and cultural appreciation through reading, composition and conversation. Pre: 202 or equivalent.

401-402 Fourth-Level Vietnamese (3-3) Yr
Continuation of 302. Extensive reading and oral discussion with emphasis on academic and cultural topics. Pre: 302 or equivalent.

421-422 Advanced Vietnamese Conversation (3-3) Yr
Systematic practice on academic topics of conversation. Laboratory drill. Pre: 402 or equivalent or consent of instructor.

433-434 Selected Readings in Vietnamese (3-3) Yr
Selected readings in various disciplines selected on basis of student interest and availability of staff. Pre: 402 or equivalent or consent of instructor. May be repeated.

451-452 Structure of Vietnamese (3-3) Yr
Introductory study of phonology, morphology, syntax, including some discussion of linguistic geography. Pre: 402 or equivalent and consent of instructor.

461-462 Introduction to Vietnamese Literature (3-3) Yr
Selected readings in major genres, with emphasis on analysis. First semester devoted to modern literature, second semester to traditional literature, including an introduction to demotic script. Pre: 402 or consent of instructor.

641-642 Contrastive Analysis (3-3) Yr
Comparison of the structure of Vietnamese with that of English or another language in Southeast Asia while using modern linguistic theories. Pre: 451-452 or Linguistics 421-422 or consent of instructor.

690 Directed Reading (v)
Directed reading of advanced Vietnamese texts. Pre: consent of instructor. May be repeated.

699 Directed Research (v)
Directed research based on Vietnamese sources. Pre: consent of instructor. May be repeated.
Information and Computer Sciences (ICS)

Department Office: Keller Hall 319

The department of information and computer sciences provides educational programs and encourages research in numerical and non-numerical information processing in cooperation with the University Computing Center. The program defines the interdisciplinary field of information and computer sciences as the science of processing information by natural or artificial systems. It includes the theory and design of computers and other information processing communication systems. The information and computer sciences M.S. program is intended to serve both the student who is interested in a career in information and computer sciences and the student who expects to use information and computer sciences in another profession. Prospective students with a baccalaureate degree from any field of study will be considered for acceptance. Additional information on this program may be found in the University of Hawaii Graduate Division Catalog.

Professors: Abramson, Gersch, Jones, Kinarivala, Kuo, Lichtenberger, Pager, Peterson, Pitts, Slepian, Watanabe, Weldon.
Associate Professors: Gaarder, Lester, Lin, Rodgers, Sprague, Wallen.
Assistant Professor: Lew.

301-302 Computers and Information Sciences (3-3) Yr

371 Elementary Probability Theory (3) I, II
Sets, discrete sample spaces, problems in combinatorial probability, conditional probability, random variables, mathematical expectations, moments, variances, study of the classical distributions (binomial, Poisson, normal, etc.), applications. (Identical to Math 371) Pre: one year of college level mathematics, including one semester of calculus.

410 Computer Project (3) I, II
Students work in small groups on a project involving application or design of a computer system. Projects chosen from various areas subject to availability of suitable computers and background and interests of students and faculty. Pre: 466 or 467 and consent of instructor.

443 Statistical Data Analysis (3) I or II
Estimation, hypothesis testing, regression and other topics in data analysis, with emphasis on computer applications, and underlying assumptions. Pre: Math 206, ICS 371 or equivalent.

445 Introduction to Random Processes (3) I or II
Linear systems, Fourier transforms, foundations of probability, random variables, functions of random variables, random processes, Gaussian random processes. Pre: Math 206, ICS 371.

446 Information Theory and Coding (3) I
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, ICS 371, junior standing or consent of instructor.

466 Computer Organization and Programming Techniques (4) I, II
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 some general programming language, such as FORTRAN, PL/I, or COBOL.

467 Algorithmic Languages (4) I, II
Introduction to algorithms, languages for describing them, associated programming techniques. Commonly used languages for numerical and non-numerical computation. Pre: knowledge of some general programming language, such as FORTRAN, PL/I, or COBOL.

491 Special Topics in Information Sciences (v) I, II
Staff Course will reflect special interests of visiting and permanent faculty, and oriented toward juniors and seniors. In general, these will be in fields of computer systems, programming languages, artificial intelligence and computer nets. Pre: consent of instructor.

620 Software System Theory (3) I
Lew Mathematical modeling, analysis, and optimization in computer science, with applications to the theoretical study of software systems. Pre: 371, 466, 467, and Phil 445, or consent of instructor.

621 Formal Linguistics (3) I or II
Peterson Introduction to formal theory of languages, their recognition and translation. Grammars, automata, decidability, complexity and related topics. Pre: consent of instructor.

622 The Theory and Construction of Compilers (3) I or II

627 Information Structures (3) I or II
Lew Modelling structures, implementation structures, storage management, representation of procedure, run time representation of programs, specialized data manipulation languages and facilities, data description, file management. Pre: 466, 467.

630 Information Processing in the Nervous System (3) I or II
Gersch Concept, behavior and properties of neural elements, networks and systems, including conduction of the nervous impulse, properties of sensory receptors, neural coding, neural models, the visual system and central control of posture and locomotion. Pre: Math 206.

641 Discrete State Stochastic Processes (3) I or II

644 Pattern Recognition (3) II
Watanabe Describes nature of the problems in pattern recognition and clustering and explains various algorithms. Pre: 371 or knowledge of probability.

646 Parametric Methods in Time Series Analysis (3) I or II
Gersch Scalar and multidimensional autoregressive and mixed autoregressive-moving average models fit to stationary time series. Applications to problems in prediction, spectral analysis, identification of unknown systems and causality arising in meteorology, neurophysiology, structural engineering and geophysics. Pre: 445.

648 Theory of Inference (3) I

650 Time Series Analysis (3) I

655 Applied Regression Analysis (3) II
Jones Fitting a straight line by least squares, multiple regression, hypothesis testing, examination of residuals, dummy variables, stepwise regression, analysis of variance, nonlinear estimation. Computer assignments involving writing regression programs from scratch and using the regression package REGPAK. Pre: 443 or equivalent.
Linguistics (Ling)

Department Office: Moore Hall 569

Professors: Bender, Fairbanks, Grace, Jacobs, McKaughan, Thompson.

Associate Professors: Bickerton, Pawley, Schütz, Starosta, Topping, Tsuzaki.

Assistant Professors: Condax, Forman, Howard, Hsu, Josephs, Lee, Lyovin, Peters, Reid, Ward.

102 Introduction to the Study of Language (3) I, II
Nature and workings of language; its role in culture and history.

200 Languages of the World (3) I, II
Survey of major languages and language families of the world, including brief characterizations of their salient features, and attention to the numbers and distribution of their speakers. Pre: 102.

320 General Linguistics (3) I, II
Approaches, concepts, component areas of linguistics; its development as a science.

410 Articulatory Phonetics (3) I, II
Intensive training in recognition, reproduction, recording of speech sounds throughout the world; preparing students for field work, especially with unrecorded languages.

414 Introduction to Linguistic Anthropology (3) I
Introduction to the ethnographic study of speech and language. Pre: written consent of instructor. (Cross-listed as Anth 414)

421 Introduction to Phonological Analysis (3) I
Introduction to phonemic analysis and phonological theory. Pre: 410, or concurrent registration.

422 Introduction to Grammatical Analysis (3) I
Introduction to morphological and syntactic analysis, grammatical theory. Pre: 421, or concurrent registration.

440 Introduction to Linguistic Semantics (3) II
General review of notions and problems relating to the expression of meaning in natural languages and their implications for linguistic semantics.

470 Introduction to the Study of Children's Speech (3) I, II
Survey of findings regarding the child's acquisition of language. Pre: 102 or 320.

499 Directed Research (v) I, II
Pre: 102 or 320, and consent of instructor. Maximum credits: 3.

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) II
Phonological theory and problems of analysis. Pre: 421 or equivalent.

622 Grammar (3) II
Grammatical theory and problems of analysis. Pre: 422 or equivalent.

625 Mathematical Properties of Natural Languages (3) I
Rule-governed nature of natural languages. Construction of logical systems that mirror properties of natural languages. Pre: 621 or background in formal logic.

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: 421, 422. May be repeated.

635 Language Variation (3) I
Critical review of various approaches to language variation, including sociolinguistics, dialectology, and studies of language
contact, diglossia, pidgins and creoles, with emphasis on theoretical contributions of each, including recent quantitative and other methods seeking to discover systematic intersections among class, style, regional and other variations in linguistic data of speech communities. Pre: 622.

640 Topics in Linguistics (3) I, II
Open topic course dealing with range of subjects including among others the history of the discipline, schools of linguistic thought, and current issues. May be repeated. Pre: consent of instructor.

645 Introduction to Comparative Method (3) I, II
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: 421, 422 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.

660 Historical Linguistics (3) I, II
Survey of research concerning history of particular languages or language families. Pre: 645. May be repeated.

699 Directed Research (v) I, II
Pre: graduate standing; consent of instructor. Maximum credits: 6.

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 Prehistory (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 Areal Linguistics (3) I, II
Seminar dealing with structures of language of various areas of the world, topics depending on both resident and visiting staff specialties. Pre: 622. May be repeated.

800 Thesis Research (v)
Maximum credits: 12.

Mathematics (Math)
Department Office: Keller Hall 401-A

Professors: Bear, Gregory, Hanf, Mookini, Nobusawa, Pierce, Pitcher, Wallen.

Associate Professors: Colby, Johnson, Mader, Rogers, Wells, Williamson, Wong, Yeh.


097 Intermediate Algebra (0) I, II
Arithmetic operations on numbers and on algebraic expressions. Products, factoring, fractions, exponents, and radicals. Linear and quadratic equations. Inequalities. Polynomials and their roots. Two years of high school algebra will be assumed.

100 Survey of Mathematics (3) I, II
Selected topics designed to acquaint nonspecialists with examples of mathematical reasoning.

111 Introduction to Mathematics (3) I, II
Study of concepts and properties of number systems. (Limited to potential elementary education majors.)

134 Pre-Calculus Mathematics (4) I, II
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; satisfactory score on algebra screening test to be administered during first meeting of class.

150 Introductory Calculus for the Nonspecialist (3) I, II
Selected topics and applications in algebra, trigonometry, analytic geometry, and calculus. NOT acceptable as prerequisite to 205 or 206. Pre: two years of high school algebra and one year of plane geometry.

201 Finite Mathematics (3) I, II
Algebra of sets, elementary probability theory, vectors and matrices, linear programming, theory of games. Pre: 134 or equivalent.

205 Calculus I (3) I, II
Basic concepts; differentiation and integration of algebraic functions with applications. Pre: C in 134 or in equivalent courses covering trigonometry and analytic geometry.

206 Calculus II (3) I, II
Derivatives and integrals of trigonometric, exponential, logarithmic and hyperbolic functions; techniques of integration; infinite series. Pre: C in 205 or equivalent.

231 Calculus III (3) I, II
Power series, vector-oriented study of functions of several variables; partial differentiation and line integrals. Pre: C in 206 or equivalent.

232 Calculus IV (3) I, II
Multiple integrals, surface integrals, first and second order ordinary differential equations, linear equations with constant coefficients. Pre: 231 or consent of instructor.

251 Informal Geometry (3) I, II
Informal treatment of nonmetric relationships, congruence and similarity, polygons and polyhedrons, transformations. (Primarily for elementary education majors.) Pre: 111 or equivalent.

311 Introduction to Linear Algebra (3) I, II

321 Elementary Topology (3) I
Sets, topologies, mappings. Continuity and convergence. Illustrations of use of these concepts in analysis. Pre: 311 or consent of instructor.

351 Foundations of Euclidean Geometry (3) I, II
Axiomatic Euclidean geometry and introduction to the axiomatic method. Pre: 231 or consent of instructor.

352 Non-Euclidean Geometries (3) II
Study of hyperbolic geometry and other non-Euclidean geometries. Pre: 351 or consent of instructor.

371 Elementary Probability Theory (3) I, II
Sets, discrete sample spaces, problems in combinatorial probability, conditional probability, random variables, mathematical expectations, moments, variance, study of the classical distributions (binomial, Poisson, normal, etc.), applications. Pre: one semester of calculus or consent of instructor.

373 Elementary Statistics (3) I, II
Estimation, tests of significance, the concept of power. Pre: 371.

375 Combinatorial Mathematics (3) II
Permutations and combinations, generating functions and difference equations, inclusion-exclusion principle, distribution and occupancy problems, fundamentals of graph theory, matrix representation, applications of graph theory. Pre: two semesters of calculus or equivalent.

402 Partial Differential Equations (3) I, II

403-404 Methods of Applied Mathematics (3-3) Yr

407 Introduction to Numerical Analysis (3) I
Solution to equations of one variable and systems of linear equations by iterative methods, interpolation, curve fitting, and convergence criteria for special iterations. Pre: 232 and 311.
408 Numerical Solution of Differential Equations (3) II

412-413 Introduction to Abstract Algebra (3-3) Yr
Introduction to basic algebraic structures. Topics include finite groups, abelian groups, integral domains, quotient fields, factorization, polynomial rings, field extensions, vector spaces, linear transformations and canonical forms. Pre: 311.

420 Introduction to the Theory of Numbers (3) I
Congruences, quadratic residues, arithmetic functions, distribution of primes. Pre: 311 or consent of instructor.

431-432 Advanced Calculus (3-3) Yr
Topology of R^n, theorems on continuous functions, development of the Riemann integral, sequences and series, uniform convergence, implicit function theorems, differentials and Jacobians. Pre: Three courses chosen from among 311, 321, 412-413, 420, 455, 456, 471 or consent of the instructor.

442 Vector Analysis (3) II

444 Theory of Functions of a Complex Variable (3) II
Analytic functions, complex integration, introduction to conformal mapping. Pre: 431.

449 Topics in Undergraduate Mathematics (3) I or II
Advanced topics from various areas of mathematics including, but not limited to: algebra, number theory, analysis, logic. May be repeated for credit. Pre: consent of instructor.

451 Projective Geometry (3) I or II
Postulational approach to synthetic and analytic projective geometry, homogeneous coordinates, Desargues’ theorem, harmonic sets; collineations of points, concurrence of lines, duality principle, introduction to non-Euclidean geometries. Pre: 311 or consent of instructor.

455 Mathematical Logic I (3) I

456 Mathematical Logic II (3) II
Applied first order logic, arithmetization of metamathematics, recursive functions, and incompleteness results. Pre: 455 or Phil 611 or consent of instructor.

471 Probability (3) I, II
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
Sampling and parameter estimation, tests of hypotheses, correlation, regression, analysis of variance, sequential analysis, rank order statistics. Pre: 471.

499 Directed Reading (v) I, II
Individual reading in mathematics. Limited to advanced students. Students must make arrangements with an instructor before enrolling in the course. Maximum 3 credits; may be repeated three times.

611-612 Modern Algebra (3-3) Yr
Simplicity of alternating groups, Sylow theorems, Jordan-Holder theorem, unique factorization domains, Galois theory, algebraic closures, transcendence bases, modules over principal ideal rings. Pre: consent of instructor.

613 Group Theory (3) I or II
Sylow theorems, soluble groups, nilpotent groups, extension theory, representation theory, additional topics. Pre: consent of instructor.

615 Ring Theory (3) I or II
Ideal theory in Noetherian rings, localization, Dedekind domains, the Jacobson radical, the Wedderburn-Artin theorem, additional topics. Pre: consent of instructor.

617 Linear Algebra (3) I or II
Minimal polynomials, invariant subspaces, canonical forms of matrices: unitary and Hermitian matrices, quadratic forms and linear groups. Pre: consent of instructor.

621-622 Topology (3-3) Yr
Properties of topological spaces; separation axioms, compactness, connectedness; metrizability; convergence and continuity. Additional topics from general and algebraic topology. Pre: consent of instructor.

631-632 Theory of Functions of a Real Variable (3-3) Yr
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: consent of instructor.

633-634 Functional Analysis (3-3) Yr
Linear topological spaces, normed spaces, Hilbert spaces, function spaces, function algebras, operator theory. Pre: consent of instructor.

644-645 Analytic Function Theory (3-3) Yr
Conformal mapping, residue theory, series and product developments, analytic continuation, special functions. Pre: consent of instructor.

649 Topics in Mathematics (3) I, II
Topics from various areas of graduate mathematics. May be repeated for credit. Pre: consent of instructor.

655 Set Theory (3) I or II
Axiomatic development, ordinal and cardinal numbers, recursion theorems, axiom of choice, continuum hypothesis, consistency and independence results. Pre: consent of instructor.

671 Advanced Probability (3) II
Independence and conditioning, martingales, ergodic theory, Markov chains, central limit theorem. Pre: 631 or consent of instructor.

672 Stochastic Processes (3) I
Stationary, Gaussian and Markov processes. Pre: 671 or consent of instructor.

750 Seminar (v) I, II
Pre: consent of instructor. Maximum 3 credits; may be repeated three times.

799 Directed Reading and Research (v) I, II
Pre: graduate standing and consent of instructor. Maximum 3 credits; may be repeated three times.

800 Thesis Research (v) I, II

Meteorology (Met)

Department Office: HIG Bldg. 331

Professors: Chiu, Murakami, Ramage.
Associate Professors: Adams, Fullerton, Sadler, Takahashi.
Assistant Professors: Daniels, Taylor.

101 Climate, Weather and the Atmosphere (4) I, II (3L, 1Lb)
Introduction to physical science for nonscience majors and prospective science teachers, using the atmosphere as the medium to study the basic laws of physics. Encompasses sun-earth-ocean-atmosphere interrelationships; clouds and hydrometeors; rainbows and optical properties; atmospheric electricity; environmental pollution; atmospheric motions. Course concludes with extratropical and tropical weather systems, forecasting, and weather of Hawaii.

342 Meteorological Instruments and Observations (3) II (2L, 1Lb)
Principles of meteorological instruments and their care; instrumental and visual weather observation; coding. Pre: credit or registration in Math 205. (Alt yrs: not offered 1973-74)
350 Theoretical Meteorology Laboratory I (1) I (1Lb) Adams Exercises related to 352. Required for meteorology majors. Pre: credit or registration in 352.

352 Theoretical Meteorology I (3) I (3L) Adams Atmospheric statics: optical, acoustical, electrical phenomena: condensation and precipitations; radiation and heat balance: thermodynamics; kinematics. Prereq: Phys 275; concurrent registration in Phys 310 or consent of instructor.

353 Theoretical Meteorology II (3) II (3L) Adams Basic concepts of fluid motion applied to atmosphere. Equations of motion; special cases of balanced motion: principles of numerical weather prediction. Pre: 352.

354 Theoretical Meteorology Laboratory II (1) II (1Lb) Adams Exercises related to 353. Required for meteorology majors. Pre: credit or registration in 353.

444 Meteorological Satellites (3) II (1Lb) Sadler, Adams Fundamentals of meteorology: physical laws of space and satellite orbits; operation of meteorological satellites, satellite information and its usage. Pre: credit or registration in Math 205. (Alt yrs: offered 1973-74)

445 Tropical Meteorology (3) II Ramage 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 352. (Alt yrs: offered 1973-74)

450 Meteorological Analysis Laboratory (3) II Taylor 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 352. (Alt yrs: offered 1973-74)

452 Tropical Analysis Laboratory (3) II Taylor 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: not offered 1973-74)

639 Meteorology of the Tropical Oceans (2) I Ramage, Sadler Trade winds, typhoons, monsoons: local and diurnal effects. Pre: 352. (Alt yrs: not offered 1973-74)

640 Advanced Tropical Meteorological Laboratory (3) II (3Lb) Sadler Modern methods of analysis and forecasting applied to the tropics. Pre: 639 or consent of instructor. (Alt yrs: offered 1973-74)

641 Monsoon Meteorology (3) II Ramage Synoptic components of monsoons, regional and temporal variability, numerical models, research exercises. Pre: 639 or consent of instructor.

642 Seminar in Meteorological Sensors (3) I Taylor Theoretical and experimental approach to the response of meteorological sensors and sensor systems. (Alt yrs: offered 1973-74)

643 Cloud Physics (3) I Physical processes attending formation and subsequent history of clouds and cloud particles.

644 Physical Meteorology (3) II Daniels Advanced treatment of radiation, atmospheric optics, acoustics, electricity, visibility; radar meteorology. Pre: 352.

645 Advanced Air Pollution Meteorology (3) I (2L, 1LB) Daniels Development and comparison of major air pollution diffusion expressions, their application and modification for different weather conditions and intended uses. Turbulence and pertinent instrumentation. Actual grid-based urban air pollution calculations. Pre: Geog 407, 408 or consent of instructor.


650 Advanced Theoretical Meteorology I (3) I Chiu Basic equations of meteorology in vector form and in various coordinate systems: circulation and vorticity theorems: classical hydrodynamics. Pre: 353 or equivalent.

651 Advanced Theoretical Meteorology II (3) II Chiu Atmospheric waves and tides: stability problems. Pre: 650.

742 Atmospheric Turbulence (3) II Chiu Equations of motion for turbulent flow; statistical descriptions of turbulence: atmospheric boundary layer processes. Pre: 650 or consent of instructor. (Alt yrs: offered 1973-74)

745 Dynamic Meteorology in Extratropics (5) II (3L, 2Lb) Murakami Scale-analysis of equations of motion; quasi-geostrophic system of forecasting: initial value problem; programming exercise to compute energy interaction terms. Pre: 353.

752 Special Topics in Meteorology (3) I, II Chiu (a) General. (b) Research results. May be repeated for credit. (Also offered at Hilo College)

799 Directed Research (v) I, II Pre: consent of instructor.

800 Thesis Research (v) I, II

Music (Mus)

Department Office: Music Bldg. 1


Associate Professors: Chadwick-Cullen, Lum, Tait, Trimillos, Trubitt, Uhrina, Zumbro.

Assistant Professors: Adler, Brown, Coraggio, Gillett, Gordon, Krantz, Shipwright, Susilo, Yasui.

Instructor: Van Zile.


Numbers in parentheses in course descriptions refer to the different sections in each course and are used for scheduling purposes.

102 University Chorus (1) I, II Performance of choral literature from Renaissance to present. Previous choral experience not required.

115-116 First-Level Secondary Piano (1-1) Yr 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 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 Accelerated Introduction to Music Theory (2) I, II Content of 117-118 in one semester. Placement conference required. Pre: consent of instructor.

123-124 Elementary Voice Class (1-1) Yr Basic principles of voice production. Relevant problems in voice literature at elementary level. Pre: consent of instructor. Cannot be audited.

125-126 Elementary Piano Class (1-1) Yr Basic principles of piano performance. Relevant problems in piano literature at elementary level. Cannot be audited.
127-128 Asian Music Performance Class (1-1) I, II
Basic principles of performance of Asian music. Relevant problems in literature at elementary level. (B) koto, (C) shamisen, (D) South Indian singing. Cannot be audited.

129 Elementary Classical Guitar Class (1) I, II
Basic principles of classical guitar performance. Relevant problems in guitar literature at elementary level. Pre: consent of instructor. Cannot be audited.

151-152 String Methods (2-2) Yr
For students preparing to teach instrumental music. Performance techniques, materials and pedagogy for string instruments.

153 Woodwind Methods (2) I
Similar to 151-152.

154 Brass Methods (2) II
Similar to 151-152.

155 Percussion Methods (2) I
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.

180 Fundamentals of Western Music (3) I, II
Fundamental concepts in organization of music as expressive medium in Western culture. Roles of composer, performer and listener. Notation as mode of communication. Discovery and verification of ideas through laboratory experience.

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: consent of instructor. Cannot be audited.

183-184 Aural Training (1-1) Yr

190 Dance in World Cultures (3) I, II
Introduction to movement and dance with emphasis on Pacific and Asian cultures.

197-198 Keyboard Studies (2-2) Yr
Application at the keyboard of concepts introduced in music theory. A structured sight reading program, including transposition and score reading. Study of the special problems encountered in vocal and instrumental accompanying. Pre: 133C or 133D or 135D, and 182.

215-216 Second-Level Secondary Piano (1-1) Yr
Continuation of 115-116 with increased emphasis on piano literature up to intermediate level. Pre: 116 or consent of instructor.

265 History of Western Music to 1750 (3) I, II
Development of Western music from its origins to 1750. Styles, schools, composers. Pre: 182 or consent of instructor.

266 History of Western Music after 1750 (3) I, II
Development of Western music from 1750 to the present. Styles, schools, composers. Pre: 182 or consent of instructor.

271-272 Sound Organization in World Cultures (2-2) Yr
Music-theoretical study of sound organization as defined and used by various cultures, such as Hawaii, Japan, India, Ghana, and Java. Attention to uses of sequential event, simultaneous event, timbre musical process, tuning systems and larger forms. Pre: 183-184 or equivalent.

273-274 Aural Training in Ethnic Musics (1-1) Yr
Development of listening and aural analysis skills concurrent with 271-272. Pre: 183-184 or equivalent.

281-282 Intermediate Music Theory (2-2) Yr
Detailed study of theory of music; including writing, analysis, keyboard application. Taken concurrently with 283-284 and 265-266. Pre: 182.

283-284 Advanced Aural Training (1-1) Yr

301 Introductory Ensembles (1) I, II
Check schedule for available sections. Performance of literature for ensembles and performing groups of various sizes and kinds at the introductory level: B Philippine Ensemble, C Hawaiian Ensemble, D Javanese Dance. May be repeated in different sections. Pre: audition or consent of instructor.

325-326 Conducting (1-2) Yr
Problems in directing instrumental and choral ensembles and organizations. Score reading, rehearsal techniques and basic interpretive problems. Pre: 182.

351-352 Music in the Elementary School (2-2) Yr
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. Pre: 118 or 119 or 180 or 181.

353 Survey of Music in the Elementary School (3) I, II

357 Organ Pedagogy (2)
Comparison of technical methods, evaluation and grading of literature; practice teaching. Pre: 236 or consent of instructor.

358-359 Piano Methods (2-2) Yr
Concepts, materials and procedures for class and individual instruction in piano. Pre: 182 or consent of instructor.

370 Music in Modern America (3) I
Varieties of music, including jazz and other popular forms, in contemporary American society, with relevant antecedents. Pre: freshmen admitted only with permission of instructor. (Cross-listed as American Studies 454)

381-382 Advanced Theory (3-3) I, II
Form, texture and style in music literature from the Renaissance to the present. 381: emphasis on contrapuntal textures and forms. 382: emphasis on larger forms with various textures, including recent contemporary approaches to continuity. Formal analysis and writing throughout. Pre: 282.

383-384 Orchestration (2-2) I, II
Basic principles of scoring for orchestra and band, including study of instrumental ranges, timbres, transpositions. 2nd semester: transcribing or composing for band, orchestra and chorus. Pre: 182 or consent of instructor.

391-392 Movement Notation (2-2) Yr
Analysis and recording of movement through Labanotation; reconstruction of notated exercises and dances. Pre: 180 or consent of instructor.

397 Theory and Practice of Jazz Improvisation (2) I, II
Development of an improvising technique through analytic studies and performance practice. Pre: 284 or consent of instructor.

398 Music, the Arts and Ideas (3) I, II
Interrelationships between music and the other arts, emphasizing literature and the visual arts; music in the history of ideas; musical values and esthetic judgments. Pre: 160, 170, 180 or consent of instructor.

399 Directed Study (v) I, II
Limited to senior majors with 2.7 grade-point ratio or 3.0 in music. Pre: consent of instructor.

401 Ensembles (1) I, II
Check schedule of classes for available sections. Performance of literature for ensembles and performing groups of various sizes and kinds: B Hawaiian Chorus, C University Chamber Singers, D Keyboard Accompanying, E Piano Duo, F Keyboard
Chamber Music, G String, H North American Fiddling, I Woodwind, J Brass, K Stage Band, L Percussion, M Contemporary Music. Pre: audition or consent of instructor. May be repeated for credit.

402 Ethnic Music Ensembles (1) I, II
Check schedule of classes for available sections. Performance of literature for ensembles and performing groups of various sizes and kinds: B Koto, C Japanese, D Chinese, E Korean, F Okinawan, G Philippine, H Asian, I Oceanic. Pre: audition or consent of instructor. May be repeated for credit.

403 Ethnic Dance Ensembles (1) I, II
Check schedule of classes for available sections. Performance of literature for ensembles and performing groups of various sizes and kinds: B Hawaiian, C Japanese, D Chinese, E Korean, F Okinawan, G Philippine, H Javanese, I Asian, J Oceanic. Pre: audition or consent of instructor. May be repeated for credit.

404 University Concert Choir (1) I, II
Performance of a cappella literature and major choral works. Pre: previous choral experience and consent of instructor. May be repeated for credit.

405 Opera Workshop (3) I
Opera in performance. Styles and characterizations. Performance of scenes and one complete work. May be repeated for credit. Pre: 236(B) or consent of instructor.

406 University Symphony Orchestra (1) I, II
Performance of orchestra literature, including major works for chorus and orchestra, opera and dance. Pre: audition or consent of instructor. May be repeated for credit.

407 University Javanese Gamelan (1) I, II
Performance of Jogja and Solo gamelan traditions, including literature for ujon-ujon, wajang kuli, and wajang wong. B soran, C klenengan. Pre: either 170, 470, 477 or consent of instructor. May be repeated.

408 Collegium Musicum (1) I, II
Performance of band literature, including major works by contemporary composers. Pre: audition or consent of instructor. May be repeated for credit.

420 Music Literature Laboratory (2) I, II
Specific areas of music literature with emphasis on problems of style and interpretation and their implications in performance. Inquiry with laboratory performance. (B) solo voice. (C) piano. (D) organ. Pre: 236 in appropriate area, or consent of instructor. May be repeated for credit.

421 Service Playing (2)
Comparison of literatures, score reading, accompanying, choral directing from the console, hymn playing, improvisation. Pre: 236 or consent of instructor.

422 Advanced Woodwind Methods (2) II
Advanced performance techniques, materials and pedagogy for woodwind instruments: M flute, N oboe, O clarinet, P bassoon. Pre: 153. May be repeated for credit.

423 Advanced Brass Methods (2)
Advanced performance techniques, materials and pedagogy for brass instruments: R trumpet, S French horn, T trombone, U tuba. Pre: 154. May be repeated for credit.

424 Advanced Percussion Methods (2)
Advanced performance techniques, materials and pedagogy for percussion instruments: B timpani, C mallet instruments, D snare drum. Pre: 155. May be repeated for credit.

457 Asian and Pacific Music in Education (2) II
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
Concepts, materials and procedures for class and individual instruction in voice. Pre: 182 or consent of instructor.

461 Symphonic Music (2) I
Historical study of symphony orchestra and its literature from Bach to present. Pre: 265 and 266 or consent of instructor.

462 Choral Music (2) II
Historical study of choral literature from Palestrina to present. Pre: 265 and 266 or consent of instructor.

463 Opera (2) I
Historical study of operatic literature from Monteverdi to present. Pre: 265 and 266 or consent of instructor.

464 Twentieth-Century Music (2)
Study of major styles and composers from Debussy to present. Pre: 265 and 266 or consent of instructor.

465 Chamber Music (2)
Historical study from Renaissance to present, of music written for one performer to a part. Pre: 265 and 266 or consent of instructor. (Not offered 1972-73)

466 Music of the United States (2)
Historical study of music of U.S. from colonial times. Pre: 265 and 266 or consent of instructor.

467 Solo Song (2)
Historical study of solo song literature from the troubadours to the present. Pre: 265-266 or consent of instructor.

468 The Concerto (2)
Historical study of concerto grosso, solo concerto, sinfonia concertante and Konzertsstück from their inception to the present. Pre: 265-266 or consent of instructor.

469 Keyboard Music (2)
Study of literature for harpsichord, piano and organ from Renaissance to present, emphasizing development of historical styles. Pre: 265 and 266 or consent of instructor.

470 Art Music of Asia (2) II
Major genres and representative works. Performance practices and compositional principles. Pre: either 160, 170, 180, 181 or consent of instructor.

471 Music of Non-Literate Peoples (3) I
Traditional and acculturated styles, instruments, social context. Pre: either 160, 170, 180, 181 or consent of instructor.

477 Musical Cultures (2) I, II
The musical system of a musico-culture area. B Japan, C India, D Vietnam, E Indonesia, F Hawaii, G Korea, H Others to be announced. Pre: either 160, 170, 180, 181 or consent of instructor. May be repeated in different sections.

479 Undergraduate Topics in Ethnomusicology (2) I or II
Problem-oriented cross-cultural investigation of music and music organization. Subject matter variable. May be repeated for credit. Pre: any ethnomusicology course in the -70 series or consent of instructor.

487-488 Composition (2-2) Yr
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.

519 Music for Elementary Teachers (3)
Music fundamentals; basic music skills and theory with emphasis on reading music. Sight-singing, ear training through melodic and rhythmic dictation, creative activities, analysis of simple song forms, study of basic harmony with direct application to classroom instruments. Pre: 118 or 119 or 180 or consent of instructor.

580 Theory Review (3) I
A comprehensive review of general musicianship; melodic, harmonic, and formal analysis; writing; aural comprehension and music reading; application at the keyboard. Pre: consent of instructor.

600 Seminar (3) II
601 Advanced Ensemble (1) I, II
Selected projects in study and performance of ensemble literature. Pre: 436 or equivalent. May be repeated.

625-626 Advanced Conducting (2-2) Yr
Advanced problems in conducting instrumental and choral groups. Pre: 326.

631 Foundations of Music Education (2) I, II
A study of the nature of music and music education in their philosophic, aesthetic, social, historical and psychological dimensions.

653 Music Curriculum Theory and Design (2) I, II
An analysis of procedures for planning, teaching, evaluating, and administering music programs in elementary, secondary and higher education. Existing music programs will be evaluated and procedures for change developed.

660 Studies in Music Literature (3) I, II
Detailed study of music literature by chronological period. May be repeated. B Medieval, C Renaissance, D Baroque, E Classic, F Romantic. Pre: 265-266 or consent of instructor.

661 Bibliography and Research Methods in Music (3) I
Basic materials and techniques for research in music.

670 Regional Music (3) I, II
Musical content and historico-social context of principal musical traditions. B Asia, C Oceania. Pre: consent of instructor. May be repeated.

678 Advanced Problems in Ethnomusicology (v) I, II
678B Transcription of Performance Practices (3)
678C Movement Analysis (2)
678J Other (v)
Pre: consent of instructor. Different sections may be repeated for credit.

680 Studies in Music Theory (3) I, II
B Stylistic Counterpoint to 1700, C Stylistic Counterpoint from 1700, D Advanced Analysis, E Comparative Theory, F History of Theory, G Media. Pre: graduate standing and Music 282 or equivalent. Different sections may be repeated for credit.

690 Regional Dances (3) I, II
Dance content and historico-social context of principal dance traditions. May be repeated. B Asia, C Oceania. Pre: consent of instructor.

699 Directed Work (v) 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 (v) I, II
APPLIED MUSIC

Instruction is given in individual lessons either a half-hour once or twice a week or an hour once 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. Assignment and admission to these courses are based on tests and auditions given by the department during the advising and registration period. Applied music courses cannot be audited. 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 or one hour per week .................$90.00

130 Introduction to Applied Music, Ethnic (1) I, II
Instruction in instrumental and dance performance at the elementary level. Including study of works representative of literature. May be repeated for credit. B Koto, C Piano, D Organ, E Harpsichord, F Harp, G Classical Guitar, H Violin, I Viola, J Cello, K Double Bass, L Viola Da Gamba, M Flute, N Oboe, O Clarinet, P Bassoon, Q Saxophone, R Trumpet, S French Horn, T Trombone, U Tuba, W Baritone Horn, Y Percussion, Z Other. Pre: audition or consent of instructor.

131 Introduction to Applied Music, Western (1) I, II

132-133 First-Level Applied Music (1) I, II

134-135 First-Level Applied Music (2) I, II
See 132-133 for description and list of sections.

141 Introduction to Applied Music, Western (2) I, II
See 131 for description and list of sections.

230 Intermediate Applied Music, Ethnic (1) I, II
For music majors in secondary performance fields. Individual instruction in instrumental and dance performance at second performance level. Study of works representative of the literature. See 130 for list of sections. Pre: Promotion from 130 or equivalent by audition. May be repeated.

231 Intermediate Applied Music, Western (1) I, II
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: Promotion from 131 or equivalent by audition. May be repeated.

240 Intermediate Applied Music, Ethnic (2) I, II
See 230 for description and list of sections.

241 Intermediate Applied Music, Western (2) I, II
See 231 for description and list of sections.

232-233 Second-Level Applied Music (1) I, II
For music majors or intended music majors. Individual instruction in solo vocal instrumental performance at second performance level. Study of works representative of literature. Weekly repertoire laboratory required. See 132-133 for list of sections. Pre: 133, 135 or consent of instructor.

234-235 Second-Level Applied Music (2) I, II
See 232-233 for description and list of sections.

332-333 Third-Level Applied Music (1) I, II

334-335 Third-Level Applied Music (2) I, II

336-337 Third-Level Applied Music (3) I, II
See 332-333 for description. Half recital required in 337.

430 Advanced Applied Music, Ethnic (1) I, II
For music majors who are not majoring in performance. Individual instruction in instrumental and dance performance at third and fourth performance levels. Study of works representative of literature. No recital requirement. See 130 for list of sections. Pre: Promotion from 230 or equivalent by audition. May be repeated.

431 Advanced Applied Music, Western (1) I, II
Instruction in solo vocal or instrumental performance at advanced levels. Study of works representative of literature. No recital requirement. See 131 for list of sections. Pre: Promotion from 231 or equivalent by audition. May be repeated.
Oceanography (Ocean)

Department Office: HIG Bldg. 342

Professors: Chave, Groves, Hardy, Murph, Wyrtki.
Captain James Cook Professor: Garrels.

201 Science of the Sea (3) I, II
Stroup, Young
Descriptive introduction to oceanography; structure and formation of ocean basins and their characteristic features: properties of seawater; distribution of temperature and dissolved substances in the ocean: ocean currents: waves: tides: characteristics of the biotic community and interrelationships with the environment: flow of energy and matter in the food web: man and the sea. Field trip to Coconut Island, Kaneohe Bay: required.

298 Global Pollution and Natural Processes (3) II
Garrels
Effects of various types of global pollutants (i.e., gases, trace metals, oil, pesticides) assessed by treating them as additions to the pre-man ocean-atmosphere-land system. Emphasis on development of the natural flows of energy and materials among atmosphere, land, and sea. Topics include: composition of the atmosphere, of rocks, of the oceans: circulation of the atmosphere and oceans: rates of erosion of the continents: cycles of the elements from land to sea and back again: natural response rates of sediment-ocean-atmosphere system to changes in the system; estimation of degree of interference of various pollutants with the natural system: assessment of present-day effects and future importance of various pollutants. Pre: one year of college chemistry or consent of instructor.

620 Physical Oceanography (3) I
Wyrtki
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
Clarke
Marine organisms, factors governing productivity: distribution, ecology, environmental influences: marine resources, their availability and utilization. Pre: 620 or consent of instructor.

622 Geological Oceanography (3) II
Andrews
Marine geological processes and forms, including ocean basin structure and geomorphology, plate tectonics, marine sedimentation and stratigraphy. For students without a strong geological background: others see Geol-Geophysics 623.

623 Chemical Oceanography (3) I
Kroopnick
Study of chemical processes occurring in marine waters with emphasis on why they occur and how they affect the oceanic environment. Pre: consent of instructor.

630 Physical Oceanography Laboratory
Wyrtki
Techniques and methods of analysis in physical oceanography. Pre: Math 232 and consent of instructor.

632 Littoral Geological Processes (3) II
Tait
Geological processes and forms peculiar to the nearshore marine environment. Pre: 620, 622 and consent of instructor.

633 Chemical Oceanography Lab. Methods
Kroopnick
Laboratory and field analytical techniques used in chemical oceanography. Pre: consent of instructor.

634 Techniques in Geological Oceanography (2) I & Summer (1L, 1Lb)
Andrews & Margolis
Laboratory procedure: analysis of sea floor materials (microscope, x-rays, size, chemical, and physical properties). Methods of data collection at sea (dredging, coring, photography echo sounding, seismic profiling). Magnetics, gravity. Pre: consent of instructor.

636 Phytoplankton Ecology (3) II
Cattell

640 Advanced Physical Oceanography (3) II
Wyrtki

642 Sedimentology II (3) II (2L, 1 3-hr Lb)
Margolis
Analysis of sedimentary textures, chemical and physical properties, and sediment compositions: distribution of recent marine sediments: statistical applications to sedimentology: to be preceded by Geol-Geophysics 619 for an integrated survey of young marine sediments. Pre: consent of instructor.

643 Marine Geochemistry (3) II
Chase

644 Marine Geophysics (3) I
Caperon
Geophysical exploration techniques and studies of ocean basins and margins. Offered jointly as Geol-Geophysics 661. Pre: consent of instructor. (Alt yrs: offered 1973-74)

646 Zooplankton Ecology (3) I (2L, 1 3-hr Lb)
Newbury
Environmental factors related to the acquisition, assimilation and utilization of energy by zooplankton: practical experience with sampling methods and taxonomic analysis: production models and measurement. Pre: 621, or consent of instructor.

650 Mathematical Techniques for Biologists (3) I
Caperon
Introduction to differential equations, matrix algebra and stochastic processes. Use of these techniques in solving problems in biology. Pre: Math 205, 206 or equivalent.

653 Geochemical Evolution of Sediments (3) II
Garrels
Processes and rates of weathering and deposition of sediments. Initial mineralogic and chemical composition of sediment types: post-depositional changes in these properties. Mass-age-compositional relations of sediments. Residence times of major elements in the ocean and in the total sedimentary cycle. Modeling of the sediment-ocean-atmosphere-biosphere system.
with special emphasis on use of stable isotopes to put restraints on the system. Chemical history of the atmosphere and oceans. Pre: physical chemistry.

660 Ocean Waves (3) I
Groves
Ocean wave propagation; transformation of the wave spectrum on propagation and refraction; prediction of wind waves; application to swell, tsunamis, surf and other waves in the ocean. Pre: 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 nonharmonic methods of analysis and prediction, geophysical implication of the tide. Pre: either 640 or Math 432, and consent of instructor.

662 Marine Hydrodynamics (3) I
Gallagher
Introduction to classical hydrodynamics and continuum mechanics. Techniques for solution of Navier-Stokes equations on various scales of oceanic motion, including potential theory, dynamic modeling, and viscous, rotational and turbulent processes. Pre: math at a level equivalent to Math 403-404.

663 Measurements and Instrumentation (2) II
Hardy & Vitousek
Oceanographic measurements, their accuracy and precision. Design principles and operation of selected instruments for physical oceanography. Reduction and evaluation of measured data with emphasis on digital data acquisition. Workshop in data processing part of this course.

664 Principles of Underwater Acoustics (3) I
Hardy
Study of the physical "optics" of underwater sound propagation in the ocean, including effects of diffraction, scattering, refraction, and reflection. Pre: consent of instructor and Math 404 or equivalent.

666 Nearshore Physical Oceanography (3) II
Tait
Wave-driven water motions in and near the surf zone. Nonlinear and second order analysis techniques with emphasis on the "Radiation Stress" approach. Edge waves near the surf zone and on the continental shelf. Turbulent mixing and diffusion in the surf zone. Application to pollution in the nearshore environment. Pre: 660 or consent of instructor.

672 Seminar in Geotectonics (3) I
Andrews
Evolution of the ocean basins and margins, from regional syntheses of structure, petrology, geophysics, stratigraphy, and physiography. Pre: consent of instructor. Offered jointly as Geol-Geophysics 672. (Alt yrs; not offered 1973-74)

673 Continental Shelves (3) I
Andrews
Geological structure and mineral resources of continental shelves. Pre: consent of instructor. (Alt yrs; offered 1973-74)

699 Directed Research (v) I, II
Pre: consent of instructor.

702 Deep Sea Biology (3) II (2L, 1 3-hr Lb)
Young
Distribution, ecology and adaptations of pelagic and benthic organisms in the deep sea. (Alt yrs: not offered 1973-74)

705 Ecology and Management of Marine Resources (2) I
Murphy
Review of the ecology and management of living marine resources drawing from the best-documented case histories from the world oceans. Mathematical models and the application of basic ecological principles will be stressed. Pre: year of calculus and consent of instructor.

735 Seminar in Oceanography (2) I, II

750 Topics in Biological Oceanography (2) I, II
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
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

799 Seminar (1) I, II

800 Thesis Research (v) I, II

Overseas Career Program (OCP)

Program Office: Moore Hall 215

Director: Hacker.
Associate Director: Moscotti.

301 Overseas Americans and Asian Societies (3) I, II
Moscotti
Survey of Asian institutions and social and cultural realities encountered by Americans in Asia, particularly American students. Special attention given to social experiences of Asian youth and to higher education in Asia. Preparatory to study in Asia by University of Hawaii undergraduates.

631-632 Asia-America: Studies of Men and Institutions (3-3) I, II
Hacker, Moscotti
Interdisciplinary study of problems of Americans living and working in Asia. Examination of current American policies and institutions in Asia, overseas operations of U.S. Government and international agencies, private organizations and businesses. Emphasis on relevant Asian institutions, country studies and practical aspects of interaction of contemporary American and Asian cultures. Required of candidates for Overseas Career Certificate.

791 Internship in an Asian Country (3)
Hackler
Field experience for approximately 6 months with international or governmental agencies, private organizations, educational institutions or business firms in Asia. Periodic and final reports required. Limited to candidates for the Overseas Career Certificate. Pre: consent of instructor.

See Graduate Division Catalog for description of Overseas Career Program and requirements for the Overseas Career Certificate.
Pacific Islands Program (PIP)

Program Office: George Hall Annex 7-5

Professors: Daws, S. Goto, R. Johnson, Kay, A. Leib, Meller, Oliver, Pirie, Tilton.

Curators: Heyum, Kittelson.

A cross-disciplinary program offered by the Pacific Islands Committee.

390B Change in the Pacific—Micronesia (3) I
Impact of cultural and physical change and their interrelationship in Micronesia.

390C Change in the Pacific—Polynesia (3) I
Impact of cultural and physical change and their interrelationship in Polynesia.

390D Change in the Pacific—Melanesia (3) I
Impact of cultural and physical change and their interrelationship in Melanesia.

690 Graduate Seminar: Change in the Pacific (3) II Meller
Interrelationship of change in selected Pacific Island regions, institutions, and processes. Pre: consent of instructor.

699 Directed Reading and Research (v) I, II Staff

800 Thesis Research (v) I, II

Pacific Urban Studies and Planning Program (Plan)

Program Office: Maile Way 4

Director: Dinell.
Professor: Yeh.
Assistant Professors: Holmstrom, Minerbi, Nitz, Povey, Schwind.
Associate Specialist: Wiederholt.

Participating units include the departments of architecture, economics, geography, political science and sociology, the College of Engineering and the schools of Public Health and Social Work.

310 Planning Perspectives (3) I, II
Introduction to urban and regional planning in Hawaii. Considers differing perspectives on planning, types of planning tools and methods employed and specific Hawaii planning-research problems. Pre: consent of instructor.

600 Contemporary Planning Theory (3) I
Review of present day planning theory, its historical development and applications and its role in various settings. Each student develops his own conceptual model of planning which he may then test and revise as he develops more expertise in the field. Required of Planning Certificate candidates. Pre: consent of instructor.

601 Introduction to Planning Systems (3) I
Introduction to systemic analysis of planning problems and their solutions. Consideration of subfields of planning and relationship of planning to other disciplines, professions and areas of common concern such as physical design. Planning models including heuristic gaming employed in highlighting complexity of planning process and range of interests at play in the development of urban and regional systems. Pre: 600 or concurrent.

602 Methods of Planning Analysis (3) II
Basic foundation in methods used to describe and predict demographic, economic, and spatial phenomena for planning purposes. Familiarity with basic statistics assumed. Students utilize methods with local data. Pre: 601 or consent of instructor.

645-646 Development Planning (3-3) Yr
Interdisciplinary two-semester course for students with strong interest in third-world development. Emphasis on development planning at regional and urban levels. 1st semester: regional development phenomena and issues within the context of national development policies. 2nd semester: urban level phenomena and issues in developing countries. Both semesters emphasize professional responsibilities of planning in political contexts. (Identical to Arch 645-646 and CE 645-646) Pre: consent of instructor.

695 Planning Practicum I (3) I, II
First unit in Planning Practicum sequence. Planning tools essential to understanding dimensions of planning problems introduced and applied to a particular planning issue in the state. Students become familiar with local data sources as well as methods and techniques of analysis. Research design and theory construction including hypothesis testing reviewed and applied. Students identify area of research interest relevant to planning issue being examined, develop a research design for implementation and initiate research. Pre: 600 and 601 or consent of instructor.

696 Planning Practicum II (3) I, II
Final unit in Planning Practicum sequence. Students produce an integrated planning research report in which results of individual and small group effort are documented and presented in verbal, written and visual form to client group. Individual research efforts reviewed and integrated and research gaps identified and covered. Pre: 695.

780 Selected Topics in Planning (3) I, II
Special topics in planning theory, history, analysis, and applications. Pre: 600 and 601 or consent of instructor.

799 Directed Reading and Research (v) I, II
Pre: consent of instructor.

800 Thesis Research (v) I, II
The following courses offered by the participating units are part of the planning studies program: Arch 442, 452; CE 463, 464, 664, 665; Econ 458, 492, 495; Geog 421, 425, 612, 621; PH 614; PolSci 651, 670, 750, 770.

Philosophy (Phil)

Department Office: George Hall 120

Professors: Chang, Copi, Deutsch, McCarthy, Naglay, Upadhyaya.

Associate Professors: Cheng, Kalupahana, Yamasaki.

Assistant Professors: Assali, Bender, Goodman, Harter, Moore, Stewart, Wargo.

One of the following is generally a prerequisite to each advanced course: 100, 200, 201, 210 or the equivalent.

WESTERN

100 Introduction to Philosophy (3) I, II
Problems, methods, fields of philosophy.

200 History of Philosophy I (3) I
Western philosophy from era of great Greek thinkers to Renaissance.

201 History of Philosophy II (3) II
Western philosophy from Renaissance to present. Desirable preparation: 200.

210 Introduction to Logic (3) I, II
Principles of modern deductive logic.

225 Early Greek Thought (3) I or II
Burns, Harter
Comprehensive study of the evolution of early Greek thought from its beginnings through Aristotle as expressed in mythology, literature, science, and philosophy. (Cross-listed as EL 225)

300 Greek Philosophy (3) I
Goodman, Harter
Basic philosophical works of schools and thinkers of Greek philosophy from Pre-Socratics to Neo-Platonism.
301 Philosophy of Late Antiquity (3) II Goodman
Study of Greek and Roman philosophies of Hellenistic and post-Hellenistic ages, including Stoicism, Epicureanism, Skepticism, Cynicism, neo-Platonism and post-Aristotelian Peripateticism. Desirable preparation: 300 or permission of instructor.

302 Medieval Philosophy (3) II Harter, McCarthy
Metaphysical, epistemological, ethical problems of medieval philosophy, with particular reference to Augustine, Anselm, Thomas Aquinas, Duns Scotus and William of Ockham.

304 British Empiricism (3) II Assali, Wargo
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 Continental Rationalism (3) I Goodman, Yamasaki
Epistemological, metaphysical, ethical problems in Continental Rationalism. Particular attention to Descartes and Spinoza.

308 19th-Century Philosophy (3) I Bender, Nagley
Major philosophical writings of German Idealists from Kant through Hegel, Marx, Kierkegaard, and Nietzsche.

310 20th-Century Philosophy (3) II Stewart
Survey of recent developments in Western philosophy.

315 Ethical Theory (3) I or II Goodman, Moore
Comparative analysis of ethical theory in theological, legal, literary, scientific, social, as well as philosophical sources indicating relevance of ethical theory to processes of decision making.

340 Survey of Islamic Philosophy (3) I or II Goodman
Brief introduction to philosophers of the Islamic world, including Kindi, Razi, Avicenna, Ghazali, Ibn Tufayl, and Averroes.

400 Political Philosophy (3) I or II Bender
Combined systematic and historical approach to major problems of Western political philosophy. Special attention to European political theory.

401 Social Philosophy (3) I or II Bender
Traditional problems of justice, freedom, equality and authority and their contemporary analyses.

402 Philosophy of Law (3) I Moore
Study of both historical and contemporary materials in law and legal theory. Prerequisite considerations: legal responsibility, justice, natural law, punishment, insanity, censorship, judicial reasoning.

403 Marxist Philosophy (3) I or II Bender
Study of both historical and contemporary texts in Marxist philosophy, especially those dealing with problems of alienation, history, society and the Marxist critique of the Western philosophical tradition.

405 American Philosophy (3) I or II Cheng, Harter, Wargo
Major trends in development of American philosophy in relation to socio-political background and influence.

410 Philosophy of the Physical Sciences (3) I Assali

415 Philosophy of the Social Sciences (3) II Assali
Substantive methodological problems in current analyses of social sciences.

417 Theory of Knowledge (3) I or II Cheng, Copi
Examination of major historical and contemporary approaches to the theory of knowledge. Problems to be considered will include: truth and error, scepticism, the problem of induction, the possibility of a priori knowledge, the analytic-synthetic distinction, meaning and verification, perception, and other minds.

418 Metaphysics (3) I or II Harter, Wargo
Consideration given to a number of the most basic problems in metaphysical inquiry including the nature and function of metaphysics and metaphysical statements, the problem of universals, the one and the many, identity, substance, and determinism as well as an inspection of the realism-idealism controversy.

420 Philosophy of Art (3) I or II McCarthy, Moore, Yamasaki
Study of art from points of view of creation, appreciation, criticism. Particular attention to painting, sculpture, music, poetry.

422 Philosophy and Psychoanalysis (3) I McCarthy
Contributions of psychoanalysis to the philosophical understanding of the nature of man, society, art, religion and morality.

425 Philosophy in Literature (3) I McCarthy

427 Kafka (3) II McCarthy
Philosophical-literary analysis of the major writings of Franz Kafka: novels, stories, journals, philosophical reflections. Pre: 425 and at least 6 credits of upper division literature.

428 Samuel Beckett (3) II McCarthy
Literary-philosophical analysis of the poems, novels, and plays of Samuel Beckett. Pre: 425 and at least 6 credits of upper division literature.

430 Existential Philosophy (3) I or II Bender, Nagley, Stewart
Survey of main themes of European existential philosophy. Particular attention to Kierkegaard, Heidegger, and Sartre.

435 Philosophy of Religion (3) I or II Goodman, Nagley, Yamasaki
Problems concerning existence of God, nature of religious experience, faith and reason, immortality, religious language, alternatives to theism. (Cross-listed as Rel 435)

440 Introduction to Phenomenology (3) I or II Bender, Mehta, Stewart
Study of conceptual and historical aspects of phenomenological philosophy. Emphasis placed upon the works of Husserl, Sartre and Merleau-Ponty. Pre: 304 and 306.

441 Introduction to Contemporary Analytical Philosophy (3) II Moore
Survey of major themes in logical atomism, logical positivism and linguistic analysis. Readings from G.E. Moore to present.

444 Classical and Early Modern Logic (3) I or II Bender
Detailed study of the traditional theory of the syllogism along with early attempts in the field of modal logic; also an examination of 19th century revisions of the syllogism and the beginnings of modern mathematical logic. Philosophers studied include Aristotle, Ockham, Arnauld, De Morgan, Boole, Peirce, Russell.

445 Symbolic Logic I (3) I Copi, Harter, Wargo
Intermediate level course designed to impart the techniques of symbolic logic, both the propositional calculus and first order predicate calculus. Desirable preparation: 210.

448 Comprehensive Philosophical Systems (3) I, II
Detailed examination of philosophical systems of major Eastern and Western philosophers, such as Plato, Aristotle, Hume, Kant, Hegel, Chu-Hsi, Sankara (one philosopher per semester). May be repeated for credit on different philosophers. Pre: one of 100, 200, 201 or equivalent.

449 Philosophical Topics (3) I, II
Specialized treatment of selected philosophies, philosophical problems or movements in the Eastern and Western traditions. May be repeated for credit on different topics. Pre: consent of instructor.

600 Problems of Philosophy (3) I, II
Persistent specific problems of philosophy, primarily those concerning nature, man, God. Pre: graduate standing; consent of instructor.

605 Philosophy of Language (3) II Cheng
Concepts of meaning, truth, existence, reference, predication, quantification: analysis of analyticity and modalities with applications to philosophy, science, art.

611 Symbolic Logic II (3) II Copi
Basic course in the theory of logical systems covering both the sentential and first order functional calculus. Pre: 445.

700 Individual Western Philosophers (3) I, II
Philosophies of men such as Plato, Aristotle, Thomas, Kant, Hegel, Kierkegaard, Schopenhauer. Pre: graduate standing; consent of instructor.
715 Philosophy of Mathematics (3) I, II
Cheng
Philosophical problems concerning mathematics—mathematical truths, axioms, proof. Emphasis on contemporary research on foundations of math. Pre: 611 or 12 credits in math; consent of instructor.

720 Seminar in Ancient-Medieval Philosophy (3) I, II
Pre: graduate standing; consent of instructor.

725 Seminar in Modern Classical Philosophy (3) I, II
Pre: graduate standing; consent of instructor.

730 Seminar in Contemporary Philosophy (3) I, II
Pre: graduate standing; consent of instructor.

795 Philosophical Texts (3) I, II

799 Directed Research (v) 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.

800 Thesis Research (v) I, II

ASIAN AND COMPARATIVE

450 Indian Philosophy (3) I
Deutsch, Upadhyaya
Philosophical systems and movements: Vedas, Upanishads, six systems of Hinduism, Charvaka, Jainism, Buddhism.

460 Buddhist Philosophy (3) II
Kulupahana, Yamasaki
Survey of basic schools and tenets of Buddhist philosophy.

470 Chinese Philosophy (3) I
Chang, Cheng
Historical survey of important philosophical schools and tendencies in China, ancient and modern.

485 Modern Japanese Philosophy (3) II
Wargo
Systematic survey of the history of development of Japanese philosophy in modern period, from mid-19th century to present.

650 Individual Asian Philosophers (3) I, II
Philosophies of men such as Ramanuja, Sankara, Confucius, Chuang Tzu, Nagarjuna, Nishida. Pre: 450, 460, or 470; consent of instructor.

655 Vedanta (3) I
Deutsch, Upadhyaya
Development and many facets of Vedanta examined in their richness and complexity. Pre: 450; consent of instructor.

660 Theravada Buddhist Philosophy (3) I
Kulupahana
Analysis of early Buddhist conceptions of the nature of man. Pre: 460; consent of instructor.

661 Mahayana Buddhist Philosophy (3) II
Kulupahana
Basic principles and major schools. Emphasis upon Indian, Chinese, and later Japanese developments. Pre: 460; consent of instructor.

662 Zen (Ch'an) Philosophy (3) I
Chang
Origin and development of Zen; influence on Oriental cultural traditions and contemporary scene. Pre: 460; consent of instructor.

670 Confucianism (3) I
Cheng
Doctrinal, ethical, social, institutional problems from Confucius to present. Pre: 470; consent of instructor.

673 Neo-Confucianism (3) II
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 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 Seminar in Indian Philosophy (3) I, II
Deutsch, Mehta, Upadhyaya
Pre: 450; graduate standing; consent of instructor.

760 Seminar in Buddhist Philosophy (3) I, II
Chang, Kulupahana
Pre: 460; graduate standing; consent of instructor.

770 Seminar in Chinese Philosophy (3) I, II
Chang, Cheng
Pre: 470; graduate standing; consent of instructor.

780 Seminar in Comparative Philosophy (3) I, II
Chang, Deutsch, Mehta
Pre: graduate standing; consent of instructor.

795 Philosophical Texts (3) I, II

799 Directed Research (v) I, II
(a) Indian philosophy. (b) Buddhist philosophy. (c) Chinese philosophy. (d) East-West philosophy. Available to advanced graduate students: consent of instructor and chairman required. May be repeated.

800 Thesis Research (v) I, II

Physics (Phys) and Astronomy (Astr)

Department Office: Watanabe Hall 416

Professors: Bonnack, Cence, Henke, Holmes, Jefferies, McAllister, Orrall, Peterson, Pong, Sinton, Steiger, Tuan, M.S. Watanabe, Zirkar.

Associate Professors: Boesgaard, Dobson, Hayes, Nose, Pakvasa, Stenger, Wolvencroft, Yoount.

Assistant Professors: Crooker, Peters.

Mathematics 231 and Physics 151-154 or 170-273 are prerequisites to all courses numbered 300 or above.

100 Survey of Physics (3) I, II
Pre: 170, 171, 172, 173.

101 Survey of Physics Laboratory (1) I, II (1 3-hr Lab)
Pre: credit in 100 or 102.

102 Elementary Modern Physics (3) I, II
Pre: credit in 101.

110 Astronomy (3) I, II
Pre: credit or registration in 151.

111 Astronomy (3) I, II
Pre: credit or registration in 152.

151-152 College Physics (3-3) Yr (3L) F
Pre: credit or registration in 151. Offered only as credit/no-credit.

153 College Physics Laboratory I (1) I (1 3-hr Lab)
Pre: credit or registration in 152. Offered only as credit/no-credit.

154 College Physics Laboratory II (1) II (1 3-hr Lab)
Pre: credit or registration in 152. Offered only as credit/no-credit.

170 General Physics I (4) I, II
Pre: credit or registration in 170.

171 Experimental Analysis in Mechanics and Thermodynamics (1) I, II (1 3-hr Lab)
Pre: credit or registration in 170.

272 General Physics II (3) I, II
Pre: credit or registration in 272.

273 Experimental Analysis in Electricity and Magnetism and Optics (1) I, II (1 3-hr Lab)
Pre: credit or registration in 272.

274 General Physics III (3) I, II
Pre: credit or registration in 274.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>275</td>
<td>Experimental Analysis in Modern Physics</td>
<td>1, 2</td>
<td>I, II</td>
</tr>
<tr>
<td>310</td>
<td>Theoretical Mechanics I (3) I</td>
<td></td>
<td>I</td>
</tr>
<tr>
<td>311</td>
<td>Theoretical Mechanics II (3) II</td>
<td></td>
<td>II</td>
</tr>
<tr>
<td>350</td>
<td>Electricity and Magnetism (3) I</td>
<td></td>
<td>I</td>
</tr>
<tr>
<td>390</td>
<td>Contemporary Physics (2) II</td>
<td></td>
<td>II</td>
</tr>
<tr>
<td>399</td>
<td>Individual Work in Advanced Physics (v) I, II</td>
<td></td>
<td>I, II</td>
</tr>
<tr>
<td>400</td>
<td>Applications of Mathematics to the Physical Sciences (3)</td>
<td></td>
<td>I</td>
</tr>
<tr>
<td>405-406</td>
<td>Advanced Physics Lab (2-2) I, II</td>
<td></td>
<td>I, II</td>
</tr>
<tr>
<td>421</td>
<td>Astrophysics I (3) I</td>
<td></td>
<td>I</td>
</tr>
<tr>
<td>430</td>
<td>Thermodynamics and Statistical Mechanics (3) II</td>
<td></td>
<td>I, II</td>
</tr>
<tr>
<td>440</td>
<td>Solid-State Physics (3) I, II</td>
<td></td>
<td>I, II</td>
</tr>
<tr>
<td>450</td>
<td>Electromagnetic Waves (3) II</td>
<td></td>
<td>I</td>
</tr>
<tr>
<td>460</td>
<td>Physical Optics (3) I</td>
<td></td>
<td>I</td>
</tr>
<tr>
<td>480</td>
<td>Atomic and Nuclear Physics I (3) I</td>
<td></td>
<td>I</td>
</tr>
<tr>
<td>481</td>
<td>Atomic and Nuclear Physics II (3) I</td>
<td></td>
<td>I</td>
</tr>
<tr>
<td>490</td>
<td>Quantum Electronics (3)</td>
<td></td>
<td>I</td>
</tr>
<tr>
<td>502</td>
<td>Electronics for In-service Teachers (2)</td>
<td></td>
<td>I</td>
</tr>
<tr>
<td>600</td>
<td>Methods of Theoretical Physics I (3) I</td>
<td></td>
<td>I</td>
</tr>
<tr>
<td>610</td>
<td>Analytical Mechanics I (3) I</td>
<td></td>
<td>I</td>
</tr>
<tr>
<td>621</td>
<td>Stellar Atmospheres I (3) II</td>
<td></td>
<td>I</td>
</tr>
</tbody>
</table>

A & S—Physics & Astronomy

---

623 Stellar Interiors and Evolution (3) I
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 402 or credit or registration in 400 or 600. (Alt yrs; offered 1974-75)

627 Galactic Structure I (3) I
Stellar statistics, stellar populations, and structure of galaxy. Pre: consent of instructor. (Alt yrs; offered 1974-75)

629 Astrophysical Techniques (3) I
Experiments in photoelectric and photographic photometry, spectroscopy, optics, infra-red techniques, stellar classifications, and positional astronomy. Practical observing experience. Pre: consent of instructor. (Alt yrs; offered 1972-73)

650 Electrodymanics I (3) II
Potential theory, Maxwell's equations, electromagnetic waves, boundary value problems. Pre: 450; Math 402 or credit or registration in 400 or 600. (Alt yrs; offered 1974-75)

651 Electrodymanics II (3) I
Relativistic electrodynamics, radiation by charged particles. Pre: 650. (Alt yrs; offered 1974-75)

660 Advanced Optics (3) I
Wave motion, interference, diffraction, fundamentals of spectroscopy, optics from viewpoint of electromagnetic theory, lasers. Pre: 460. (Alt yrs; offered 1974-75)

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 development 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 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.

725 Planetary Physics (3) I
Physical processes and the composition of planetary interiors, surfaces, atmospheres, and environment. Pre: consent of instructor. (Alt yrs; offered 1973-74)

730 Statistical Mechanics (3) I
Probability and statistics, classical and quantum statistical mechanics, relation to thermo-dynamical variables, applications. Pre: 430, 610, 770. (Alt yrs; offered 1973-74)

732 Astrophysical Spectra (3) I
Description and interpretation of spectra of such objects as: stars with extended atmospheres, planetary and gaseous nebulae, H II regions, novae. Pre: 480. (Alt yrs; offered 1974-75)

733 Special Topics in Astronomy (3) 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. May be repeated for credit.

770-771 Quantum Mechanics (3-3) Yr
Physical basis and formulation of quantum theory. Exact solutions of Schroedinger equation and their applications. Approximation methods. Applications to atomic, nuclear, and molecular physics. Pre: 481, Math 403-404 or Physics 600. (Alt yrs; offered 1974-75)
Political Science (PolSc)

Department Office: Hawaii Hall 2


Associate Professors: Bwy, Cahill, Chadwick, Henningsen, Kent, Neubauer, Shapiro.

Assistant Professors: Kerkvliet, Lee, Mezey, Milner, Nitz, Rohter, Wilson.

Acting Assistant Professor: Povey.

110 Introduction to Political Science (3-3) I, II Bwy, Cahill, Wilson

Introduction to political problems, systems, methodologies, processes.

POLITICAL THOUGHT

300-301 Political Thought (3-3) I, II Henningsen, Nitz, Kariel, Wilson

Consideration of major elements of political theory.

305 Topics in Political Thought (3) Cahill, Dator, Henningsen, Nitz, Kariel, Wilson

To be pre-announced each semester. Recent topics include: Political Ideology, Revolutionary Movements and Theory, Political Extremism, Utopias, Political Futuristics.

INTERNATIONAL RELATIONS

320-321 International Relations (3-3) I, II Chadwick, Haas, Jacob, Levi, Kent, Lee, Rummel

Integrated introduction to international relations and organization. (320 prerequisite for 321 unless waived by department.)

325 Topics in International Relations (3) Chadwick, Haas, Jacob (3-3) I, II Levi, Kent, Lee, Rummel

To be pre-announced each semester. Recent topics include: International Organization, South and Southeast Asian International Politics, U.S. Policy in Vietnam, American Foreign Policy, International Politics in East Asia, Coalition Formation and Alliance.

POLICY FORMATION

330-331 Policy Formation (3-3) I, II Cahill, Neubauer, Nitz, Rohter, Shapiro

Genesis, organization, expression, efficacy of political demands.

333 American Government (3) I, II Mezey

Organization and functioning of American political system.

335 Topics in Policy (3) I, II Cahill, Dator, Mezey, Neubauer, Nitz, Shapiro


COMPARATIVE GOVERNMENT AND POLITICS

340-341 Comparative Government (3) I, II Kuroda, Lee, Paige, Stauffer

Integrated introduction to comparative political institutions and patterns.

345 Topics in Comparative Government (3) Kuroda, Meller, Paige, Stauffer

To be pre-announced each semester. Recent topics include: Political Leadership, Comparative Political Analysis, Japanese Politics. Latin American Politics. Political Modernization, China, Oceania, Soviet Union, Comparative Communist Systems.

PUBLIC ADMINISTRATION

350-351 Public Administration (3-3) I, II Friedman, Meller

Bureaucracy and anti-bureaucracy are the cornerstones in this introduction to study of organizations in their current forms and in trends for the future.

355 Topics in Public Administration (3) I, II Bwy, Friedman, Meller

To be pre-announced each semester. Recent topics include: University Administration in Developing Countries. Bureaucracy, Organizational and Management Theory.

PUBLIC LAW AND POLITICS

360-361 Public Law and Politics (3-3) I, II Becker, Milner, Schubert

Integrated introduction to interrelationship between judicial process and political system. (360 prerequisite for 361.)

365 Topics in Public Law and Politics (3) I, II Becker, Milner, Schubert


600 Scope and Methods of Political Science (3-3) I, II Haas

Main concepts delineating boundaries of discipline: approaches to knowledge employed by political scientists; empirical and normative theory; problems in theory-building: validity and reliability in research design; philosophy of science as applied to political science.

601 Political Analysis, Theory Building and Techniques (3) I, II Chadwick

Research techniques in current use by department members, including content analysis, survey and interviewing, experimentation, etc. Students will assist in a relevant research project.

602 Research Practicum (3) Chadwick

Introduction to statistical analysis from simple bivariate through multivariate analysis.

610 Political Thought (3) I, II Henningsen, Kariel, Neubauer, Shapiro, Wilson

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.
630 International Relations Chadwick, Haas, Jacob, (3) I, II Levi, Kent, Lee, Rummel
At least one section a semester, with focus on sections varying among foreign policy, international law, theoretical problems in international relations, global or regional organization.

640 Comparative Government Bwy, Kerkvliet, Kuroda, and Politics (3) I, II Mezey, Paige, Stauffer
At least one section a semester, with focus on 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 Friedman, Meller, Riggs
One section each semester, with focus on sections varying among theoretical approaches to study of administration, comparative, development administration.

651 Functional Aspects of Public Administration (3) Friedman, Meller, Paige, Povey, Riggs
Sections on functional aspects of American administration (personnel and financial administration, planning, etc.)

659 Directed Reading and Research (v) I, II Staff
Pre: consent of instructor.

660 Public Law and Judicial Systems (3) Becker, Milner, Schubert
At least one section a year surveying literature on interaction of judiciaries and political systems.

670 Politics (3) Dator, Kuroda, Nitz, Rohrer, Schubert
At least one section a year surveying literature on study of politics and political interaction.

Analysis of political development, international relations, decision making processes, and systems of political thought in all or part of Asia.

699 Directed Reading and Research (v) I, II Staff
Pre: consent of instructor.

710* Seminar: Political Thought (3) Neubauer, Nitz, Wilson
Pre-announced topics: at least one section a year.

720* Seminar: American Government (3) Meller
Pre-announced topics: at least one section a year.

730* Seminar: International Relations (3) I, II Kent, Lee, Levi, 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 Jacob, Kerkvliet, Kuroda, Mezey, Stauffer
Pre-announced topics: at least one semester.

750* Seminar: Public Administration (3) I, II Friedman, Meller, Povey, 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, Milner, Schubert
Research projects emphasizing American system or comparative analysis, as pre-announced; at least one section a year.

770* Seminar: Politics (3) Nitz, Povey, Rohrer
Pre-announced topics: at least one section a year.

780* Politics of Regions (3) I, II Bwy, Friedman, Haas, Jacob, Lee, Levi, Meller, Stauffer
Analysis of political development, international relations, decision making processes, and systems of political thought in regions and subregions of the world.

800* Thesis I, II Staff

Consent of instructor prerequisite. Seminars may be repeated for credit.

Population Studies (Pop)

Program Office: Lincoln Hall 205

Professors: Chapman, Chao, Cho, Fawcett, Feeney, Fuller, Howard, McNicoll, Overbeek, Palmore, Pirie, Retherford, Rosario.

650 Introduction to Demography (3) I Palmore
Comparative analysis in terms of quantitative and qualitative aspects of population; factors affecting size, distribution, and composition of the population; impact of population size and composition on society.

691 Methods of Demographic Analysis (3) I Cho
Methods of standardization of population; evaluating and correcting census returns and selected vital data; measurement of mortality and fertility; life tables; measuring internal migration; estimating population size and characteristics.

700 Techniques of Estimation from Limited Data (3) II Staff
Special techniques for obtaining demographic measures from limited data, with particular reference to Asia and the Pacific; demographic models; new approaches in generating and processing demographic information. Pre: 691.

799 Directed Reading and Research (v) I, II Staff
Pre: consent of program director.

750 Interdisciplinary Seminar in Population Studies (3) II Pirie
Major theoretical developments and research problems in the field of population studies as seen from vantage point of various behavioral sciences and related applied disciplines.

Psychology (Psy)

Department Office: Gartley Hall 110

Professors: Arkoff, Bitter, Bitterman, Blanchard, Crowell, Digman, Herman, Jakobovits, Johnson, Staats, Tharp, Ullman, Watson, Weaver.

Associate Professors: Dubanoski, Fawcett, MacDonald, Mansson, Minke, Shapiro, Carlson.

Assistant Professors: Ciborowski, Diamond, Evans, Marsella, Murray, O'Donnell, Tanabe.

100 Survey of Psychology (3) I, II
Principles of human behavior, individual differences, motivation, emotion, perception, learning.

110 Psychology of Adjustment (3) I, II

112 Introductory Laboratory in Psychology (3) I, II
Introduction to the experimental method in psychology. Supervised experiments in human and animal learning and performance, with emphasis on laboratory control, data analysis, and communication of findings. Pre: 100.

113 Mathematical 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.

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: 112.

215 Sensory Processes (3) II
Psychophysics; vision, audition, taste, smell. Pre: 100, 112.
216 Individual Differences and Measurement (3) I, II
Individual differences in personality, aptitude, intelligence; construction, validation, administration of tests; interpretation of scores. Pre: 113.

230 Social Behaviorism (3) I
Outline of basic learning principles. A general, unified approach to the study of human personality and behavior. Based upon a learning conception, various areas of psychology and the other social sciences are treated. Pre: 100.

317 Physiological Psychology (3) I
Psychological basis of vision, audition, motivation, emotion, and learning.

318 Animal Psychology (3) I
Animal studies in learning, perception, motivation, physiological mechanisms. Pre: 100, 112.

319 Experimental Psychology (3) II
Original experiments with emphasis upon laboratory techniques. Control of variables, apparatus design, statistics in research. Pre: 100, 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.

321 Psychology of Personality (3) I, II
Scientific study of personality, its meaning, assessment, development, relation to cultural-social determinants. Pre: 100.

322 Social Psychology (3) I, II
Interpersonal relations; social attitudes; group dynamics; intergroup relations; class and cultural influences. Pre: 100.

401 Experimental Analysis of Behavior (3) I
The theoretical and methodological views of B.F. Skinner and psychologists sympathetic to his position. The data and implications of the systematic study of the behavior of individual organisms. Pre: 100, 112.

423 History of Psychology (3) II
Background of modern psychology. Origin and development of contemporary points of view. Pre: 100.

424 Abnormal Psychology (3) I, II
Nature and causes of psychoneuroses and psychoses: abnormalities of intelligence; psychotherapy. Pre: 100.

426 Industrial Psychology (3) I

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 Advanced Undergraduate Seminar (3) I, II
Coverage in depth of some area of research and theory. Topics may be initiated by instructors or by request of six or more students. May be repeated for credit. Pre: consent of instructor.

432 Psychological Aspects of War and Peace (3) I, II
Examination of social and personal factors involved in movements toward war and peace. Pre: 100 or equivalent.

434 Seminar on the Psychology of Knowledge (3) II
Psychology of the acquisition, communication and employment and knowledge: historical, contemporary and futuristic contributions of psychology to the acquisition of human knowledge. (Topics may vary from semester to semester.) Pre: consent of instructor.

471 Environmental Psychology (3) I
Psychological aspects of problems of ecology, environment, and the future. (Cross-listed as Arch 471)
Practicum in Clinical Psychology (v) I, II
Research in Clinical Psychology (3) I, II
Internship in Clinical Psychology (0) I, II

682 Adult Behavior Disorders and Intervention (3) II
Disturbances in adult behavior, and techniques for amelioration. Pre: 675, 676.

683 Social Behavior Disorders and Intervention (3) I
Development of social problems such as crime and delinquency, substance abuse, cultural deprivation, etc., and techniques for amelioration. Pre: 675, 676.

684 Cognitive Approaches to Behavior Change (3) II
Theories of contemporary developments in cognitive-clinical psychology. Practicum experience will be provided. Pre: 682 or equivalent.

687 Practicum in Behavior Change: Community Issues (3) I
Supervised experience in educational, mental health, correctional, consulting, or community action agencies. Pre: consent of instructor.

688 Practicum in Behavior Change in Children (3) I
Supervised experience in analyzing and developing methods for therapeutic change in children. Pre: consent of instructor.

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.

690 Practicum in Clinical Psychology (v) I, II
Pre: consent of instructor.

699 Directed Reading or Research (v) I, II
Pre: consent of instructor and department chairman.

700 Seminar (3) I, II

710 Seminar in Teaching Psychology (1) I, II
Theory and methods for the teaching of psychology. Observation of psychology classes. Experience in preparation of lectures, discussions, quizzes and examinations, and practice in class presentations. Consideration of current and needed research. Pre: consent of instructor.

714 Survey Research Methods (3) I, II
Field methods in social psychology; sampling, field observation, interviewing, coding methods; study of intact groups and organization in their natural setting. Pre: 322 or equivalent. (Identical with Soc 714)

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.

795 Internship in Clinical Psychology (0) I, II
Pre: consent of instructor and department chairman.

800 Thesis or Dissertation Research (v) I, II
Maximum of 6 credits. Not repeatable for credit toward master's degree.
Religion (Rel)

Department Office: George Hall 344

Professors: Aoki, Seifert.

Associate Professors: Bloom, Bobilin, Crawford, Klimenko, Long, Olson.

Acting Assistant Professor: Chappell.

150 Introduction to the World's Major Religions
(3) I, II, SS
Introduction to the world's major religions—Hinduism, Buddhism, Shinto, Confucianism, Taoism, Judaism, Islam, Christianity.

151 Religion and the Meaning of Existence (3) I, II, SS
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) I
Study of developing beliefs and practices of Hebrew religion as set forth in the Old Testament. Emphasis on meaning of its faith for the modern world.

201 Understanding the New Testament (3) II

202 Understanding Indian Religions (3) I, II
The major religious traditions of India—Hinduism, Jainism, and Buddhism—from earliest times to the present.

203 (476) Understanding Chinese Religions (3) I
Study of Taoist, Confucian, Buddhist, Miaoist and folk beliefs and practices in their social and historical contexts.

300 The Study of Religion (3) I
Definitions and functions of religion, its varieties and methodologies by which it is studied, emphasis on its relationship to other areas of human endeavor.

322 Survey of Social Organization and Change (3) I, II
Topics to be pre-announced each semester. Some recent topics include industrial sociology, race and ethnic relations, social stratification. (Cross-listed as Soc 322)

351 (361) Religion and Images of Reality (3) I, II
Continuation of 151 on a more advanced level. Consideration will be given to structures of human consciousness: Man as myth-maker, symbolizer, believer, mediator and questioner. Pre: 151.

365 (474) Religion and Social Change (3) I
Analysis and discussion of classical and recent sources dealing with religion and rapid social change, technological revolution, non-violence, black power, and theology of revolution.

398 Charisma of the Cults (3) II
Charisma of the cults is a study and analysis of contemporary religious movements through direct interaction with representatives of local bodies. Together with research and study, the student will be provided with opportunity to observe activities and ideas of a variety of contemporary movements. He will explore the basis of attraction, maintenance of affiliation and the philosophical content of these movements. The movements to be studied derived from East as well as West.

409 (309) Seminar on the Life and Teachings of Jesus (3) I
Critical study of the synoptic gospels and of relevant extra-biblical sources pertaining to the life and teachings of Jesus. Pre: 201; upper division standing or consent of instructor. (Not offered 1973-74)

422 Comparative Religion (3) II
Comparative, structural and functional analysis of supernaturalism, primarily in tribal and folk societies. Anthropological theories of religion and magic. Pre: Anth 200. (Cross-listed as Anth 422)

435 Philosophy of Religion (3) II
Problems concerning existence of God, nature of religious experience, faith and reason, immortality, religious language, alternatives to theism. (Cross-listed as Phil 435)

451 (486) Christian Ethics and Social Programs (3) II
Basic systems and application of Christian ethics. Emphasis on differing thought on major social issues, analysis of significant factors affecting different thinkers and indication of relevance of Christian thought to contemporary social problems. Pre: upper division standing or consent of instructor.

452 Analysis in Social Institutions (3) I, II
Topics to be pre-announced each semester. Some recent topics include education, religion, family, institutions of Japan, China and Korea. Pre: Soc 200 or consent of instructor. (Cross-listed as Soc 452)

453 (488) Theology of Peace (3) I
Study of the nature of peace, revolution and war, violence and non-violence, as revealed especially in contemporary history, from a theological perspective. Pre: 365: upper division standing or consent of instructor.

454 (602) Religion and Social Thought of Mohandas Gandhi (3) II
Study of the life and teaching of Gandhi with special emphasis on his religious beliefs and his social and political ethics. Pre: 202.

455 (485) Ethics in Asian Religions (3) I
Comparative analysis of ethical thought and practice in cultures and of persons shaped by the major religions of Asia. Pre: 150 or consent of instructor.

465 Religion and Social Change in Asia (3) II
Study of interrelationship of society and religion in Asia. Emphasis on roles of traditional elites, heterodox religious movements, effects of modernization and secularization on religious organization, socio-religious movements in developing countries. Pre: 365: upper division standing or consent of instructor.

471 History of Indian Buddhism (3) II
Development of Buddhism in India and Tibet; problems in the interpretation of Buddhist literature, practice, and institutions. Pre: 202 or consent of instructor.

475 History of Chinese Buddhism (3) I, II
Historical study of the assimilation of Buddhism into Chinese society, the development of Chinese Buddhist doctrine and schools, and the evolution of popular practices. Pre: 203 or consent of instructor.

480-481 History of Religions in Russia (3-3) Yr
480: Historical background of Orthodox Christianity in Russia from the beginnings of the 9th C. up to the 19th C., its impact on people and culture. 481: Russian State Church, rational and mystical sects from the 19th C. through the Communist Revolution up to the present. Marxism and religion. Pre: upper division standing or consent of instructor.

483 History of Judaism and Christianity (3) II
Basic beliefs and practices of Judaism, Roman Catholicism, Protestantism, their history, beliefs, contributions. Pre: 200 recommended.

490-491 Buddhism in Japan (3-3) Yr
Survey of major features and trends in the development of Buddhist institutions and traditions in the context of Japanese history and culture. Major expressions of Buddhist thought and life will be examined against the social background of the various periods of Japanese history. 490: 6th C. to the Heian Period in the 12th C. 491: 13th C. of the Kamakura Period to modern times. Pre: 150 or consent of instructor.

495 Seminar in Religion (3) I
Topics to be pre-announced each semester. Individual or group projects providing training in research and analysis in the field. Pre: 300 and one "area course" or consent of instructor.

499 Directed Reading or Research (3) I, II
Pre: 2.7 or 3.0 in Religion; consent of instructor.

600 (630) History and Theory of the Study of Religion (3) I
Focus on significant events, phenomena and ideas in the history and practices of religions. Insights and methodologies of scholars from anthropology, history, philosophy, political science, psychology and sociology will be related to the history and practice of religions.
651 Selected Problems of Theology (3) I, II
Pre: graduate standing; consent of instructor.

655 (784) Seminar in Religion and Social Change (3) II
Socio-ethical analysis of the relationship of religion and social change. Emphasis on roles of leadership and elites, syncretic religious movements, modernization, technological revolution and ethnic conflict. Pre: 365 or 465 or consent of instructor.

682 Topics in Indian Religions (3) I, II
Advanced study of a selected tradition, movement, theme, or body of literature: e.g., Veda and Upanishads, Mahayana texts, modern Hinduism. May be repeated for credit. Pre: 202 or consent of instructor.

685 Topics in Japanese Religions (3) I, II
Advanced study of one of the religions of Japan: e.g., Shinto, Lotus Sutra, Nichiren. May be repeated for credit. Pre: 490, 491 or consent of instructor.

686 Topics in Chinese Religion (3) I
Studies in selected aspects of Chinese religion, such as T‘ien-t’ai, Pure Land, Hua-yen or Ch‘uan Buddhism, Taoist sectarianism, Western religions in China, or Confucian state religion. May be repeated for credit. Pre: 203 or consent of instruction.

695 Research Seminar in Religion (3) II
Topics to be pre-announced each semester. Individual or group projects providing advanced training in research in Asian religion. Pre: 630 and a 400-level area course or consent of instructor.

Science, General (Sci)

Department Office: Dean Hall 2

Professor: Kay.
Associate Professor: Newhouse.
Assistant Professors: Crain, Fellows, Haraway, Lipparelli.
Instructors: Jones, Kadooka, Nishimoto, Shank, Southworth, Bigelow.

121 Introduction to Science: Biological Science
(4) I (3L-1Lb) Fellows
Characteristics of science and interaction of society with science illustrated by topics from biological science. Not open to students who have had 123.

122 Introduction to Science: Physical Sciences
(4) II (3L-1Lb) Lipparelli
Characteristics of science and interaction of society with science illustrated by topics from physical sciences.

123 Introduction to Science: Hawaiian Perspectives
(4) I (3L-1Lb) Kay
Characteristics of science and interaction of society with science illustrated by topics in geology, astronomy, oceanography, and biology of the Hawaiian Islands. Not open to students who have had 121.

124 Technology, Ecology, and Man (4) II Fellows
Man's ecology in past, present, and future as seen by analysis of the interrelationships between science and technology, the means these provide for manipulation of environment, and the effects of this manipulation on environment and on human populations.

298 Biology and Man Fellows
Explores the relationship between, and application of, past and present basic biological research in genetics, behavior, ecology and other fields to the realm of daily human existence. Designed primarily for nonscience majors.

312 Survey of Demography and Ecology (3) I, II
Topics to be pre-announced each semester. Some recent topics include demographic problems, ecology. Pre: 200 or consent of instructor.

314 Introduction to Basic Biological Research in Genetics, Behavior, Ecology, and Other Fields to the Realm of Daily Human Existence (3) I, II
Formulation, structure, distribution and biotas of atolls. Emphasis on the atoll as an ecosystem and as one of man's environments. Pre: one year of introductory science.

330 Man and Science in the Pacific (3) I
Anatomy, history and activity of science in the Pacific area; discussion of selected topics. Pre: one year of introductory science. (Alt yrs; not offered 1973-74)

398 Sex Differences in the Life Cycle Haraway
Biological and biobehavioral bases of sexual dimorphism in Homo sapiens—from embryo to old age; nutrition, hormonal and drug effects, susceptibility to disease, adult sexual functioning, venereal disease; history of sexual theories.

420 Case Histories in Science (3) I (2L-Lb) Fellows
Emphasis on relationship 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 History of Science (3) I Haraway
Man's changing ideas concerning the universe reflected against historical setting. Pre: one year of natural science. (Cross-listed as Hist 430)

620 Natural Science as a Human Activity (3) I, II Kay Seminar. The scientist: productivity in science; comparisons of several fields; anatomy of science; science and society. May be repeated.

Sociology (Soc)

Department Office: Crawford 327

Professors: Ball, Barringer, Bloumbaum, Freeman, Kassebaum, Volkart, Won, Yamamura, Yeh.
Associate Professors: Babbie, Cho, Maykovich, Palmore, Sakimoto, Steinhoff, Sunshine, Swift, Yamamoto.
Assistant Professors: Chandler, Cheng, Endo, Seldin, Weinstein.

Students should consult sociology departmental adviser and the current descriptions of course offerings each semester.

100 Survey of General Sociology (3) I, II
Survey of basic social relationships, social structures and processes.

200 Introduction to Principles of Sociology (4) I, II
Introduction to basic theory, methods and analytic techniques used in sociology.

312 Survey of Demography and Ecology (3) I, II
Topics to be pre-announced each semester. Some recent topics include population problems, ecology.

322 Survey of Social Organization and Change (3) I, II
Topics to be pre-announced each semester. Some recent topics include industrial sociology, race and ethnic relations, social stratification. (Cross-listed as Rel 322)

332 Survey of Social Control (3) I, II
Topics to be pre-announced each semester. Some recent topics include juvenile delinquency, criminology.

342 Survey of Social Psychology (3) I, II
Topics to be pre-announced each semester. Some recent topics include culture and personality, small groups, collective behavior.

352 Survey of Social Institutions (3) I, II
Topics to be pre-announced each semester. Some recent topics include education, religion, family, institutions of Japan, China and Korea.

362 Survey of Applied Sociology (3) I, II
Topics to be pre-announced each semester.

412 Analysis in Demography and Ecology (3) I, II
Topics to be pre-announced each semester. Some recent topics include demographic problems, ecology. Pre: 200 or consent of instructor.

422 Analysis in Social Organization and Change (3) I, II
Topics to be pre-announced each semester. Some recent topics include industrial sociology, race and ethnic relations, social stratification. Pre: 200 or consent of instructor.
432 Analysis in Social Control (3) I, II
Topics to be pre-announced each semester. Some recent topics include juvenile delinquency, criminology. Pre: 200 or consent of instructor.

442 Analysis in Social Psychology (3) I, II
Topics to be pre-announced each semester. Some recent topics include personality and culture, small groups, collective behavior. Pre: 200 or consent of instructor.

452 Analysis in Social Institutions (3) I, II
Topics to be pre-announced each semester. Some recent topics include education, religion, family, institutions of Japan, China and Korea. Pre: 200 or consent of instructor.

462 Analysis in Applied Sociology (3) I, II
Topics to be pre-announced each semester. Pre: 200 or consent of instructor.

472 Analysis in Sociology: Theory, Methods, Statistics (3) I, II
Topics to be pre-announced each semester. Pre: 200 or consent of instructor.

495 Topics in Sociology: Faculty Projects Normally Limited to 10 Students (v) I, II
Topics to be pre-announced each semester. Pre: 200 or consent of instructor.

496 Topics in Sociology: Student Projects (v) I, II
Students will create their own study group and solicit an adviser from the faculty. Students should consult the department for assistance.

499 Directed Reading or Research (v) I, II

620 Proseminar I: The Sociological Profession (3) I
Graduate introduction to the profession of sociology: an examination of sociologists at work: research, teaching and related intellectual activities. To be taken concurrently with Proseminar II. Pre: consent of instructor.

621 Proseminar II: The Field of Sociology (3) I
Graduate introduction to the history and substance of sociological thought: examination of various specialties within the profession, their history and contemporary status; a comprehensive study of the sociological perspective. To be taken concurrently with Proseminar I. 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, (5) problems in comparative research. 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) I, 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, (8) comparative social institutions. 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) criminal correction. 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.

732 Seminar in Comparative Sociology (3) I, II
Major theoretical and research developments in comparative examination of societies: (1) comparative social institutions, (2) methods of comparative research, (3) comparative institutions of East Asia. Pre: consent of instructor. May be repeated for credit.

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.

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, (3) population dynamics. 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 (v) I, II
Pre: graduate standing: consent of instructor.

800 Thesis Research (v) I, II

Speech (Sp)

Program Office: George Hall 321

Professors: Billsborrow, Breneman, Klopf.
Associate Professors: Krause, Wong.
Instructors: Kido, Marcil.

151 Introduction to Speech (3) I, II, SS
Introduction to major elements of speech. Activities for students to acquire competence in two-person, small group, and public situations. Practice in basic speech forms and techniques. Models and concepts to explain the speech act.

211 General Phonology (3) I, II
Phonology of American English, using the International Phonetic Alphabet. Application to dialect description and speech modification.

231 Interpretive Reading (3) I, II, SS
Principles of interpretive reading. Practice in textual analysis and in transmitting intellectual and aesthetic content of literature.

232 Group Interpretation (3) II
Material selection; techniques and procedures for choral speaking: adaptations of Reader's Theatre; extensive practice in participation and direction. Pre: 231 or equivalent.

251 Principles of Effective Speaking (3) I, II, SS
Adaptation of rhetorical theory to particular speakers, audiences, occasions. Extensive practice in planning and delivering speeches. Pre: 151 or equivalent.
252 Voice and Diction (3) I, II
Speech mechanism and voice production. Techniques to enhance voice and diction for effective speech communication. Special section for foreign students offered alternate semesters.

253 Argumentation and Debate (3) I, II
Adapting communication theory to the structuring of forensic strategies for social action. Extensive practice in formal argument. Pre: 151 or 251.

254 Persuasion (3) I, II & SS
Study of theories, concepts, strategies and processes of interpersonal persuasion in contemporary society. Practical experience in analyzing a wide variety of persuasive messages and skills in developing and presenting persuasive messages. Pre: 151 or equivalent.

255 Presentational Speaking in Business and Industry (3) I
Study of the special role of presentational speaking and conference leadership in business and industry. Practical experience in developing and presenting speeches; organizing training sessions and conferences.

321 Speech for the Classroom Teacher (3) I, II, SS
Analysis of and practice in using major models of speech communication in the classroom. Focus placed on the role of speech in various academic disciplines as needed by teachers. Pre: 151 or 251.

333 Storytelling (3) I, II, SS
Esthetic communication through storytelling for entertainment and education. Oral tradition; analysis of story types; techniques of preparation and presentation; performance. Pre: 151 or equivalent.

352 Group Discussion (3) I, II & SS
Study of discussion within the context of the small group. The effects of variables such as group organization, leadership, membership, and goals on how the group attempts to achieve its purposes. Pre: 151 or consent of instructor.

385 Culture and Communication (3) I, II, SS
Survey of major factors affecting interpersonal communication between members of different cultures. Emphasis is upon interaction between U.S. and Asian-Pacific peoples.

386 Culture and Communication: Japan and the U.S. (3) I, II & SSA
Study of intercultural interaction between persons from Japan and the United States in fields of education, diplomacy, business and industry, and the underlying cultural variables shaping speech events with special emphasis on interpersonal relations.

403 Research Methods in Speech (3) I
Study of traditional and current research methods in speech. Examination of major theories, hypotheses and findings in various areas of the speech field. Development of competence in basic skills for research. Pre: one course in statistics or consent of instructor.

413 Trends in Language Teaching (3) I
Contemporary studies in the use, learning, and teaching of language. Examination of language teaching materials currently used in Hawaii. Pre: 211 or Ling 102.

431 Advanced Interpretative Reading (3) I, II, SS
Problems in selected literary forms; development and arrangement of programs; individual and group reports and performances. Pre: 231 and sophomore literature.

432 Readers Theatre (3) II, SS
Origins and concepts; performing art for the classroom and the public; techniques for the participant and the director; creative projects and performance. Pre: 231 or 232.

491 Semantics (3) I, II
Understanding language; verbal meaning and implication; roles of perception and assumption in human relationships; relation of language symbols to emotion and attitude.

492 Nonverbal Communication (3) I, II & SS

499 Special Problems (v) I, II, SS
(1) Public address; (2) teacher preparation; (3) oral interpretation; (4) group processes; (5) intercultural communication. Pre: consent of instructor or department chairman.

Speech-Communication (SpCom)

(This program is in process of replacement. Consult the program in communication and the program in speech for details.)

601 History of Theory and Trends in Speech-Communication Research (3) I
Examination of major theories and hypotheses about speech-communication which have accompanied trends in research. Study of current research methods and their application to contemporary problems. Pre: Comun 406 or consent of instructor.

602 Methods of Scientific Research in Speech-Communication Systems (3) II
Study of methods of scientific research. Development of competence in fundamental skills necessary for completion of a thesis. Pre: 601 and one of the following—671, 672, 681 or 682.

631 Seminar in Interpretation (3) I
Current literature in interpretation; reports; lecture-recitals. Pre: consent of instructor.

651 Seminar in Rhetoric and Public Address (3) II
Review of rhetoric and public address. Pre: consent of instructor.

671 Speech-Communication in Control of Cognition (3) I
Research and research techniques in the facilitation via speech-communication of the learning and accessing of various types of meaningful verbal information. Pre: Comun 385, 406 or equivalents.

672 Speech-Communication in the Control of Behavior (3) II
Research and research techniques in the use of speech-communication to shape psychomotor skills and relevant attitudes. Pre: 671.

681 Speech-Communication Process Analysis (3) II
Description of problems involved in analyzing various aspects of the speech-communication process. Theoretical frameworks of analysis. Pre: consent of instructor.

682 Speech-Communication: Theories of Source-Receiver Behavior (3) II
Description and analysis of some major behavioral science theories which describe and predict the behaviors of sources and receivers in communicating. Pre: consent of instructor.

696 General Seminar (3) I, II
Seminar on selected topics in speech-communication. May be repeated with permission of department chairman. Pre: consent of instructor and department chairman.

784 Seminar in Intercultural Speech-Communication (3) I
Focus on the major variables of speech-communication in an intercultural context. Linguistic and non-verbal factors. Possibilities for training in intercultural, face-to-face communication roles. Pre: Comun 384 or Sp 385 or at least one course in cultural anthropology, or consent of instructor.

785 Seminar in Speech-Communication in Innovation (3) II
Role of speech and other forms of communication in facilitating adoption of new ideas and practices. Analysis of client systems and their relation to the agent of change. Development of criteria for measuring change. Pre: consent of instructor.

799 Research (v) I, II
See instructions under Sp 499.

800 Thesis (v) I, II
The College of Business Administration was founded in 1949 and accredited by the American Association of Collegiate 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, 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 associate 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

- Communications ........................................ 6
- Quantitative Reasoning (BAS 121-122 or 125) ......................... 3
- World Civilizations ........................................ 6
- Humanities (including one course in literature) .................. 9
- Natural Sciences ......................................... 9-12
- Social Sciences (BEc 201 or Econ 120 or Econ 150 or Ag 220 is required) .... 9

In order to qualify for a degree a student must:
1. Meet all pre-admission requirements to the College;
2. complete one of the 9 curricula of the College;
3. complete the University curricular requirements (see p. 34);
4. earn an aggregate of at least 124 semester hours of credit;
5. earn a minimum of a 2.0 grade-point average for (a) all registered credits, (b) all required upper-division CBA courses (including the major field), and (c) the major field (see "Degree Programs").

Curricula

All students must complete the following:

Group I. Economics (6 credit hours): Business Economics 341, 343.

Group II. Business Core (21-24 credit hours): Business Analysis and Statistics 301-302 or 305; Finance 300; Law 300; Management 301-302; Management 345; Marketing 300, and one course in business responsibility and society.

Group III. A major of 15 credit hours (18 for Accounting). *See below.

Group IV. Management 209 or English 309, and 15 credit hours of upper division courses, at least 9 of which must be outside of the College of Business Administration.

It is suggested that students take BAS 301-302 or BAS 305, Eng 309, and BEc 341 early in their program. In addition each student must take BAS 351 or the equivalent.
Majors


Foreign Trade. Required: BEc 361, 362; Mkt 315, 381. Elective: one upper-division business administration course.


*Travel Industry Management is an exception; see requirements listed under majors.
331 Auditing (3) I, II
Auditing concepts including standards, objectives, and ethics for external auditors. Emphasis on reporting standards, internal control, evidence, statistical sampling, and EDP audits. Pre: 305 and 323 or 365.

335 Governmental Accounting (3) II
Concepts and principles of accountability for nonprofit seeking entities, with emphasis on governmental units. Includes budgetary control and fund accounting systems and principles. Pre: 202.

341 Accounting Systems and Procedures Analysis (3) II
Examination of accounting subsystems and the role of computers in accounting process. Includes field trips and examination and evaluation of actual systems in present-day use. Pre: 202. BAS 351 recommended.

361 Accounting for Managerial Planning (3) I, II
Strategic and long-range planning, short- and long-term budgeting, behavioral applications of budgeting and control systems, funds flow, PPBS and cost-benefit analysis in private and public sectors. Pre: 305.

365 Enterprise Analysis and Reporting (3) I or II

399 Directed Research (3)
Reading and research in a special area within the major field under direction of a single faculty member. Limited to senior majors with grade-point averages in accounting of 3.0 or better.

437 Advanced Tax Problems (3) I, II
Study of advanced aspects of federal tax problems as related to individuals, partnerships, estates, trusts, and corporations; estate and gift taxation also included. Tax research and tax planning emphasized. Pre: 307 or equivalent.

445 Advanced Cost Accounting (3) I, II

703 Advanced Auditing (3) I
Philosophy and environment of auditing and reporting, including behavioral aspects. Emphasizes recent developments and research in auditing standards, professional ethics, legal liabilities, auditing EDP systems, statistical sampling, management audits, and international auditing. Pre: 331.

704 Computers and Accounting in Business Systems (3) I
Theories of organizations, communications, measurement, information, file organization and system design, and their applications in the business environment with emphasis on simulation, feedback, control, definition of total systems and evaluation of systems design.

705 Advanced Accounting Problems (3) I
Complex accounting problems with emphasis on assets, liabilities, owners' equity, partnerships, corporations, cost accounting, consolidations, funds flow, and other advanced problems. Pre: undergraduate majoring in accounting.

706 Accounting History and Theory (3) II

707 Accounting for Management Planning and Control (3) II
Conceptual approach to managerial accounting's role in the planning and control function of an organization. Topics emphasized include behavioral implications of managerial planning and control systems, budgeting and programming by objectives, and advanced quantitative tools available to the managerial accountant. Pre: Bus 601 or equivalent.

708 Seminar in Advanced Accounting (3) I or II
Special problems in professional accounting: systems, auditing, cost accounting, fund accounting, consolidations, governmental accounting, taxes, budgeting and control.

Finance (Fin)

300 Business Finance (3) I, II
Introduction to functions, techniques, and problems of business finance; investing in assets, financing strategies, planning and control. Pre: Acc 202.

305 Problems of Business Finance (3) I, II
Topics include working capital management, evaluation of capital expenditures, financial control and capital structure. Emphasis on widely used business practices along with critical evaluation. Case problems will be used. Pre: 300.

307 Quantitative Financial Decision Making (3) I or II
Topics include programming investment expenditures under capital constraints, credit selection via discriminant analysis, statistical models for planning optimum dividend-retention policy. Emphasis on both the conceptual and the operational. Pre: BAS 302 or consent of instructor and Fin 300.

311 Investments (3) I, II
Basic concepts of investment media and strategies. Topics include the investment environment, securities markets, alternative vehicles for investment, selection of securities, investment techniques and strategies, mutual funds, and personal portfolio management. Pre: 300.

315 Security Analysis and Portfolio Management (3) I or II
Security analysis and portfolio management from standpoint of the professional analyst and the institutional investor. Topics include recent advances in security valuation models, portfolio selection, and techniques for appraising portfolio performance. Pre: 300 and 311 or consent of instructor.

321 International Business Finance (3) I or II
Financial management of foreign and international business operations: the regulatory environment of international finance, financing international transactions, international capital markets, taxation. Emphasis on financial decision making in the firm. Pre: 300.

390 Seminar in Finance (3) I or II
Advanced topics both of a theoretical and an empirical nature in areas of finance, investments, and capital markets. Topics vary from semester to semester. Course designed to prepare the student for independent research. Pre: consent of instructor.

399 Directed Research (3)
Reading and research in a special area within the major field under direction of a single faculty member. Limited to senior majors with grade-point averages in accounting of 3.0 or better.

733 Problems in Business Finance (3) I or II
Application of financial principles and analytical techniques to current financial problems and developments from viewpoint of business firm.

734 Investment Analysis and Management (3) I or II
Techniques of securities, theory of investment and investment decisions, applications to portfolio planning for institutional and individual investors.

735 The Financial System (3) I or II
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
Analysis and treatment of pure risks; utilization of insurance programs to provide protection against financial losses caused by property losses; third party claims; illness and premature death.

311 Property and Casualty Insurance (3) I
Treatment of risk of financial loss of personal and business property and resulting loss of income occasioned by fire and allied perils. Emphasis upon forms of insurance used by individual businessmen and firms; including crime, transportation, liability, and workmen's compensation.
331 Life Insurance (3) II
Treatment of the risk of premature death through use of various life insurance policies. Analysis and study of policy forms, calculation of premiums, reserves, non-forfeiture values, underwriting, regulation of policy provisions, related coverages.

Law (Law)

300 Legal Environment of Business I (3) I, II
Introduction to legal environment in which business operates with particular attention to principles of law relating to contracts, agency, partnerships, corporations and government regulation.

311 Legal Environment of Business II (3) I
Critical study of legal environment of business administration including legal aspects of competition, monopolies. mergers, labor, taxation and regulatory agencies. Pre: 300.

313 Law for the Accountant (3) II
Intensive study of areas of law of particular importance to accountants with attention to principles of law relating to sales, commercial paper, property, bailments, trusts and wills. Special emphasis on CPA exam law section questions. Pre: 300.

786 Legal Environment of Business (3) I
The law aspects of business, including contract law principles and a penetrating review of laws related to the functions of regulatory agencies, marketing, competition, corporate trust and mergers, and labor.

Real Estate (RE)

300 Principles of Real Estate and Urban Land Economics (3) I, II
Principles including legal, physical, economic elements: valuation, market analysis, finance; and public and private externalities affecting the allocation and utilization of real estate resources.

310 Real Estate Law (3) I, II
Application of property law to real estate business. Pre: 300.

321 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) I, II
Economic, social, legal, physical factors influencing property values: emphasis on local residential market. Pre: 300.

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. (Cross-listed as TIM 341)

360 Real Estate Administration (3) II
Management of real property resources: including brokerage, legal and economic environment, finance, and investment. Case materials used extensively. Pre: 300, 310, 330, senior standing.

399 Directed Research (3)
Reading and research in a special area within the major field under direction of a single faculty member. Limited to senior majors with grade-point averages in real estate of 3.0 or better.

441 Urban Land Economics (3) I
Application of business and economic analysis to urban problems: including benefit-cost analysis, land use, transportation, metropolitan growth, public facilities, housing, urban renewal, poverty, race relations, and environment. Pre: any of the following: 300; BEc 341; Bus 621; Econ 151; AgEc 220.

773 Real Estate (3) I
Application of business principles to real property resources: finance and investment, legal environment, concepts of value.

774 Land Resource Development (3) II
Analysis of the techniques of planning, developing and marketing of land resources.

DEPARTMENT OF BUSINESS ECONOMICS AND QUANTITATIVE METHODS
Department Office: BusAd Bldg. C-306

Business Analysis and Statistics (BAS)

121 Mathematics for Decision Making I (3) I, II
Applications of mathematical operations to business and economics: laws of algebra, algebraic operations, laws of exponents, theory of sets, relations and functions, linear equations, inequalities, vectors, matrix operations, and linear programming. Students may not earn credit for this and Math 134.

122 Mathematics for Decision Making II (3) I, II
Applications of mathematical operations to business and economics: equations and their graphs, limits, continuity, derivatives and their use in minimax problems, partials, indefinite and definite integrals, techniques and applications, improper and numerical integrations, distribution functions and multiple integrals. Pre: 121. Students may not earn credit for this and Math 205 or BAS 125.

125 Accelerated Mathematics for Decision Making (3) I, II
Accelerated combination of 121 and 122. Content includes all topics of 122 plus vectors, matrix operations, and linear programming of 121. Pre: high school math grades of B or better, consent of instructor. Students may not earn credit for this and Math 205 or BAS 122.

301-302 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. Pre: 122 or 125. BEc 201 or equivalent.

305 Accelerated Business Statistics (3) I, II
Accelerated version of BAS 301-302 for qualified students. Includes descriptive statistics, probability, decision making, statistical inference, time series, regression and correlation. Applications to business problems. Pre: 122 or 125 with a grade of B or better, and BEc 201 or equivalent.

311 Sampling Methods (3) I, II
Design and use of random systematic, stratified and sequential samples for estimation of universe characteristics. Pre: 302 or 305.

313 Experimental Business Statistics (3) I, II
Uses of experimental data in judging alternative courses of action; planning an experiment, design for collection of data, analysis of variance and components, interpretation of results. Pre: 302 or 305.

321 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: 302, 305. or concurrently.

322 Decision Theory (3) I or II
Introduction to decision theory as applied to business problems. Topics include Bayesian decision rules, probabilistic models, and selected topics in mathematical programming. Pre: 321.
351 Introduction to Computers and Data Processing (3) I, II
Introduction to computer hardware and software systems, with emphasis on the impact of computers and their use in organizations. Actual experience in computer programming using an algorithmic language. (FORTRAN, BASIC, PL/I) Pre: 122 or 125. Students may not earn credit for this and ICS 301, 302 or GE 251.

352 Computer Systems and Applications in Organizations (3) I, II
Examination of current and potential computerized information systems and computer applications in organizations. Emphasizes cross functional systems including accounting, finance, marketing, personnel, production and management. Programming experience with a data oriented language. (COBOL) Pre: 351.

356 Methods of Scientific Research Applied to Business and Economic Problems (3) I or 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. Pre: 302, 305 or concurrently.

399 Directed Reading and Research (v) I, II
Limited to seniors on recommendation of department chairman.

451 Nonparametric Methods for Business Application (3) I or II
Techniques for estimation of parameters and testing hypotheses which require no assumption about the form of the distribution function, and their application to business problems; contingency tables, tests for proportions, nonparametric analysis of variance and trend analysis, and comparisons of measures of central tendency. Pre: 302 or 305 or concurrently.

455 Applied Regression Analysis (3) I or II
Application of statistical technique of multiple regression analysis to practical business problems. Related techniques of analysis of variance and discriminant analysis also discussed. Pre: 302 or 305.

713 Statistical Decision Theory (3) I or II
Modern statistical decision theory as applied to business decision making. Topics include probability theory, statistical decision problems, including Bayes decision rules. Pre: Bus 611.

714 Operations Research (3) I or II
Methods of operations research from executive or managerial viewpoint, with emphasis on application of mathematical and statistical techniques to management decision making; linear and nonlinear programming, game theory, queuing theory, replacement theory, etc. Pre: Bus 611.

715 Quantitative Methods of Business and Economic Forecasting (3) I or II
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. Pre: Bus 611.

783 Computer Data Processing (3) I or II
Hardware structure, I/O, files, memory; programming and machine languages, indirect addressing; files, multiprogramming, operating systems; software, examples of COBOL use, introduction to systems. Pre: 351 or equivalent work experience. No credit for experienced computer people or those with credit for 352 or equivalent.

784 Management Information Systems (3) I or II
Management information concepts; the technology of information systems, corporate data base, file organization, data management systems, information retrieval, data transmission, real time systems, planning and control, MIS evaluation, problems. Pre: 783 or equivalent.

785 Systems Analysis (3) I or II
Model building concepts, probability, methods of systems definitions, control systems hierarchies, simplification methods, search techniques, logic and probability in systems diagnosis, inventory models, Monte-Carlo processes, Binomial and Poisson processes, process generators, simulation of queuing systems, large scale simulation models, design of information systems, and problems of introducing change. Pre: 783 or equivalent, Bus 611.

786 Computer Simulation in Business and Economics (3)
Comprehensive treatment of the nature of computer simulation as research and analysis tool, present and potential uses of simulation models, technology of model construction, and science of utilizing computer simulation models for experimentation and analysis. Pre: Bus 611 and BAS 784 or 785 or equivalent.

Business Economics (BEc)

201 Economic Environment of Business (3) I, II
Introduction to the principles of economics, role and responsibility of business in a market economy and current social and economic issues in American economy as they affect business and industry. Acquaintance with the existence of issues and their complexity stressed. Students may not earn credit for this and Econ 150, 151, or 120.

301 Environmental Analysis for Multinational Business (3) I, II
To introduce student to the diverse social, cultural and economic patterns in the world community within which the business enterprise functions. Includes identification and critical analysis of major problems faced by domestic and foreign enterprises: national development and economic policies, the stage of industrialization, and the traditional or accepted method of business operation. Pre: Econ 150 or equivalent and Mgt 301.

341 Economic Analysis for Decision Making (3) I, II
General theory of choice. Demand analysis, production cost analysis; forms of market structure; demand creation and selling costs; factor income determination. Decision making under uncertainty will be introduced. Pre: 201, BAS 122 or equivalent. Students may not earn credit for this and Econ 301.

343 Business Conditions Analysis (3) I, II
Study of interrelationships of macroeconomic events and developments to microeconomic units. Special attention given to the role that GNP, national and regional growth rates, price and employment levels, and monetary and fiscal policies should play in strategic decision making of the firm. Pre: 201, BAS 122 or equivalent. Students may not earn credit for this and Econ 300.

345 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. BEc 341 students may not receive credit for both BEc 345 and Econ 340. Pre: 201, BAS 122 or equivalent. Students may not earn credit for this and Econ 340.

349 Managerial Economics (3) I, II
Application of economic and statistical concepts to business decisions, using case study methods. Subjects cover projection of demand and production, cost analysis, problems of forecasting, multifactors and multiproducts, technological change; capital budgeting; input-output analysis and programming techniques. Pre: 341.

361 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. Pre: 341 and 343 or concurrently.

362 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. Pre: 361.

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: regulation monopoly and competition; business affected with public interest; use of subsidies to promote public purposes; use of government financing to regulate business. Pre: 341.

399 Directed Reading and Research (v) I, II
Limited to seniors on recommendation of department chairman.
723 Operations Economics (3) I or II  
Application of economic and operations research techniques to business and economic problem solving with emphasis on case methods. Pre: Bus 611 and 621.

724 Current Economic Problems (3) I or II  
Study of modern issues and problems in business economics. Topics may vary from term to term. Pre: Bus 611 and 621.

725 Capital Markets and International Finance (3) I or II  
Supply and demand for capital in national and international markets. Nature of capital movements and role of capital in industrialization of regions and nations. Pre: Bus 611 and 621.

---

DEPARTMENT OF MANAGEMENT,  
MARKETING, INDUSTRIAL RELATIONS  
Department Office: Bus Ad Bldg. C-304

**Management (Mgt)**

209 (397) Organizational Communication (3) I, II  
Intensive practice in skills necessary for one to operate effectively in an organizational environment. Skills include writing, speaking, reading, and listening. Instruction based upon modern theory, with close attention to development of skills necessary to apply this theory in variety of business situations. 

301 Management and Organizational Behavior (3) I, II  
Analysis of the management process including some concepts of the behavioral sciences, personnel, and labor relations.

302 Operations Management I (3) I, II  
Management of the production and operations functions of an enterprise. Pre: BAS 302.

321 Facilities and Productivity Management (3) I, II  
Facilities design, the management of production systems, and productivity analysis with emphasis on quantitative applications. Pre: 302.

322 Operations Management Control (3) I, II  
Inventory and production planning and control, manufacturing processes, inspection and quality control, equipment selection and replacement analysis. Pre: 302.

341 Human Relations in the Organization (3) I, II  
Contributions made by sociology, psychology, and related behavioral sciences to the understanding and prediction of human behavior in organizations. Pre: 301.

343 The Business Manager's Social Responsibility (3)  
Study of the evolving interrelationships between business and society, changing role of the businessman in his environment, and ethical problems and social responsibilities of business managers.

344 Seminar in Management (3)  
In-depth analysis of selected current practices and trends in administration. Pre: consent of instructor.

345 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: all other core courses and graduating senior standing.

743 Selected Topics in Organization Theory and Practice (3)  
Evolution of organization theory and practice, with major emphasis on contemporary organizational problems, issues, and developments.

744 Comparative Management (3)  
Cross-cultural analysis of the values and environmental constraints which shape management patterns and policies. Emphasis will be upon Pacific Area Nations.

746 Production and Operations Management (3)  
Critical review of the development of production and operations management. Planning, decision making and 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 viewpoint. Economic and social responsibilities of marketing function emphasized. Pre: BEc 341.

321 Marketing Information Analysis (3) I, II  
Research aids to marketing management; nature of the research process: planning research including problems of sampling and measurement; experimental and non-experimental methods and techniques: analysis of data. Pre: BAS 302 or consent of instructor.

331 Advertising Management (3)  
Advertising decision making, advertising's role in marketing mix, primary demand stimulation, selective demand stimulation, building complete programs, advertising agency relationships.

341 Retailing Management (3)  
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.

361 Seminar in Marketing (3)  
Study and discussion of significant topics and problems in the field of marketing. Pre: consent of instructor and usually senior standing.

371 Consumer Behavior (3)  
Analysis of consumer behavior and motivation, principles of learning, personality, perception and group influence, with emphasis upon mass communications effects.

381 Multi-National Marketing (3)  
Methods and organization peculiar to international marketing, with emphasis on practical and technical aspects.

391 Marketing Strategies (3)  
Decision making by the marketing executive: an integration of all elements of the marketing program based on actual business situations. Pre: 315, 321 and one other marketing course above the 300 (Principles) level or consent of instructor.

753 International Marketing Management (3)  
Comparative and cosmopolitan approach to marketing management with emphasis on profit and growth opportunities and problems in world markets.

754 Marketing Communication and Promotional Strategy (3)  
The variables that affect or control communication process; theoretical considerations stressed in presenting hypotheses, techniques, and research studies. Within this framework, advertising, personal selling, and promotion viewed analytically.

755 Marketing Research Methodology (3)  
Research aids to marketing management: problem specification, hypothesis formulation, sample design, questionnaire construction, data collection, analysis, and policy recommendations.

**Personnel and Industrial Relations (PIR)**

200 Career Placement (1) I, II  
Preparation for effective career placement: personal inventory, selecting field of interest, job market, preparation of resumes, employment interviews, employment decisions, initial career experience, progress. Primarily for juniors and seniors.
351 Personnel Administration (3) I, II
Survey of the field covering such topics as recruitment, interviewing, selection, placement, training, transfers, promotion, appraisal, separation, health services, grievance handling, suggestion systems, communications, discipline, safety.

353 Personnel Seminar (3)
Selected topics with emphasis upon trends and recent issues, job evaluation, incentive systems, salary administration, executive compensation, profit sharing, benefit programs, retirement plans. Pre: 351.

351 Labor Problems and Trade Unionism (3) I, II
Problems and economics of labor: history, structure, government, activities of trade unions; social and labor legislation.

353 Collective Bargaining and Dispute Settlement (3)
Principles and concepts of collective bargaining; methods of settling disputes over rights and interests. Pre: 361.

351 Labor and Social Legislation (3)
Evolution, interpretation and application of labor and social welfare legislation with special emphasis on impact on labor-management relations.

361 Labor-Management Relations in the Public Service (3)
Review and analysis of the basic factors which distinguish private from public employment relations, and examination of the development of recent legislation and programs on the federal, state and municipal levels. Specific consideration given to current problems on mainland and Hawaii. Pre: 361 or permission of instructor.

363 Personnel Administration (3)
Analysis and critical evaluation of those issues, policies, and trends in personnel administration.

364 Advanced Personnel Administration (3)
Intensive analysis of a limited number of specific subjects in the field of personnel administration.

365 Labor Relations (3)
Review of labor history, labor legislation and labor problems including collective bargaining for public employees.

763 Personnel Administration (3)
Policies and practices of labor contract administration; fundamentals of grievance handling; fact-finding, mediation and arbitration as methods of reducing industrial conflict.

SCHOOL OF TRAVEL INDUSTRY MANAGEMENT
School Office: BusAd Bldg. 203

Created in 1967, the School of Travel Industry Management in the College of Business Administration of the University of Hawaii at Manoa is unique throughout the entire world. 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 that 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; (d) Group III courses are the special major requirements for TIM—a student may elect Emphasis A (Tourism Management) or Emphasis B (Hotel & Restaurant Management) or Emphasis C (Transportation Management) as his field of concentration; (e) upper-division courses in Group IV—Management 209 or English 309 plus 9 hours of courses which must be outside the College of Business Administration.

The School of Travel Industry Management curriculum offering an emphasis in Tourism Management, Hotel and Restaurant Management, or Transportation Management is constructed in such a manner that students selecting one option will have some exposure to the others. The nature of the worldwide travel industry is such that some knowledge of all areas is mandatory, although the TIM programs provide opportunities for special attention to each field as consistent with the student's professional interests.

EMPHASIS A—TOURISM MANAGEMENT
4 courses from area of emphasis: .................................. 12
TIM 320 Economic factors in Tourism ......................... 3
TIM 321 Social Factors in Tourism ............................. 3
TIM 322 Travel Information & Evaluation .................. 3
TIM 323 Travel Marketing .................................... 3
TIM 324 Area Studies Seminar ................................ 3

3 courses in TIM or TRANS outside of Emphasis A* ........ 9 123
TIM 300, 400 Internship .................................... 2

EMPHASIS B—HOTEL & RESTAURANT MANAGEMENT
4 courses from area of emphasis: ................................ 12
TIM 301 Hotel Management .................................... 3
TIM 304 Hotel Sales & Promotion ............................ 3
TIM 314 Institutional Purchasing ................................ 3
TIM 331 Hotel Design, Eng, Maint ............................ 3
TIM 334 Restaurant & Club Management .................... 3
TIM 351 Studies in Hotel Management Controls ............ 3

3 courses in TIM or TRANS outside of Emphasis B* .......... 9
TIM 300, 400 Internship .................................... 2

EMPHASIS C—TRANSPORTATION MANAGEMENT
4 courses as follows: ............................................. 12
TRANS 351 Transp—Physical Distribution Systems ....... 3
TRANS 352 Passenger Transportation Systems ............ 3
TRANS 453 Air Travel Management .......................... 3
ECON 480 Transportation & Public Utilities ................. 3

3 courses in TIM outside of Emphasis C* ................. 9
TIM 300, 400 Internship .................................... 2

*Select from TIM 341, TIM 361, and TIM 399 in addition to courses as listed above.
Transportation (Trans)

351 Transportation & Physical Distribution Systems (3) I, II
Economic analysis of organization and functioning of transportation industries in the physical distribution process. Transport systems planning and pricing from viewpoint of the user, the transportation firm, and government promotional and regulatory agencies. Integration of transportation, inventory, communications and warehousing systems. Pre: Bec 341 or equivalent.

352 Passenger Transportation Systems (3) I, II
Analysis of passenger transportation systems: components, functions, demand patterns, social and economic impacts. Planning passenger transportation systems: goals and objectives, choice among alternative technologies, evaluation of user preferences. Forecasting demand, price, and capacity relationships. Effects of government promotion and policies. Interaction with other sectors of the travel industry. Pre: Bec 341 or equivalent.

453 Air Travel Management (3) I, II
Designed to develop student understanding of breadth and challenge of strategic problems—current and future—which confront airline and airport executives. Program cultivates awareness of environment in which airline and airport industry must function, both today and in future. New techniques and management tools employed by effective airline and airport managers analyzed. Pre: 352.

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 Internship (0-0-1.1) (v)
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 (3) I, II
Role of management in the hotel industry, focusing special attention upon organizational structure, personnel administration, operational problems, international standards and practice; decision making and policy formulation playing the TIM/SIM game: a review of the historic and current development of the hotel industry. Pre: Mgt 301, senior standing or consent of instructor.

304 Hotel Sales and Promotion (3) I
Analysis of function, methods, and problems of hotel and restaurant sales and promotion with emphasis given to study of variable needs of different classifications of hotel properties: market segmentation, conventions, and selling of services vs. products. Pre: Mkt 300.

314 Institutional Purchasing (3) I, II
Introduction to, and analysis of, the procurement responsibilities in travel industry management. Special emphasis given to organized institutions supplying hotels, restaurants, airlines, etc., and the legislation which controls standards of industrial supplies and goods. Pre: FSA 181.

320 Economic Factors in Tourism (3) I
Analysis of elements essential to the development of a travel industry: examination of development in various parts of the world and in Hawaii, over time, that have led to present state of the industry; emphasis on economics of tourism as applied to Hawaii. Pre: Bec 201 or equivalent.

321 Social Factors in Tourism (3) I, II
Study of philosophy, components, objectives and implications of the vacation travel situation as a social entity provided for the tourist by the myriad of travel industry services. Includes motivations for pleasure travel as related to destination imagery and social class differences. Also discussed are the social bases and effects of travel counseling and media promotion and publicity. Pre: 101.

322 Travel Information and Evaluation (3) I, II
Study and application of available information and techniques for use in analysis and evaluation of tourist industry and its various major segments: the use of such analysis and evaluation in decision making. Pre: BAS 305 or equivalent or consent of instructor.

323 Travel Marketing (3) I, II
Analysis of services required by tourists or travelers; and, study of marketing and management techniques in such institutions as tour companies, travel agencies, government bureaus and industry associations which assemble and sell, promote or deliver these services. Pre: 101 & Mkt 300.

324 Area Studies Seminar (3) II
Purpose of the seminar is to expose the student to socio-cultural environments which may differ from his own. Each semester a specific cultural area will be focused upon wherein the prerequisites and plausible effects of tourism will be identified. Student will be expected to relate and adapt his specific tourism interests to the culture being discussed. Pre: junior standing or consent of instructor. Note: Course cannot be repeated for credit.

331 Hotel Design, Engineering, and Maintenance (3) I, II
Concepts of manager's role in architectural design, engineering and maintenance problems in hotels and resorts, including food service facilities. Pre: FSA 181.

334 Restaurant and Club Management (3) I, II
Problems in food and beverage facilities management, including planning, organizing, and operation of different types of food services in hotels, chain and independent restaurants, clubs, and institutions on a local, regional, national, or international basis. Pre: FSA 181 and Mgt 301.

341 Tourist Destination Development (3) I, II
Comprehensive examination of the interrelationships of social, economic and physical aspects of total tourist destination development within a country or region, with emphasis on physical development of tourist centers and resort areas. Pre: 101. (Cross-listed as RE 351)

351 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.

361 Law and Regulation for the Travel Industry (3) I, II
Origin, development, and principle of common, statutory, constitutional, international, and maritime law as they relate to the hotel, restaurant, travel and related industries and services. Pre: Law 300.

399 Directed Research (v) I, II
Reading and research into problems in the sphere of travel industry management. Limited to students with junior standing or above and at least a 2.5 grade-point ratio. Permission of instructor required based upon student's written proposal of content and objectives of his course program. Seminar course under direction of a single faculty member who will utilize other faculty resources as required by individual student program.

771 Lodging Industry Administration (3) II
Application of administrative science concepts and tools to problems of lodging and accommodations management and operation. Policy and decision making assisted by systems-analysis, data processing, and other internal controls techniques.

774 Land Resource Development (3) II
Analysis of the techniques of planning, developing and marketing of land resources. (Cross-listed as RE 774)

775 International Travel & Transportation (3) II
Analysis of factors fostering local, national and international development through travel industry expansion. Actions of international organizations, quasi-governmental and commercial institutions studies to identify economic and social forces melding into new marketing and implementary institutions.

776 Socio-Political Factors in Tourism (3) I
Seminar aimed at examining interrelationships of sociological, psychological, and anthropological factors as they affect the travel industry. Tourism examined both as cause and effect of identifiable societal processes.
Graduate Courses in Business Administration

The CBA has two programs leading to the MBA degree—one a thesis and one a nonthesis program. Students in either program without an undergraduate business degree or equivalent must take the Group I courses. The MBA Plan A (thesis) requires the students to take six of the seven Group II courses, 6 credits of thesis and 9 credits of electives from Group III. The MBA Plan B (nonthesis) requires all courses in Groups II and IV and three electives from Group III. An MBA Program brochure which describes the program in detail may be obtained, at no charge, from: Assistant Dean, MBA Programs, University of Hawaii, 2500 Campus Road, Honolulu, Hawaii 96822.

GROUP I—Foundation Courses for students lacking full undergraduate preparation in business. 15 credit hours*

Bus 501 Accounting (3)
Basic concepts and procedures with emphasis upon cost accumulation and preparation, analysis and uses of financial statements.

Bus 502 Economic Analysis (3)
Economic analysis and background of business firms: economic decisions and economic environment of business.

Bus 503 Introduction to Quantitative Analysis (3)
An elementary survey of basic tools for quantitative analysis for business.

Bus 504 The Management Process (3)
Concepts involved in the management of an organization.

Bus 505 Marketing and Operations Management (3)
Producing and marketing in today's business environment.

M.B.A. COURSES

GROUP II—Advanced Disciplines and Functions (Graduate Core)

601 Managerial Accounting (3)*

Bus 611 Statistical Methods of Business Analysis (3)
Mathematical methods and techniques of statistical inference used in business. Pre: 503 or equivalent.

Bus 621 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. Pre: Bus 501, 502, 503, and 611 or equivalent.

Bus 631 Finance (3)
Analysis of fundamental financial problems. Financial planning and management, capital budgeting, securities and other financial instruments, financial markets, principal financial intermediaries.

Bus 641 Management: A Systems Analysis (3)
Introduction to the systems concept of management; provides a framework for conceptualizing the interrelationships among all factors relevant to the management process as an integrated whole. IS 600 will be accepted as a substitute. Pre: 504 and 505 or equivalent.

Bus 642 Behavioral Science for Business (3)
Analysis of social and cultural forces that change the environmental context for management decision making. Business problems derived from changing patterns of life will be examined in terms of social sciences, such as: anthropology, psychology, and sociology. Pre: Bus 504 or equivalent.

Bus 651 Marketing (3)
Analysis of the fundamental problems in marketing management and modern methods of attacking them. Emphasis is upon strategy, decision making, and the relationship of the firm to its customers. Pre: all 500 level courses or equivalent, Bus 611, 621.

IS 600 Theory of Administration (3)
Course offered in Interdisciplinary Studies, as an alternative for Bus 641. Designed to meet the needs of students with backgrounds or interest in public administration and/or education. A 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.

GROUP III—See individual departmental listings.

Ent 610 Nature of Entrepreneurship (3)
Definition of "entrepreneurship" in its various forms: economic role of small business entrepreneurs in economic development; managerial and financial problems and other barriers to starting new small businesses; relevant national policies and programs; problems of identifying, motivating, and training entrepreneurs; individual student projects.

Ent 630 Economics of Entrepreneurship (3)
Critical appraisal of the role of entrepreneurship in process of industrialization. Examination of major theories of entrepreneurial supply and determinants of entrepreneurial behavior. Interdisciplinary approach to help businessmen, engineers, and government administrators to understand modernization problems of less-industrialized nations. Application of benefit-cost analysis to evaluate effectiveness of development programs. Emphasis on private sectors of developing countries in the Pacific Basin.

Ent 640 Public Policy & Management Problems of New Enterprises (3)
Comparison of various nations' policies on financial and technical assistance, import preferences and export subsidies, and training programs to further development of new small enterprises. Critical evaluation of actual programs for effectuating these policies in these same countries; determination of success and failure of particular programs (or program components) in particular situations. Opportunities and problems involved in building (than economic growth) objectives into entrepreneur development programs. Problems confronting public administrators and private entrepreneurs in developing healthy small enterprises in each different nation. Pre: consent of instructor.

GROUP IV—Integrative

Bus 796 Business Policy (3)
Analysis of comprehensive business problems to provide an integration of learning through the resolution of policy issues and through practice in administrative decision making.

Bus 799 Business Research (3)

Bus 800 Thesis (v) I, II
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 pre-service preparation of teachers. Upon completion of two years of study as pre-education majors in the College of Arts and Sciences, qualified candidates are admitted as early childhood education, elementary education, secondary education, or special education majors to pursue a minimum of two more years of planned coursework and student teaching to meet the requirements of the B.Ed. and a minimum of one more year to meet the requirements of the Professional Diploma. The bachelor of education (B.Ed.) is conferred at the end of four years of work and the state department of education (DOE) grants the Basic Teacher’s Certificate (Class II). Upon the completion of the Professional Diploma or Master of Education degree programs, the DOE grants the Professional Teacher’s Certificate (Class III). This post-baccalaureate work may be pursued in full-time study or part-time in conjunction with teaching.

Undergraduate work leading to a bachelor of science (B.S.) degree in recreation is also offered in the College, and substantive service courses are provided in the areas of health, physical education, and industrial arts.

The College currently offers master of education (M.Ed.) 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.
Preservice Teacher Education Program

The current program for all preservice teacher candidates approved by the College and the University Council on Teacher Education includes a strong liberal arts core, professional education courses, an academic major and student teaching. Requirements are listed in the sections following.

GENERAL EDUCATION

The general education core requirements of the College of Arts and Sciences constitute most of the non-major courses in the liberal arts and sciences for prospective early childhood, elementary, secondary and special education teachers. However, requirements for certain teaching majors such as science and mathematics commence in the freshman year, so pre-education freshmen and sophomores should check with the College’s division of student services to obtain listings of specific curricula in all teaching fields.

PROGRAM OF STUDIES FOR EARLY CHILDHOOD EDUCATION MAJORS

Early childhood education majors have two program options. Program option “A” is designed for candidates intending to teach children, ages 5-8. Program option “B” is designed for candidates intending to teach children, ages 3-4. These options are described in the following sections.

Early Childhood Education Option “A” Program

1. B.Ed. requirements: minimum of 126 credits
   a. General Education Core: follow requirements for pre-education majors in the College of Arts and Sciences: 55 credits in liberal arts and science courses.
   b. Professional Education Core: 18 credits taken in three blocks, including work in social and psychological foundations, foundations in curriculum and instruction, and special methods.
   c. Student Teaching: 10 credits, full-time for one semester, and a 2-credit seminar for student teachers.
   d. Human Development Sequence: 18 credits in courses dealing with human development and family relations.
   e. Academic or Distributive Major: 18-20 credits taken either in one field or distributed among several fields.*
   f. Electives: 4-6 credits.

2. Professional Diploma requirements: minimum of 156 credits, including work completed for the B.Ed. and the following:
   a. Professional Education Core: 6 additional credits in education courses numbered at the 600 level or above.
   b. Human Development Sequence: 9 additional credits in courses in human development.
   c. Academic or Distributive Major: 6-7 additional credits completing balance of courses required for the academic or distributive major.*
   d. Electives: 7-8 credits.

Early Childhood Education Option “B” Program

1. B.Ed. requirements: minimum of 126 credits
   a. General Education Core, Professional Education Core, and Student Teaching requirements are identical to those in Option “A”.
   b. Human Development Major: 27 credits in courses in human development and family relationships.
   c. Distributive Major: 12 credits in courses distributed among several fields.
   d. Electives: 2 credits.

2. Professional Diploma requirements: a minimum of 156 credits, including work for the B.Ed. and the following:
   a. Professional Education Core: 6 additional credits in education courses numbered at the 600 level or above.
   b. Human Development Major: 12 additional credits to complete requirements of the major in human development.
   c. Distributive Major: 12 additional credits to complete requirements of the distributive major begun at the B.Ed. level.

*Specific requirements are available in the College of Education, Division of Student Services.
COLLEGE OF EDUCATION

PROGRAM OF STUDIES FOR
ELEMENTARY EDUCATION MAJORS

Elementary education majors have two options, referred to as elementary generalist and elementary specialist, in preparing for teaching in the elementary school. These options are described in the following sections.

Elementary Generalist Program

1. B.Ed. requirements: minimum of 126 credits
   a. General Education Core: follow requirements for pre­
education majors in the College of Arts and Sciences: 55 credits in liberal arts and science courses.
   b. Professional Education Core: 9 credits in social, psychological, and curriculum foundations; 6 credits in language arts and reading methods courses; and 12 credits in methods courses in the principal subject areas taught in the elementary school.
   c. Student Teaching: 10 credits, full time for one semester; 2 credits, seminar for student teachers.
   d. Academic Major: a minimum of \( \frac{3}{4} \) of the credits for the major as specified.*
   e. Distributive Major: a minimum of 15 of the credits in the courses specifically related to the elementary school curriculum.*

2. Professional Diploma requirements: minimum of 156 credits, including work completed for the B.Ed. and the following:
   a. Professional Education: 6 additional credits in education courses numbered at the 600 level or above.
   b. Academic Major: the balance of credits required for the major as specified.*
   c. Distributive Major: 15 credits, the balance of credits required in the distributive major as specified.*
   d. Electives: variable number.

Elementary Specialist Program

1. B.Ed. requirements: a minimum of 126 credits
   a. General Education Core: follow requirements for pre­
education majors in the College of Arts and Sciences: 55 credits in liberal arts courses.
   b. Professional Education Core: 9 credits in social, psychological, and curriculum foundations; 6 credits in language arts and reading methods courses; and a methods course appropriate to the major field.
   c. Academic Major: a minimum of 39 credits in one discipline and other courses as specified.*
   d. Student Teaching: 10 credits, full time for one semester; 2 credits, seminar for student teachers.

2. Professional Diploma requirements: a minimum of 156 credits including work completed for the B.Ed. and the following:
   a. Professional Education: 6 additional credits in education courses numbered at the 600 level or above.
   b. Academic Major: the balance of credits required for the major and other courses as specified.*
   c. Distributive Major: credits in the teaching field major and other courses as specified.*
   d. Electives: variable number.

PROGRAM OF STUDIES FOR
SPECIAL EDUCATION MAJORS

Special Education majors are prepared to be teachers of the mentally retarded trainables, the mentally retarded educables, or the children with learning and behavior disorders. Requirements are listed below.

1. B.Ed. requirements: minimum of 129 credits
   a. General Education Core: follow requirements for pre­
education majors in the College of Arts and Sciences: 55 credits in liberal arts and science courses.
   b. Professional Education Core: 6 credits in social and psychological foundations; 16 credits in special education courses.
   c. Student Teaching: 10 credits, full time for one semester; 2 credits, seminar for student teachers.
   d. Academic Major: a minimum of 18 credits in courses for an academic major.*
   e. Distributive Major: a minimum of 15 credits in courses dealing with the curriculum of the public schools as specified.*
   f. Electives: variable number.

2. Professional Diploma requirements: minimum of 159 credits, including work completed for the B.Ed. and the following:
   a. Professional Education: 6 additional credits in education courses numbered at the 600 level or above.
   b. Academic Major: the balance of credits required for the major as specified.*
   c. Distributive Major: 15 credits, the balance of credits required in the distributive major as specified.*
   d. Electives: variable number.

PROGRAM OF STUDIES FOR
SECONDARY EDUCATION MAJORS

1. B.Ed. requirements: a minimum of 126 credits
   a. General Education Core: follow requirements for pre­
education majors in the College of Arts and Sciences: 55 credits in liberal arts courses.
   b. Professional Education Core: 9 credits in social, psychological, and curriculum foundations; 3-7 credits in appropriate methods course to the major.
   c. Teaching Field Major: credits in the teaching field major and other courses as specified.*
   d. Student Teaching: 10 credits, full time for one semester; 2 credits, seminar for student teachers.

2. Professional Diploma requirements: a minimum of 156 credits, including work for the B.Ed. and the following:
   a. Professional Education: 6 additional credits in education courses numbered at the 600 level or above.

*Specific requirements are available in the College of Education, Division of Student Services.
b. Teaching Field Major: additional credits in the major and/or other courses as specified.*

Teaching Field Majors—Secondary Education
(For B.Ed. and Professional Diploma)
Total number of credits are approximations.*

Agriculture: 60 credits in agriculture and agricultural technology courses.

Arts: 60 credits in art, including: 18 credits in art history or related studies (aesthetics, music, etc.) including Art 270 and 280; 42 credits in studio courses, including Art 101, Studios A, B, C, D.

Biology: 32 credits in biology: general physics; organic chemistry; introductory geoscience; history/philosophy of science; introductory calculus.

Business Education: 36 credits in business, including a minimum of 21 credits in economics, and skills courses in typewriting, shorthand, business and secretarial machines and accounting.

Chemistry: 32 credits in chemistry; general and modern physics; introductory biology and geoscience; history/philosophy of science; integral calculus.

Distributive Education: 36 credits in business, including a minimum of 21 credits in economics, marketing and management.

English: 60 credits in English and related subjects.

Foreign Languages: 60 credits in a foreign language (Chinese, Japanese, French, German, or Spanish) and related subjects.

Geosciences: 32 credits in geosciences; general and modern physics; inorganic chemistry; introductory biology; history/philosophy of science; integral calculus.

Health and Physical Education: 60 credits in health and physical education.

Home Economics Education: a minimum of 56 credits (45 B.Ed., 11 Professional Diploma) in home economics to include course work in family economics, consumer education and home management (9 credits); housing, home furnishings and equipment (6 credits); food and nutrition (9 credits); clothing and textiles (10 credits); family life and child development (6 credits); and electives in the above areas (16 credits).

Industrial Arts Education: 60 credits in industrial and technological education.

Mathematics: Junior High—30 credits in mathematics; Senior High—42 credits in mathematics.

Music, Instrumental: 74 credits in instrumental music and related subjects.

Music, Vocal: 70 credits in music theory and voice and related subjects.

Physics: 32 credits in physics; inorganic, qualitative and physical chemistry; introductory biology and geoscience; history/philosophy of science; differential equations.

Social Studies: 60 credits in social sciences (anthropology, economics, geography, history, political science, psychology, sociology, or inter-disciplinary courses in the social sciences) to include a major from one of the disciplines, the remainder to be in related social sciences.

Speech: 60 credits in speech and related subjects.

Program for Vocational Agriculture Education Majors

Prospective vocational agriculture education majors have the options of enrolling in the College of Arts and Sciences for the freshman and sophomore years, followed by transfer to the College of Education for the junior, senior, and fifth years, or in the College of Tropical Agriculture for the bachelor's degree, followed by transfer to the College of Education for the fifth year. To be admitted for work in the College of Education, vocational education majors must meet the general entrance requirements of the College.

Program for Business Education and Distributive Education Majors

Prospective business education and distributive education majors may enroll in the University of Hawaii community college system's transfer programs for their pre-education (liberal arts and science core) and selected office and business education skill courses such as typewriting, shorthand, business machines, as partial fulfillment for the Bachelor of Education requirements. Candidates transfer to the College of Education at the end of the sophomore year to complete professional education and teaching field major work during the junior, senior, and fifth years. Students planning to transfer to the College of Education should consult with the pre-education adviser and/or the business education adviser in the division of student services.

Program for Vocational Home Economics Education Majors

Prospective vocational home economics education majors generally enroll in the College of Tropical Agriculture’s division of human resources development, department of home economics, for their general education during the freshman and sophomore years. They transfer to the College of Education at the end of the sophomore year to complete their program of studies for the Bachelor of Education degree and Professional Diploma. Their major teaching field work is completed through courses taken in the division of human resources development in the departments of human development, fashion design, textiles and merchandising, food and nutritional sciences, and home economics. See page 199 for course requirements.

Program for Industrial Arts, Technical and Industrial Vocational Education Majors

To prepare competent teachers for expanding industrial arts education and technical-industrial vocational education positions in the junior-senior high schools and community colleges, a coordinated program of preparation has been established between the College of Education and the Honolulu Community College. Prospective teachers enroll in the Honolulu Community College for their first and second
years of the program, taking courses in technology and general education. Candidates transfer to the College of Education at the end of their sophomore year to complete professional education and teaching field major work during the junior, senior, and fifth years.

PROGRAM FOR COMMUNITY COLLEGE TEACHING

The College of Education in cooperation with the University of Hawaii community college system is currently operating a program for the preparation of community college faculty. Fellowship support is available for graduate students in this area. Those who are interested should confer with the chairman of the department of curriculum and instruction.

Preservice Recreation Leadership Program

PROGRAM FOR RECREATION LEADERSHIP MAJORS

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 persons should contact the chairman of the department.

Admission Policies

The College of Education considers students for admission to the Bachelor of Education or Professional Diploma programs on the following basis:

1. Students must have completed application procedures to the College of Education. These are:
   a. All undergraduate students from the Manoa campus must submit a completed application form along with official transcripts of all previous college work to: Division of Student Services, College of Education, University of Hawaii. Professional Diploma and undergraduate applicants from other campuses must submit their completed application materials to: Office of Admissions and Records, University of Hawaii.
   b. All applicants must arrange for a personal interview with staff members of the division of student services after admission materials have been filed. Outer island or mainland students may file a letter of recommendation in lieu of the interview. Applicants who wish to enroll in the physical education program must make an appointment for interview with the chairman of the department of health and physical education and present evidence of experience in physical activities.
   c. In addition, applicants who wish to enroll in the music education program are required to ensure that official transcripts of all university studies are on file in the music department office on the date of application: make an appointment for interview with the music education faculty at the time of application; and present evidence of musical and vocational aptitude in support of application.

These procedures should be completed by the following deadlines:

   May 1 — for fall semester
   November 1 — for spring semester

2. Students applying for admission to the Bachelor of Education program must have achieved upper-division status by completing a minimum of 55 semester hours in any accredited college. Students applying for the Professional Diploma program must have a bachelor’s degree from an accredited college/university.

3. Students must meet the following admission criteria:
   a. Applicants must have at least a grade-point average of 2.0 on a 4.0 scale in order to be considered for admission. However, only exceptional cases will be admitted with a cumulative grade-point average of less than 2.5.
   b. Field service experience is required for admission to the College. Applicants will be assessed on both the quality and quantity of their experience with children in the age group they wish to teach. Applicants for special education must have leadership experience with “exceptional” children (experience with groups of children preferred).
   c. Applicants will be assessed on their knowledge and understanding of the teaching profession. It will be to the student’s advantage to keep up with what is current in the teaching profession (e.g., collective bargaining for teachers).
   d. Applicants will be assessed on their ability to communicate effectively. Ratings will be based on such speech characteristics as clarity and fluency of expression, continuity of thought, etc.
   e. Applicants will be assessed on their psychological fitness to pursue the teaching profession. If necessary, applicants may be asked to furnish the division of student services with a written report from a qualified professional regarding their suitability to pursue teaching as a career.
   f. Applicants must show no evidence of restricting physical problems. (Communicable diseases such as tuberculosis are of particular concern.)

The College of Education considers students for admission to the Bachelor of Science in Recreation Leadership program on the following basis:

1. Students must have completed application procedures to the College of Education in the same manner as required of students applying for admission to the Bachelor of Education degree in those steps prescribed under 1-a, 1-b, 2 and 3.

2. In addition, students must arrange for a personal interview with the chairman of the department of health and physical education; ensure that official transcripts of all university studies are on file in the department of health and physical education office prior to the interview; and present evidence of experience and personal commitment to the field of recreation.

3. In order that students who anticipate admission be considered for pre-registration in the department of health and
physical education for the ensuing semester, students must complete the admission procedure by the following deadlines:
- May 1 — for fall semester
- November 1 — for spring semester

Graduation Requirements and Procedures

The B.Ed. Degree. The College awards a Bachelor of Education degree. To be eligible for the B.Ed. degree, the student must:
1. Fulfill all University requirements;
2. complete the College of Education undergraduate curriculum in early childhood, elementary, secondary or special education;
3. acquire a minimum aggregate of no less than 126 credits;
4. have a cumulative GPA not less than that required for admission to the College;
5. file for graduation and pay $5 fee at least one semester prior to intended graduation date.

The Professional Diploma. In recognition of successful completion of a post-baccalaureate teacher education program for teaching at the elementary or secondary school level, the College awards the Professional Diploma. To be eligible for the Professional Diploma, the student must:
1. Meet all admission requirements of the College of Education;
2. have been awarded a bachelor's degree from an accredited institution;
3. complete all course requirements for the Professional Diploma;
4. have successfully completed student teaching;
5. acquire a minimum of no less than 156 semester hours;
6. have a final cumulative GPA not less than that required for admission to the College;
7. have filed for graduation and paid a $2.50 fee not later than the semester prior to intended graduation date.

The B.S. in Recreation Degree. The College of Education awards a Bachelor of Science degree upon completion of four years of work at the University. To be eligible for the B.S. degree, the student must:
1. Fulfill all University requirements;
2. complete the College of Education undergraduate curriculum in recreation leadership;
3. acquire a minimum aggregate of 126 semester hours of credit;
4. have a cumulative GPA not less than that required for admission to the College of Education;
5. file for graduation and pay $5 fee at least one semester prior to intended graduation date.

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. Student teaching is a full-time experience under agreement with the State Department of Education, and students should not plan to register for other courses during this semester. 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 the required foundations and methods courses;
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 request student teaching of the division of field services no later than October 15 or March 15 for teaching during the subsequent semester, (there is no student teaching during the summer session);
5. to be cleared for student teaching by the division of field services;
6. to be accepted for student teaching by the division of field services upon the recommendation of the instructor(s) of the appropriate methods course(s).

Certification Programs

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 two years of teaching experience, hold the professional certificate and successfully pass the annual examinations administered by the DOE. Interested candidates should confer with the chairman of the department of educational administration. Successful completion of the administrative intern program is a requirement for the Professional School Administrator's Certificate.

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 educational 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.

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.

Media Specialist Certificate Program. The College offers a 30-semester hour graduate program which qualifies candidates to meet the DOE's Professional Media Specialist Certificate. For further information, contact the chairman of the department of educational communications.
E D U C A T I O N C O U R S E S
See p. 3 for discussion of course descriptions.

Curriculum and Instruction (Ed CI)

Department Office: Wist Hall Annex 2-226

Professors: R. Aim, Austin, Braun, Carr, Hayes, Ihara, In, Inn, Jenkins, Lang, Martin, Morris, Nelson, Noda, Pickeins, Poyzer, Reddin.

Associate Professors: Brown, Campbell, Fujita, Fultz, McGinty, Pang, Picard, E. Sat0, Uehara, Whitman, Zane.

Assistant Professors: Becker, Chattopadhyay, Feeney, Thompson.

Acting Assistant Professor: Whitesell.

Instructors: Jackstadt, Kiehm, Young.

Courses numbered from 312 through 399 have as prerequisite enrollment in the College of Education as a classified student.


319 Children's Literature Braun, Brown, Chattopadhyay, Fujita, Fultz, Inn, Jenkins, Kiehm, Lagen, Martin, Reddin Acquaintance with wide range of children's books: criteria for judging literature on basis of needs and interests: investigation of teaching strategies, field practice. Pre: 312 or concurrent registration.

320 Language Arts, Elementary Braun, Chattopadhyay, Fujita, Fultz, Inn, Jenkins, Kiehm, Reddin, Uehara Modern approach to teaching of language arts—oral, written expression. Pre: 312 or concurrent registration.

321 Reading, Elementary Braun, Brown, Uehara, Young Survey of reading process; development of reading readiness; word recognition, comprehension, reading rate, vocabulary, reading interests; reading in content areas. Selection of use of reading materials; evaluation and appraisal of reading progress. Pre: 312 or concurrent registration.

322 Social Studies, Elementary Feeney, Inn, Jackstadt, Lang 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 (3) I, II, SS Carr, Campbell Science education in elementary school; methods and materials: laboratory activities selected from new science curricula. Pre: 312 or current registration.

324 Mathematics, Elementary (3) I, II, SS Pang, 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 (3) I, II, SS Becker, Pickeins Understanding scope and importance of art in elementary school curriculum, creative use of art media through laboratory experiences. Pre: 312 or concurrent registration.

329 Creative Expression in Elementary Education (3) I, II, SS 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 Staff 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 (3) I, II R. Aim 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, SS Staff 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, SS Campbell Objectives 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) Sato 1. European Languages I. II 2. Asian Languages I. II Techniques and materials: aims; motivation, tests; infusion of cultures; use of instructional aids. Pre: 312 or concurrent registration.

336 Art, Secondary (3) I, II, SS Staff 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-Communication, Secondary (3) I Staff Objectives, materials, procedures for teaching speech-communication: speech modification and development; selected speech activities. 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, II J. Aim Literature for secondary school level; helping students appreciate significance and meaning of literature; materials suitable for varying levels of ability and interests. Pre: 312 or concurrent registration.

346 Methods of Instruction, Industrial Education (3) I, II Poyzer 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) I, II Poyzer Organization of instruction: handling supplies; maintaining equipment and tools; purchasing materials; keeping records; making inventories. Pre: 312 or concurrent registration.
348 Methods of Teaching Shorthand and Bookkeeping (2) I
Morris
Theory and methods of teaching shorthand and bookkeeping. Pre: 312 or concurrent registration; Acc 201-202; shorthand; office machines.

349 Methods of Teaching Typewriting and General Business (2) II
Morris
Theory and methods of teaching typewriting and general business in the business education curriculum. Pre: 312 or concurrent registration; typewriting.

350 Basic Industrial Education, Elementary Schools (3) I, II
Basic industrial education taught in a laboratory setting using tools, materials, processes and methods adaptable to elementary education with emphasis on industrial career awareness.

371 Home Economics Education (3) I, II
McGinty
Curriculum design. Current educational philosophies and practices in home economics education. Teaching materials and techniques.

390 Student Teaching (10) I, II
Staff
Full-time supervised experience in public schools. Sections: (1) elementary education, (2) secondary education. Course taken on mandatory credit-no credit basis. Pre: requirements for registration listed under "Student Teaching."

391 Seminar for Student Teachers (2) I, II
Staff
Seminar relating current educational theories with experiences in student teaching. To be taken concurrently with 390. Course taken on mandatory credit-no credit basis. Pre: requirements for registration listed under "Student Teaching."

397-398 Early Childhood Curriculum (5-5) Yr
Feeney
Introduction to theories of curriculum and programs for young children (preschool through primary). Applications to development and learning through guided observations and participation in school situations. Part I: emphasis on communication skills. Part II: emphasis on mathematics and the sciences. Related arts integrated with content of both semesters. Pre: HD 231-232; Ed EF 310, Ed EP 311 recommended or concurrent registration.

399 Directed Reading (v) 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.

433 Seminar in Interdisciplinary Science Curriculum (3) II
Staff
Fundamental science concepts from the viewpoints of physical, biological and earth sciences; integrative processes and conceptual schemes; methods, tools and models of different disciplines. Pre: introductory courses in the various sciences. (Identical to IS 433)

437 Curriculum Development, Industrial Education (2) II
Poyzer
Development of contemporary curricula and programs spanning the industrial education continuum. Pre: I.E. major or instructor in I.E.

438 Foundations of Vocational Education (2) I, II
Zane
Historical and philosophical foundations of vocational-technical education, overview of federal-state legislation and contemporary practices.

439 Office Education (3) I
Staff
Theory, philosophy, and development of methods and materials for teaching office education in high school and community college. Pre: teaching experience or consent of instructor.

460 Distributive Education (3) I
Morris
Principles, materials and methods of teaching distributive education subjects.

471 Special Problems in Home Economics Education (2) I, II
Staff
Individual and group problems selected according to interests and needs of fourth-year and fifth-year students in home economics education. Development of teaching materials.

488 Creative Process in Development and Learning (3) I, II, SS
Hayes
Study of creative process and its values in education. Designed to modify behavior of classroom teacher in identifying and encouraging creative ability of children. Many teaching models examined and assessed as to their usefulness in developing creative teaching. Laboratory experiences will include experimentation with several models. Pre: teaching experience or consent of instructor.

497 Cooperative Vocational Experiences (v) I, II
Staff
Planned work-experience program for special areas of vocational-technical education. Learning experience includes an acceptable type of wage earning employment. Minimum of six 40-hour weeks or 240 work hours required for each 3 semester hours of credit. May be repeated. Pre: consent of instructor. (Identical to IE 497)

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.

540B Practicum in Curriculum Development: Art Education (3) I, II
Becker, Pickens
Designed for teachers-in-service to upgrade subject matter and develop new teaching methods and materials for instruction in art education. Development of curriculum materials and methods by participating teachers. Pre: 326 or 336; teaching experience. May be repeated for credit.

540C Practicum in Curriculum Development: Business Education (3) I, II
Morris

540D Practicum in Curriculum Development: English Language Arts (3) I, II
Alm
Designed for teachers-in-service to upgrade subject matter and develop new teaching methods and materials for instruction in English language arts. Development of curriculum materials and methods by participating teachers. Pre: 320 or 330; teaching experience. May be repeated for credit.

540E Practicum in Curriculum Development: Foreign Language (3) I, II
Sato

540F Practicum in Curriculum Development: Health & Physical Education (3), I, II
Staff

540G Practicum in Curriculum Development: Home Economics (3) I, II
McGinty

540H Practicum in Curriculum Development: Industrial Education (3) I, II
Poyzer

540I Practicum in Curriculum Development: Mathematics (3) I, II
Picard, Whitman
Designed for teachers-in-service to upgrade subject matter and develop new teaching methods and materials for instruction in mathematics education. Development of curriculum materials and methods by participating teachers. Pre: 324 or 334; teaching experience. May be repeated for credit.
540J Practicum in Curriculum Development:
Science (3) I, II Campbell, Carr
Designed for teachers-in-service to upgrade subject matter and develop new teaching methods and materials for instruction in science education. Development of curriculum materials and methods by participating teachers. Pre: 323 or 333; teaching experience. May be repeated for credit.

540K Practicum in Curriculum Development:
Social Studies (3) I, II Brown, Inn, Jackstadt
Designed for teachers-in-service to upgrade subject matter and develop new teaching methods and materials for instruction in social studies education. Development of curriculum materials and methods by participating teachers. Pre: 322 or 332; teaching experience. May be repeated for credit.

540L Practicum in Curriculum Development:
Speech (3) I, II Staff

540M Practicum in Curriculum Development:
Reading (3) I, II Staff
Designed for teachers-in-service to upgrade subject matter and develop new teaching methods and materials for instruction in reading. Development of curriculum materials and methods by participating teachers. Pre: 321 or 331; teaching experience. May be repeated for credit.

540N Practicum in Curriculum Development: General Curriculum and Teaching Problems (3) I, II, SS Staff
Designed for teachers-in-service to upgrade subject matter and develop new teaching methods and materials for instruction in general curriculum and teaching problems. Development of curriculum materials and methods by participating teachers. Pre: teaching experience. May be repeated for credit with different content.

540O Practicum in Curriculum Development:
Asian Studies (3) I, II, SS E. Sato
Designed for teachers-in-service to upgrade subject matter and develop new teaching methods and materials for instruction in Asian studies. Development of curriculum materials and methods by participating teachers. Pre: teaching experience. May be repeated for credit with different content.

540P Practicum in Curriculum Development:
Adult Education (3) I, II Staff
Designed for teachers-in-service to upgrade subject matter and develop new teaching methods and materials for instruction in adult education. Development of curriculum materials and methods by participating teachers. Pre: teaching experience. May be repeated for credit.

590 Internship (10) I, II Zane
Practicum under faculty supervision. The application of previously studied theory in practice situations. Pre: consent of instructor.

591 Seminar for Interns (2) I, II Zane
Problems arising from experience of internship. To be taken concurrently with 590. Pre: consent of instructor.

598 Research Utilizing Problem Solving (2) I, II, SS Staff
Knowledge and practice of skills for systematic definition, analysis, and solution of classroom problems. Pre: teaching experience. (Identical to Ed EP 598)

619 Children's Literature in the Elementary Curriculum (3) I, II Austin, Jenkins, Reddin
Examination in depth of traditional and modern literature for children, with emphasis upon genre, historical development, research, curriculum development. Pre: 319 and teaching experience.

620 Teaching Reading in the Elementary School (3) I, II Braun, Uehara, Young
Developmental and psychological aspects of the reading process, studying current trends, research, techniques of evaluation. Pre: 321 and teaching experience.

621 Modern Language Arts Program, Elementary (3) I, II Jenkins, Reddin
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, Carr, Inn, Jenkins, Lang
Theoretical foundations of curriculum development; curriculum research; critical examination of current practices in curriculum development for elementary school. Pre: 312 or equivalent and teaching experience.

623 Elementary Science Curriculum (3) I, II Carr

624 Elementary Mathematics Curriculum (3) I, II Picard
Analysis of research relating to teaching and learning arithmetic, apply research findings to classroom procedures. Appraisal of recent curricular trends and critical examination of assumptions underlying proposed changes. Pre: 324 and teaching experience.

625 Elementary Social Studies Curriculum (3) I, II Inn, Lang
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) I, II Becker, 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 and teaching experience.

629 Curriculum Development in Creative Expression (3) I Hayes
Leadership training for teachers of creative dramatics, rhythm movement, related arts. Pre: 329 or consent of instructor and teaching experience.

635 Middle School Curriculum (3) I, II, SS Staff
Programs of schools serving the 10-14 age group. Curriculum problems and trends; organizational and program patterns in schools variously titled junior high school, intermediate school and middle school. Analysis of relationship of teachers, administrators, community. Pre: teaching experience.

636 Secondary School Curriculum (3) I, II Fultz, Martin
Principles and techniques of curriculum improvement at secondary school level. Pre: teaching experience.

637 Art in Secondary Education (3) II Pickens
Principles of and problems in teaching art in secondary school; current approaches in teaching art. Pre: 336, consent of instructor and teaching experience.

639 Business Education Curriculum (3) I Morris
Theory, philosophy, objectives, and development of business education curriculum. Pre: teaching experience or consent of instructor; 349 or 460.

640B Seminar in Business Education (3) I, II Morris
Study in trends, research, and problems of implementation in business education. Pre: 348, 349; teaching experience: consent of instructor.

640C Seminar in English Education (3) I, II R. Alm
Study in trends, research, and problems of implementation in English education. Pre: 320 or 330; teaching experience: consent of instructor.

640D Seminar in Foreign Language (3) I, II E. Sato
Study in trends, research, and problems of implementation of foreign language. Pre: 335; teaching experience: consent of instructor.

640E Seminar in Health & Physical Education (3) I, II Staff
Study in trends, research, and problems of implementation in health and physical education. Pre: 343; teaching experience: consent of instructor.
640F Seminar in Home Economics Education (3) I, II  McAuliffe
Study in trends, research, and problems of implementation in home economics education. Pre: 371; teaching experience; consent of instructor.

640G Seminar in Industrial Education (3) I, II  Poyzer
Study in trends, research, and problems of implementation in industrial education. Pre: 346, 347; teaching experience; consent of instructor.

640H Seminar in Industry (3) I, II  Pang, Picard, Whitman
Study in trends, research, and problems of implementation in industry. Pre: 324 or 334; teaching experience; consent of instructor.

640I Seminar in Research (3) I, II  Staff
Study in trends, research, and problems of implementation in industrial education. Pre: 321 or 331; teaching experience; consent of instructor.

640J Seminar in Science (3) I, II  Campbell, Carr
Study in trends, research, and problems of implementation in science education. Pre: 323 or 333; teaching experience; consent of instructor.

640K Seminar in Social Studies (3) I, II  Brown, Inn, Jackstadt
Study in trends, research, and problems of implementation in social studies education. Pre: 322 or 332; teaching experience; consent of instructor.

640L Seminar in Speech (3) I, II  Staff
Study in trends, research, and problems of implementation in speech education. Pre: 339; teaching experience; consent of instructor.

640M Seminar in Interdisciplinary Education (3) I, II  Staff
Study in trends, research, and problems of implementation in interdisciplinary education. Pre: teaching experience; consent of instructor.

640N Seminar in Art (3) I, II  Becker, Pickens
Study in trends, research, and problems of implementation in art education. Pre: 326 or 336; teaching experience; consent of instructor.

640O Seminar in Creative Expression (3) I, II  Hayes
Study in trends, research, and problems of implementation in creative expression. Pre: 329; teaching experience; 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 and teaching experience. (Identical to HPE 643)

646 Reading Difficulties (3) I, II  R. Alm, Austin, Young
Causes, prevention and correction. Evaluation and remedial practices useful to classroom teacher. Pre: course in teaching of reading and teaching experience.

647 Clinical Procedures in Reading (3) I, II  Austin
Diagnosis: methods and materials for improvement of an individual’s reading ability. Pre: 646; consent of instructor and teaching experience. May be repeated once for credit.

649 Theory & Practices in Cooperative Business Education (3) II  Morris
Study of theory and practices of coordinating cooperative training programs in business education. Pre: teaching experience or consent of instructor; 639.

657 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 to Ed EF 657)

667 Curriculum Trends in Early Childhood Education (3) II  Feeley
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.

688 Issues and Trends in Curriculum (3) I or II  Staff
Through problem-centered approach and field experiences, course includes historical review of curriculum development since 1900, examination of current curriculum practices at all levels of education, and prediction of future directions in curriculum theory and design. Pre: M.Ed. and teaching experience.

699 Directed Reading and/or Research (v) I, II  Staff
Individual reading and/or research. Pre: consent of instructor and department chairman.

722 Seminar in Elementary Curriculum Foundations (3) I, II  Braun, Inn, Jenkins
Advanced study in development and improvement of curriculum of elementary schools. Required for Plan B M.Ed. candidates in their final semester or summer session. Pre: 622; teaching experience; consent of instructor. May be repeated once for credit.

733 Seminar in Curriculum, Secondary (3) I, II  Martin, Noda
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; teaching experience; 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; teaching experience; consent of instructor; Phil 300 desirable.

800 Thesis Research (v) I, II

INDUSTRIAL EDUCATION (IE)

300 Industrial Crafts—Jewelry and Lapidary Processes (2) I  Poyzer
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) I  Poyzer
Design and fabrication of leather products. Materials and processes taught through creative projects and problems.

302 Industrial Crafts—Plastics and Wood Sculpture (3) II  Poyzer
Design and fabrication of plastic projects; materials and processes of metal enameling; other industrial crafts native to Hawaii.

309 Graphic Arts (3) I  Staff
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.

350 Basic Industrial Education, Elementary Schools (3) I, II  Staff
Basic industrial education taught in a laboratory setting using tools, materials processes and methods adaptable to elementary education with emphasis on industrial career awareness. (Identical to Ed CI 350)

401 Problems in Industrial Education (v) I, II  Poyzer
Problem arranged for specialization in several technical areas. May be repeated for total of 5 credits.

402 Improvement of Instruction, Industrial Education (v) I, II  Poyzer
Consideration of problem in teaching industrial education. May be repeated for total of 5 credits.

497 Cooperative Vocational Experiences (v) I, II  Staff
Planned work-experience program for special areas of vocational-technical education. Learning experience includes an acceptable type of wage earning employment. Minimum of six 40-hour weeks or 240 work hours required for each 3 semester hours of credit. May be repeated. Pre: consent of instructor. (Identical to Ed CI 497)

764 Seminar in Industrial Education (2) I  Poyzer
Individual study of special problems. May be repeated once for credit.
Educational Administration (Ed EA)

Department Office: Wist Hall Annex 2-227

Professors: Dunwell, Everly, Ingils.
Associate Professors: Araki, J. Thompson, Varney.

480 Organization and Administration of Schools (3) II Araki
Principles and practices of school administration in relation to the function of the teacher. Special emphasis placed on Hawaii's state organization of public education. In and its laws and regulations.

600 Theory of Administration (3) I, II Varney
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 IS 600)

601 Introduction to Educational Administration (3) I, II Dunwell
Develops view of administrative process and organization elements in context of system of personal, social and physical variables. Emphasis on role and functions of school administrator.

602 Research in Educational Administration (3) I, II Thompson
Develops basic concepts of research in educational administration: methodology, status of particular topics, communication, and application of findings to problems of school administration.

605 Collective Negotiation in Education (3) I, II, SS Thompson
Principles and practices of collective negotiations as they apply to public and private education. Special emphasis placed on negotiation practices under Hawaii Public Employee Collective Bargaining Act S.B. No. 1696-70, CD-1.

610 School-Community Relations (3) I Araki
Application of principles, techniques, policies, organization of school-community information program.

620 School Finance (3) II Thompson
School revenues, apportionments, budgetary procedures, costs, business management.

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 to HPE 623)

630 School Law (3) I Thompson
Functions, relationships, responsibilities of school districts and school personnel with interpretations of legal status as shown by constitutions, statutes, court decisions.

640 Systems Approach—Program Planning (3) I, II, SS Varney
Basic concepts and techniques in systems approach to educational management. Emphasizes preparation of program plans required at various organizational levels for PPBS.

645 Principles of School Management (3) I, II, SS Staff
Relates identified management functions to operational problems of school administrators at various organizational levels. Principles and issues of management in relationship to practice of school administration.

650 Human Factors in Organization (3) I, II, SS Dunwell, Ingils
Analysis of the nature of organizations, human nature and needs, and their relationship to leadership, staffing, and staff development. Implications of group structure and human conflict, communications, and supervision and evaluation considered.

670 School Supervision (3) I Araki
Principles of supervision and development of supervisory programs.

699 Directed Reading and/or Research (v) I, II Staff
Individual reading and/or research. Pre: consent of instructor and department chairman.

720 Administrative Internship (6) I, II Staff
Supervised internship experience in school principalship. Emphasizes administrative functions related to total educational program and development of leadership skills. Pre: approval of cooperating agencies and department.

775 Seminar on the Principalship (3) I, II, SS Staff
Series of planned seminar experiences on problems and issues confronting school principal, such as contract administration, program planning and budgeting (PPBS), teacher evaluation. Topic to be announced. May be repeated.

780B Seminar in Organizational Accountability (3) I, II, SS Staff
Study in trends, research and problems of organizational accountability in education.

780C Seminar in Organizational Change (3) I, II, SS Staff
Study in trends, research and problems of organizational change in education.

780D Seminar in Organizational Evaluation (3) I, II, SS Staff
Study in trends, research and problems of organizational evaluation in education.

780E Seminar in Program Management/PPBS (3) I, II, SS Staff
Study in trends, research and problems of program management. Emphasis of PPBS as a management technique in education.

780F Seminar in Curriculum Development (3) I, II, SS Staff
Study in organization and strategy of curriculum development and the educational administrator's role.

780G Seminar in School Governance (3) I, II, SS Staff
Study in trends, research and problems of school governance, including contract administration, student rights, due process.

780H Seminar in College Student Personnel Administration (3) I, II, SS Staff
Study in trends, research and problems of college student personnel administration.

780I Seminar in Higher Education Administration (3) I, II, SS Staff
Study in trends, research and problems of higher education administration.

780J Seminar in Administrative Theories (3) I, II, SS Staff
Study in trends, research and problems in theories of educational administration.

780K Seminar in Administrative Problems and Issues (3) I, II, SS Staff
Study in trends, research and problems in educational issues affecting administration.

800 Thesis Research (v) I, II Staff

Educational Communications (Ed EC)

Department Office: Wist Hall 105

Professor: Wittich.
Associate Professors: Butler, Kucera, Lum, Sanderson.

400 or its equivalent is a prerequisite for majors in Educational Communications.

Undergraduate courses: The department offers a few courses for undergraduate students, primarily those preparing themselves for a teaching career.

314 Audio-Visual Techniques (3) I, II Staff
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 (v) 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.
400 Media Technology (3) I, II
Butler, Kucera
Exploration of interrelated technical factors common to various educational communications media such as still photography, motion picture photography, television, and auditory media. Theory, nomenclature, and practical application studied to provide full understanding of technology involved.

404 Survey of Educational Communications Media (3) I, II
Staff
Overview of research which supports selected media channels, survey of selected communication channels characteristics and development of understanding and practices related to media systems structures as applied to a chosen learning problem.

450 Media Utilization and Organization (3) I, II
Lum
Educational communications media selection, production, utilization and evaluation. Organization of media materials on classroom, grade or departmental levels. Includes laboratory experience. Not for educational communications majors. Pre: 314 or equivalent.

495B Media Practicum:
Local Materials (1) I, II
Butler, Lum
Concentrated study and practical experience, through 16 hours of lecture-demonstrations and laboratory work, in selection, preparation, and utilization of still-projected and non-projected media and materials.

495C Media Practicum: Educational Still Photography (1) I, II
Butler
Concentrated study and practical experience, through 16 hours of lecture-demonstrations and laboratory work, in operational photographic skills.

495D Media Practicum:
Basic ITV Skills (1) I, II
Kucera
Concentrated study and practical experience, through 16 hours of lecture-demonstrations and laboratory work, in operational skills of TV and auxiliary equipment.

495E Media Practicum:
Microteaching (1) I, II
Kucera
Concentrated study and practical experience, through 16 hours of lecture-demonstrations and laboratory work, in utilization of television for purposes of self- and peer-evaluation. Pre: 495D or equivalent.

495F Media Practicum:
Audio Systems (1) I, II
Staff
Concentrated study and practical experience, through 16 hours of lecture-demonstrations and laboratory work, in theory and application of audio reinforcement, reproduction and storage systems as they relate to learning and instructional settings.

495G Media Practicum: Self-Tutorial Systems (1) I, II
Butler, Lum, Wittich
Concentrated study and practical experience, through 16 hours of lecture-demonstrations and laboratory work, in the theory, design, and application of a multi-sensory approach which will enable a student to direct his own learning activity. Pre: 495B and 495C or equivalent.

495H Media Practicum: Curriculum Application (1) I, II
Butler, Lum, Wittich
Concentrated study and practical experience, through 16 hours of lecture-demonstrations and laboratory work, in systematic application of media to specific curricular areas.

600 Seminar in Media Research Foundations (3) I, II
Kucera
Basic concepts in educational media research. Study and discussion of current research in various topics of educational communications. Development of overview of research findings. Required of all educational communications majors. Pre: consent of department chairman.

620 Production of Instructional Materials (3) I, II
Butler, Lum
Preparation of two- and three-dimensional instructional materials, charts, graphs, learning displays, television graphics, overhead transparencies, audio recordings, and use of Ektographic visual maker.

623 Survey and Production of Asian and Pacific Study Materials (3) I, II
Butler, Lum
Selection, evaluation and use of instructional materials available to teachers of Asian and Pacific studies subjects. Adapting existing materials or creating new materials; maps and models, audio recordings, flat pictures, slide sets, projectuals, filmstrips, realia and films. Pre: 620 and consent of instructor.

625 Educational Still Photography (3) I, II
Butler
Theory and practice involved in planning and producing educational film strips, slides, prints. Emphasis on meeting curriculum goals through systematic development of still film as learning material for presentations. Pre: 400.

626 Educational Motion Pictures (3) I, II
Butler, Wittich
Planning and producing educational motion pictures; emphasis on communication and aesthetic factors as related to planning and production of motion pictures to meet curriculum goals through a systematic development. Pre: 625 or consent of instructor.

630 Television in Education (3) I or II
Kucera
Development and utilization of television for purpose of improving the teaching-learning process. Practical exploration of possibilities with simple TV systems (including the capability of recording). Pre: 400.

635 ETV Systems and Programs (3) I or II
Kucera
Study of planning, acquisition, utilization, and evaluation of educational television programming. Analysis of systems of organization, administration, transmission, and distribution. Pre: 630 or consent of instructor.

639 Mass Communication and Education (3) I, II
Kucera
Investigation of educational role of radio, TV and film as social forces of times; seeking out of perspectives on technological revolution of educational communications. Mass media and the future of education. Pre: consent of instructor.

640 Programmed Learning (3) I, II
Butler

650 Media Service Administration (3) I, II
Butler, Lum
Developing theory of administration for media service and production involved in planning, initiating, operating, developing, and evaluating a curriculum support program in a single school or school complex setting. Pre: 314 or 404.

670 Educational Communications Systems (3) I, II
Butler, Wittich
Review 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 and interrelated techniques. Pre: 620 or equivalent.

690 Seminar and Internship in Media Leadership (3) I, II
Staff
Supervised activity in analyzing and developing media-related learning experiences; establishing and testing strategies and procedures with communications media and techniques. Required of Plan B students as the terminal course. Pre: consent of department chairman. May be repeated.

699 Directed Reading and/or Research (v) I, II
Staff
Individual reading and/or research. Pre: consent of instructor and department chairman. May be repeated—3 cr. maximum each time.

750 Seminar in Administration and Management of Media Programs (3) I, II
Wittich
Current principles and practices in organization, administration, and management of programs utilizing new learning media: audiovisual, ETV, facilities for such management. Topics selected from (1) elementary, (2) intermediate, (3) secondary, (4) community college, (5) special education, (6) higher education, (7) district-state levels. Pre: 650.

800 Thesis Research (v) I, II
Educational Foundations (Ed EF)

Department Office: Wist Hall Annex 2-222

Professors: Amioka, Anderson, Boyer, Ezer, Keppel, Potter, Stueber.

Associate Professors: Frazier, Jaeckel, Kobayashi.

Assistant Professors: Beauchamp, Fruehling.

Students enrolled in colleges other than the College of Education are asked to confer with the department chairman before enrolling in 310.

310 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.

397 Utilizing the Community as a Classroom (2) I, II, & SS Brameld Demonstration through the use of community resources how learning and teaching can occur beyond the typical classroom. In-service teachers, both elementary and secondary, will experiment with ways of bringing the classroom into the life of the community.

399 Directed Reading (v) 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 Ethnicity, Poverty, and Education (3) I, II, SS Ezer, Frazier, Fruehling Survey of social and psychological factors related to low income student and his education. Review of local resources and facilities to assist these pupils. (Identical to Sp Ed 409)

445 Educational Sociology (3) I, II Ezer Examination of development of theoretical and practical aspects of social structure and their relationship to education. Pre: 310 or 3 hrs. of sociology.

480 Anthropological Applications (3) II Fruehling Education as means of transmitting culture. Socialization in non-literate societies; universal aspects of process. Cross-cultural education. (Identical to Anth 480)


650 Historical Foundations of Western Education (3) I, II Jaeckel, Keppel History of European thought and practice as basis for study of modern education.

651 History of American Education (3) I, II Beauchamp, Jaeckel, Keppel Introduction to history of American educational thought from 17th century to present.

652 History of Education in Hawaii (3) I, II Stueber From Cook's discovery to present. Social and intellectual influences on development of Islands' culture; emphasis upon the role of public and private schools in developing a common language community. Pre: 310 or its equivalent.

657 Community College (3) II Potter 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 to Ed Cl 657)


664 Seminar in Problems in Education (2) I, II Staff For Plan B M.Ed. candidates. Topics determined by Plan B projects. Required seminar for completing the M.Ed. in Plan B.

665 Comparative Ideologies and Education (3) I Boyer Critical analyses of contemporary ideologies with particular reference to implications for educational policies and practices.

669 Foundations of Comparative Education (3) I, II Anderson, Kobayashi Introduction to the comparative analysis of educational processes in different societies.

670 Comparative Education: Europe and America (3) I, II Staff 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.

683 Social Foundations of Education (3) I, II Boyer, Ezer, Frazier Impact on education of major social trends and forces operating in American society; social change and education.

684 Education and World Order (3) I, II, SS Boyer Global futurism focuses on major problems such as war prevention, ecological planning, and world poverty as a basis for developing transnational education. Pre: 310 or 683 or consent of instructor.

686 Environmental Education (3) I, II, SS Boyer Focus in environmental problems such as pollution, resources depletion, and over-population to develop programs of relevant education. Uses action projects in schools and community.

699 Directed Reading and/or Research (v) I, II Staff Individual reading and/or research. Pre: consent of instructor and department chairman.

725 Education and Social Change (3) I, II Fruehling Theory and practice of socio-cultural innovation as these relate to school and profession of teaching.

751 Recent History of American Education (3) II Jaeckel, Keppel 19th- and 20th-century history of American educational thought and practice. Pre: 651 or consent of instructor.

757 Educational Utopias (2) II Jaeckel, Keppel, Stueber Intensive study of English translations of major contributions to Western educational thought from Plato to Dewey. Pre: 650 and consent of instructor.

761 History of American Higher Education (3) I, II Jaeckel, Keppel, Potter Genesis and evolution of college and university from colonial America to present. Pre: 651 or 6 hrs. in U.S. history; consent of instructor.

763B Seminar in Educational Issues (2) I, II, SS Examination of social problems, philosophical viewpoints, and possible solutions to issues affecting policy in educational institutions—public, private, elementary, secondary, or higher. May be repeated for credit with different content. Pre: 660 or consent of instructor.

763C Seminar on John Dewey (2) I, II, SS Boyer Intensive study of philosophy of education of John Dewey, its relationship to other philosophies of education, and its impact on education. May be repeated for credit with different content. Pre: 660 or consent of instructor.

763D Seminar in Contemporary Educational Philosophers (2) I, II, SS Frazier, Kobayashi Study of the writings of individual philosophers or schools of philosophy and the implications for educational practice. May be repeated for credit with different content. Pre: 660 or consent of instructor.

763E Seminar in Japanese Educational Philosophy (2) I, II, SS Amioka, Kobayashi Study of the Japanese tradition, its influence on education in Japan and elsewhere, and the context from which educational philosophies arose and in which they were applied. May be repeated for credit with different content. Pre: 660, 671, or consent of instructor.

763F Seminar in History of Education (2) I, II, SS Jaeckel, Keppel, Stueber Advanced study of particular aspects of the history of education;
e.g., the education of women or minority ethnic groups, relationship of public education to immigration, development of secondary education, reform movements in education. Applications of historiography to educational problems. May be repeated for credit with different content. Pre: 650, 651, 652, 761, or consent of instructor.

767 Seminar in Special Problems in Educational Foundations (2) I, II Staff Study and discussion of significant topics and problems in the field for doctoral students in the College of Education. Pre: admission to candidacy.

770B Seminar in Comparative Education: Asia (2) I, II, SS Anderson, Kobayashi Problems, policies, and practices of educational institutions in Asian nations viewed in the social context of the target cultures. May center on one or more nations depending on interest of seminar participants and specialty of faculty leader. May be repeated for credit with different content. Pre: 671 or consent of instructor.

770C Seminar in Comparative Education: Developing Nations (2) I, II, SS Anderson Educational problems, policies and practices in the developing nations of Asia, the Pacific Basin, South America, and Africa. May center on one or more geographical areas depending on interest of seminar participants and specialty of faculty leader. May be repeated for credit with different content. Pre: 669, 671, equivalent in experience or consent of instructor.

770D Seminar in Comparative Education: Industrial Nations (2) I, II, SS Staff Problems, policies, and practices of educational institutions in Europe, USSR, and North America viewed in the cultural context. May center on one or more geographical areas depending on interest of seminar participants and specialty of the faculty leader. May be repeated for credit with different content. Pre: 670 or consent of instructor.

770E Seminar in Comparative Education: British Commonwealth (2) I, II, SS Staff Educational problems, policies, and practices in Great Britain, Canada, Australia, New Zealand, and other British Commonwealth nations viewed in the cultural context of target areas. May center on one or more of the Commonwealth members depending on interest of seminar participants and the specialty of the faculty leader. Pre: 670, 671, or consent of instructor.

800 Thesis Research (v) I, II

Educational Psychology (Ed EP)

Department Office: Wist Hall Annex 2-221

Professors: Adkins, Beyers, Collins, Fullmer, Leton, Michel, Nunokawa, Reid, Staats.

Associate Professors: Chang, Dunn-Rankin, Gust, Sherrill, Whitaker.

Assistant Professors: Ayabe, Bail, Blaine, O'Malley, Nicol, Priggie, Shapiro.

311 and 416 or their equivalents are prerequisites for all graduate courses in Educational Psychology.

Students enrolled in colleges other than the College of Education are asked to confer with the department chairman before enrolling in 311.

311 Psychological Foundations (3) I, II Principles of learning and individual differences; relationships of these factors to classroom experience. Pre: Psy 100.

399 Directed Reading (v) I, II 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.

416 Tests and Measurements (3) I, II Theory and techniques of measurement and evaluation in education, including supervised experience in instrument development and analysis.

429 Introductory Statistics (3) I, II, SS Use of descriptive statistics in analyzing test scores; applications of linear correlation and regression; introduction to an understanding of inferential statistics. Pre: 416.

508 School Project Design and Evaluation (3) I or II Fundamental design and evaluation procedures for school programs. Topics to include determining needs, defining objectives, program design, instrumentation, data collection, and evaluation.

597 Interpersonal Relations in the School (2) I, II, SS Knowledge and practice of skills for improvement of interpersonal relations in the school. Primarily concerned with classroom situations. Pre: teaching experience.

598 Research Utilizing Problem Solving (2) I, II, SS Knowledge and practice of skills for systematic definition, analysis, and solution of classroom problems. Pre: teaching experience. (Identical to Ed CI 598)

601 Guidance in the School (3) I, II Basic principles of guidance; consideration of techniques, organization, materials, resources.

602 Elementary School Guidance (3) I Principles, techniques, organization of guidance services in elementary school.

603 Introduction to Practicum (3) I or II Experiential learning to prepare students for supervised experience in the schools. Pre: consent of instructor.


605 Problems of School Adjustment (3) I Principles of behavior affecting human relationships in school, with emphasis upon application to actual situations.

606 Student Personnel Services in Higher Education (3) II 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.

608 Introduction to Educational Research (3) I, II Fundamental design and evaluation procedures in educational research. Topics to include determining needs, defining objectives, research design, instrumentation, data collection, and evaluation. Pre: 416 or consent of instructor.


610 Counseling: Theory and Practice (3) I, II Theories and techniques of counseling and psychotherapy as preparation for practicum and field work. Pre: 416 or equivalent course in tests and measurements, 601 or equivalent course in guidance, consent of instructor.

614 Theory and Assessment of Intelligence (3) I Theories of intelligence, psychometric and social issues in intelligence testing; use of individual intelligence examinations for assessment of educability. Pre: 416 or Psy 425. Enrollment in graduate programs in clinical or school psychology, counseling and guidance or education of exceptional children.

629 Educational Statistics (3) I, II Statistical inference including applications of parametric and non-parametric methods to educational problems. Pre: 429 or its equivalent.

640 Programmed Learning (3) II 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 to Ed EC 640)
645 American College Student (3) I
Study of psycho-social characteristics of American college student and college environment, from viewpoint of student personnel work. Pre: 311, 416.

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: Psy 430. (Identical to Psychology 655)

672 Advanced Educational Psychology: Learning (3) I, II
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
Research methods and findings involving classroom group structures, attitude and personality development, psycholinguistic behavior. Pre: consent of instructor.

685 Children Learning Laboratory (3) I
State's 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 to Psychology 685)

686 Principles of Rehabilitation Counseling (3) I
History, philosophy, principles, legislation, and development of vocational rehabilitation. Role and function of rehabilitation counselor and relationship with principal community agencies. Pre: consent of instructor.

687 Psychology and Physiology of Rehabilitation (3) II
Systematic presentation of psychological and medical aspects of most prevalent handicapping conditions. Analysis of rehabilitation process in selected cases. Pre: acceptance in vocational rehabilitation program and consent of instructor.

699 Directed Reading and/or Research (v) I, II
Individual reading and/or research. Pre: consent of instructor and department chairman.

701 Seminar in Guidance (3) I, II
Current issues and problems. (1) School psychology, (2) testing, (3) counseling theory, (4) vocational, (5) elementary school. (6) administration, (7) group procedures, (8) philosophical and social issues in guidance, (9) student personnel work in higher education, (10) rehabilitation. Pre: 8 credits in guidance courses: consent of instructor and department chairman.

702 Group Guidance (3) I

703 Guidance Practiceum (3) I, II
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
Research techniques and thesis development. Pre: 429 or equivalent: consent of instructor.

709 Advanced Problems of Educational Measurement and Evaluation (3) II
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 to Psychology 605)

710 Counseling: Group Theory and Practice (3) I, II
Theories and techniques of group counseling and psychotherapy as preparation for practicum and field work. Pre: 610 or equivalent preparation, basic course in guidance, tests, and measurements, counseling theory-practice, and consent of instructor.

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 its equivalent.

768 Seminar in Educational Psychology (3) I, II
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.

800 Thesis Research (v) I, II

Health and Physical Education (HPE)
Department Office: Varsity Bldg.
Professors: Chui, Saake.
Associate Professors: Daniels, Little, O’Brien, Thompson, Tominaga, Tracy, Vasconcellos.
Assistant Professors: Asato, Kaina, Krahenbuhl, Martin, Mock, Rocker, Seichi.
Instructors: Hanson, Hisaka.
Lecturers: Bear, Harada, Haefner, Onishi, Pang, Tagomori.

Medical Clearance Requirement: To register for the following courses, a student is requested to present a medical clearance issued by Student Health Service: 101-167, 198, 233-236, 332-337, 433, 434, 454, 474, 476. Students without medical clearance will be allowed to register in these courses but will not be allowed to participate or perform in class until the clearance is obtained.

101 Physical Fitness (I) I, II
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 (I) I, II
Mock, Seichi
Adjusting to and immersing in water, floating, sculling; correct arm stroke, leg kick, breathing techniques and their coordination. (Student must provide own swimming attire approved by aquatics director.)

104 Swimming: Intermediate (I) I, II
Mock, Seichi
Perfecting and integrating basic strokes with added emphasis on swimming for distance and speed. (Student must provide own swimming attire approved by aquatics director.)

105 Swimming: Advanced (I) I, II
Mock
Correct techniques used in competitive swimming, racing starts, correct turning techniques, long distance swimming. (Student must provide own swimming attire approved by aquatics director.)

107 Tennis: Beginning (I) I, II
Asato, Rocker
Rules, etiquette, grip, serve, and backhand strokes, serving, volleying: singles and doubles play.

108 Tennis: Advanced (I) II
Staff
Improving the serve, forehand and backhand strokes, volleying, chop shot, competitive strategy, problems in rules.

110 Golf: Beginning (I) I, II
Vasconcellos, Krahenbuhl, Seichi, Chui
Rules, etiquette, grip, stance, drive, normal iron shots, approach shots, putting.

111 Golf: Advanced (I) I, II
Seichi, Chui
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 (I) I, II
Hanson, Kaina
Rules, etiquette, arm swing, approach, execution, scoring, spare pickups. Students pay charge for use of alley.

120 Badminton (I) I
Rocker
Rules, etiquette, grip, serve, and backhand strokes, serving, smash, drive, net play, offensive and defensive strategy: singles and doubles play.

123 Folk and National Dances (I) I
Kaina
Popular dances of various national groups, including square dances.

124 Dances of Hawaii (I) I, II
Kaina
Background and fundamentals of hula. Selected dances with and without instruments.
126 Rhythmic Activities (1) II Kaina
Social dances including ballroom dances, mixers, etc.

135 Volleyball (1) I, II Asato
Rules, serving, passing, setting-up, spiking, blocking, offensive and defensive team play strategy. Separate sections for men and women.

137 Basketball (1) I Rocker
Rules, passing, shooting, dribbling, rebounding, individual defensive and offensive maneuvers; team offense and defense. Separate sections for men and women.

152 Weight Training (1) II Haefner
Kinesiology of lifting and weight training, various types of exercises and methods of training with resistance.

154 Tumbling and Rebound Tumbling (1) II Haefner
Single and combination stunts on tumbling mats and trampoline, balancing stunts; techniques of spotting; safety procedures.

156 Heavy Apparatus (1) II Haefner
Single and combination stunts on side horse, horizontal bar, parallel bars, still rings; techniques of spotting; safety procedures.

160 Judo (1) I Onishi
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 Bear
Rules, etiquette, basic rolls, simple holds and the breaking of such holds, specific physical conditioning exercises. (Student must provide own gi.)

162 Karate (1) I, II Tagomori
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 Pang
Analytical and laboratory study of classic forms of T'ai Chi Ch'uan (advanced form of Kung Fu).

167 Wrestling: Beginning (1) I, II Little
Rules; fundamental defensive and offensive maneuvers and competitive strategy, i.e., takedowns, reversals, escapes, and pinning combinations; conditioning exercises.

195 Modern Health: Personal and Community (2) I, II Tominaga
Primarily for majors in health education, physical education and recreation. Mental-emotional health, family-living and scientific health information for personal and community health.

198 Water Polo (1) I, II Mock
Fundamentals of basic water polo skills, namely, ball handling, passing, shooting, dribbling plus a brief introduction into beginning techniques of individual offense and defense. Pre: 104 or consent of instructor. (Student must provide own swimming attire approved by aquatics director.)

Courses numbered 201 and above are not open to lower division students (except for pre-education and pre-recreation majors with the consent of department chairman)

201 School Health Problems: Elementary (2) 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 Tominaga
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 Rocker, Thompson
Aims and objectives of physical education; basic concepts of body in movement; physical education as academic discipline; relationships 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 Rocker
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 Accident Prevention (2) I, II Seichi
Understanding the fundamental principles and techniques of safety and accident prevention programming emphasizing school, home, public places, on the job and motor vehicle situations.

233 Physical Education: Elementary (3) I, II Hanson
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 Thompson
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 Harada
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) II 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, II Tominaga
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.

301 Health of the School Child (2) O'Brien
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. (Not offered 1973-74)

302 School's Role in Community Health (2) I, 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 Emergency Care and First Aid Instructor Training (2) I, II Seichi
Practicum in training of persons to become qualified instructors of emergency care knowledge and first aid skills; American Red Cross certificate may be earned. Pre: consent of instructor.

333 Coaching of Football and Basketball (2) I Martin, Vasconcellos
Fundamentals, position play, team play, strategy, rules, scouting, planning and conduct of practice, specific training problems. Pre: 201.

334 Coaching of Baseball and Volleyball (2) II Seichi, Tominaga
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) I, II
技术及规则，包括短跑，跳远，跳高等。

336 Coaching of Swimming (2) II
Mock

337 Coaching of Individual and Dual Sports (2)
Saake, Seichi

338 Field Work in Recreation: Basic (v) I, II
Saae

348 Programs in Recreation (2) I
Harada

397 Colloquium in Recreation (1) I, II
Chui

399 Directed Reading (v) I, II
Hanson, Rocker

401 Current Trends in Health (3) II
O'Brien

423 Organization and Supervision of Physical Education (3) I, II
Asato, Thompson

433 Music and Rhythms in Physical Education (2) I, II
Kaina

434 Techniques of Officiating in Athletics (2)
Hisaka

436 Methods and Materials of Aquatics and Life Saving (2) I
Mock

453 Anatomy in Physical Education (3) I, II
Tracy

454 Physiology in Physical Education (3) I, II
Daniels, Mook

463 Kinesiology (3) I, II
Little

476 Motor Learning and Performance (3) I, II
Krahenbuhl

531 Practicum in Family Life and Sex Education (3) I, II
Tominaga

603 Scientific Foundations of Physical Education (3) I, II
Daniels

623 Administrative Problems in Physical Education (3) II
Chui

634 Adapted Physical Education (3) I, II
Little

673 Evaluation and Measurements in Physical Education (3) I
Krahenbuhl

699 Directed Reading and/or Research (v) I, II
Chui
Special Education (Sp Ed)

Department Office: University Ave. Bldg. 1, IA

Professor: Dunn.
Associate Professors: Fargo, McIntosh.
Assistant Professors: Apffel, Takeguchi-Feldman.

399 Directed Reading (v) 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 Introduction to Special Education (3) I, II Apffel
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 Curriculum and Instruction in Special Education (3) I Takeguchi-Feldman
Introduction to planning and organization of instruction in special education. Prospective teachers shall learn through theory and guided observations the learning characteristics of exceptional learners and develop objectives and instructional systems for education of exceptional children. Pre: 404.

408 Methods and Materials in Teaching the Trainable Mentally Retarded (3) I, II Apffel
Methods and techniques of instruction employed in application of skill development to learning in content areas: analysis and evaluation of instructional materials with consideration of programmed, basal, linguistic, audio-visual resources and other types of materials; demonstrations of techniques of instruction; criteria for selection and application of instructional materials; review of findings with implications for classroom teacher of trainable mentally retarded. Pre: 405 and consent of instructor.

409 Ethnicity, Poverty, and Education (3) I, II, SS Fargo, McIntosh
Survey of social and psychological factors related to low income student and his education. Review of local resources and facilities to assist these pupils. (Identical to Ed EF 409)

410 Methods and Materials in Teaching the Child with Learning and Behavior Disorders (3) I, II McIntosh
Materials, methods, and techniques applicable to instruction of children with learning and behavior disorders. Emphasis given to criterion selection of materials, sequencing and programming of materials, evaluation of programs, pertinent related research in field. Pre: 405 and consent of instructor.

411-412 Identification and Remediation of Learning Difficulties (3-3) Yr. Staff
Theory, survey, demonstration, evaluation, and clinical practices for diagnosis and remediation of learning difficulties; including use of instruments in diagnosis, of psycholinguistic skills and perceptual-motor functions. Pre: 405.

414 Education of Gifted Children (3) II McIntosh
Characteristics and educational provisions for gifted children. Particular attention to psychological aspects of creativity.

418 Methods and Materials in Teaching the Educable Mentally Retarded (3) II Apffel
Methods and techniques of instruction employed in application of skill development to learning in content areas: analysis and evaluation of instructional materials with consideration of programmed, basal, linguistic, audio-visual resources and other types of materials; demonstrations of techniques of instruction; criteria for selection and application of instructional materials; review of findings with implications for classroom teacher of educable mentally retarded. Pre: 405 and consent of instructor.

485 Behavior Modification of Handicapped Children (3) I, II Fargo
Application of principles of behavior modification in treatment and classroom instruction of exceptional children. Pre: 404 or consent of instructor.

597 Contemporary Developments in Special Education (3) I, II Staff
In-depth review of selected contemporary developments in field of special education. Emphasis on recently completed studies which have implications for instruction of exceptional children. Pre: consent of instructor.

606 Psychology and Physiology of Mental Retardation (3) I Apffel
History, etiologies, characteristics, psychodiagnosis, education and adjustment of the mentally retarded children. Emphasis on theoretical and research approach. Pre: consent of instructor.

607 Psychoeducational Aspects of Learning Disabilities (3) I McIntosh
History, etiologies, characteristics, psychodiagnosis, education and adjustment of learning disabled children. Emphasis on theoretical and research approach. Pre: consent of instructor.

611 Advanced Curriculum and Instruction in Special Education (3) I, II Takeguchi-Feldman
Examination of issues, trends, and principles in curriculum development and consideration of multiple approaches to teaching methodology in special education. Pre: 405 and student teaching.

615B Clinical Assessment of Exceptional Children—LD (3) I, II McIntosh
Diagnostic instruments used in clinical appraisal of learning disabled children. Theoretical considerations will buttress field appraisal experience. Taken concurrently with 619B. Pre: 411-412 or consent of instructor.

615C Clinical Assessment of Exceptional Children—MR (3) I, II Apffel
Diagnostic instruments used in clinical appraisal of mentally retarded children. Theoretical considerations will buttress field appraisal experience. Taken concurrently with 619C. Pre: 411-412 or consent of instructor.

616 Seminar in the Education of Exceptional Children (3) I, 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, (4) gifted. Pre: 404, 405, 410.

619B Theory and Practice of Clinical Teaching—LD (3) I, II McIntosh
Theories and techniques of clinical teaching with children with learning and behavior disorders. Taken concurrently with 615B. Pre: 411-412 or consent of instructor.

619C Theory and Practice of Clinical Teaching—MR (3) I, II Apffel
Theories and techniques of clinical teaching with mentally retarded children. Taken concurrently with 615C. Pre: 411-412 or consent of instructor.

627 Advanced Practicum (v) I, II Staff
Supervised experiences in clinical teaching or related activities in special education activities in public and private schools or agencies in Hawaii. Pre: 611, 615, 619.

630 Advanced Behavior Modification in Special Education (3) I Fargo
Studies and programs in behavior modification of handicapped children in an educational setting. Pre: 405, 485.
College of Engineering

The quality of life on this planet in year 2000 A. D. will be dependent to a large extent upon the wisdom that is exercised during the next thirty years in the management of technology. An engineering degree provides an excellent background for seeking solutions to many of the problems related to the urban crisis, the enhancement of our living environment, and the preservation of the species man. The programs of study in all engineering curricula include both general and theoretical coursework designed to equip the student with the ability and the motivation to meet the challenges of our technology-oriented society. Particular emphasis is placed on problems related to the preservation and enhancement of the environment.

Engineering education has been a major program of study at this institution since the beginning of the University of Hawaii in 1907. Over 2,000 engineering degrees have been granted, and many of the professional engineers currently practicing in industries, consulting firms, and governmental agencies throughout the state are graduates of this University. Curricula in civil, electrical, and mechanical engineering are fully accredited by the national accrediting agency—the Engineers' Council for Professional Development—which verifies that a graduate of the University of Hawaii is well-qualified to begin a challenging career in engineering.

Admission and Degree Requirements

General admission requirements of the University and recommended courses for prospective engineering students are listed on pp. 24-28. Additional screening of aptitude tests and high school records is provided for acceptance into the College of Engineering.

Although all undergraduate curricula are set up for completion in eight semesters, some engineering students take an additional semester or enroll in summer school course work to complete degree requirements. However, with the improved level of high school instruction and a reduction in the number of credits now required for an engineering degree, many students are receiving their degrees in eight semesters.

An increasing number of students are transferring into engineering from Hilo College and from some of the community colleges. Programs have been developed so that students can transfer in at full junior status after completing two years of pre-engineering course work on their initial campus. In some cases it is necessary to take an additional semester or summer session to make up for any introductory engineering subjects not taken during the first two years.
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 course work included in each of the curricula offered by the College of Engineering 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.

All engineering freshmen on the Manoa campus enroll initially in the department of general engineering and are advised by engineering faculty from the beginning of their academic program. The first two years provide a flexible core of courses that is common to all four curricula and includes the following:

Common Two-Year Flexible Curriculum

<table>
<thead>
<tr>
<th>General Educational Requirements</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communications &amp; Required Humanities</td>
<td>9</td>
</tr>
<tr>
<td>One English course from the 100 through 170 series &amp; One Literature course from the 251 through 256 series.</td>
<td></td>
</tr>
<tr>
<td>Speech 251, 151</td>
<td></td>
</tr>
<tr>
<td>Quantitative Reasoning</td>
<td>12</td>
</tr>
<tr>
<td>*Mathematics 205, 206, 231, 232</td>
<td></td>
</tr>
<tr>
<td>World Civilizations</td>
<td>6</td>
</tr>
<tr>
<td>History 151, 152</td>
<td></td>
</tr>
<tr>
<td>Natural Sciences</td>
<td>17</td>
</tr>
<tr>
<td>*Chemistry 117, 118</td>
<td></td>
</tr>
<tr>
<td>Physics 170, 171, 272, 273, 274</td>
<td></td>
</tr>
<tr>
<td>Humanities &amp; Social Sciences Electives</td>
<td>3-6</td>
</tr>
<tr>
<td>Total 47-50</td>
<td></td>
</tr>
</tbody>
</table>

*Math 134 may be required if math preparation is inadequate.
†If prerequisite for Chem 117 has not been met, 113-115 and 114-116 will be substituted.

Pre-Engineering Requirements

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>One year of high school mechanical drawing or GE 61</td>
<td>0-1</td>
</tr>
<tr>
<td>GE 101 Engineering Orientation</td>
<td>1</td>
</tr>
<tr>
<td>GE 251 or 253 Digital Computer Programming</td>
<td>3</td>
</tr>
<tr>
<td>(Must be 253 for Mechanical majors)</td>
<td></td>
</tr>
<tr>
<td>CE 270 &amp; 271 Applied Mechanics</td>
<td>6</td>
</tr>
<tr>
<td>(Electrical Engineering majors may substitute an additional mathematics course and Physics 310)</td>
<td></td>
</tr>
<tr>
<td>Total 10-11</td>
<td></td>
</tr>
</tbody>
</table>

Additional Department Requirements

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civil Engineering</td>
<td>6</td>
</tr>
<tr>
<td>GE 113 Introduction to Engineering Design (3)</td>
<td></td>
</tr>
<tr>
<td>CE 211 Surveying (3)</td>
<td></td>
</tr>
<tr>
<td>Electrical Engineering</td>
<td>8</td>
</tr>
<tr>
<td>GE 113 (3)</td>
<td></td>
</tr>
<tr>
<td>EE 311 Basic Circuit Analysis (4)</td>
<td></td>
</tr>
<tr>
<td>EE 313 Circuits Laboratory (1)</td>
<td></td>
</tr>
<tr>
<td>General Engineering</td>
<td>3-6</td>
</tr>
<tr>
<td>GE 113 (3)</td>
<td></td>
</tr>
<tr>
<td>CE 370 Mechanics of Materials I (3)</td>
<td>(For Ocean Option Only)</td>
</tr>
<tr>
<td>Mechanical Engineering</td>
<td>9</td>
</tr>
<tr>
<td>GE 203 Technology and Society (3)</td>
<td></td>
</tr>
<tr>
<td>(or any other Social Sciences Elective)</td>
<td></td>
</tr>
<tr>
<td>Econ 120/150 (3)</td>
<td></td>
</tr>
<tr>
<td>ME 311 Thermodynamics (3)</td>
<td></td>
</tr>
</tbody>
</table>

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 following curricula. The course work for each of these programs of study satisfies the general education 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 additional flexibility in course selection from the curricula that follow.
Civil Engineering

Civil Engineering is concerned with the activities of man and his environment. The civil engineer conceives, plans, designs, constructs, operates and maintains the physical works necessary to the environmental needs of people—a pure water supply, disposal and recycling of waste, environmental health, transportation, water power developments, and structures of all types. The expanding scope of civil engineering encompasses such diverse fields as control of environmental pollution, solid waste management, industrial wastes, eutrophication, space vehicles, radio telescopes, and nuclear plant installations.

Civil engineering continues to meet the demands of business, industry and government where a broad, fundamental education is required. The curriculum, however, develops depth in the various areas of the civil engineering professions such as environmental and sanitary engineering, structures, applied mechanics, water resources, hydraulics, surveying, soil mechanics, transportation and urban engineering. It is designed to give the student the broad educational background essential to modern civil engineering practice, including a better understanding of societal and environmental problems. The course offerings reflect the changes that are constantly taking place in civil engineering such as an emphasis on computer use and the systems approach to large engineering projects. With the assistance of a faculty adviser, the student can pursue a flexible program designed to meet his individual needs and interests.

Mechanical Engineering

The main objective of the department of mechanical engineering is to provide students with the opportunity to undertake programs of study that will enable them to successfully pursue professional careers in mechanical engineering. In order that its graduates be conversant with the arts and with the problems of ethics and society, the department requires, as do all engineering departments at the University, that its students complete an extensive series of courses in the humanities and social sciences. The total educational program is designed to develop social and aesthetic awareness, as well as professional competence.

The department of mechanical engineering recognizes that it can achieve its main objective only if its academic programs are relevant to the needs of modern society and technology. The mechanical engineering program achieves such relevance by combining a broad base of mathematics, science and design courses with a select number of specialized technical courses.

The B.S. curriculum in mechanical engineering consists of a four-year program of study comprising 130 credits, as indicated below. This program prepares the mechanical engineering graduate to contribute effectively in such diverse professional areas of activity as design and development of mechanical components, instruments, machines and systems; generation of power and conversion of energy; and research and consultation in scientific areas of prime concern to mechanical engineers, such as fluid mechanics, heat transfer, materials processing, acoustics, and environmental control.

Electrical Engineering

The curriculum for the department of electrical engineering consists of a number of requirements carefully chosen to provide for the general education of the student, to lay a firm foundation in pre-engineering courses in the first two years, and to conform to the University's general requirements for the baccalaureate degree. During the third and fourth years the student, with the assistance of a faculty adviser, will choose from the broad selection of courses offered by the electrical engineering department and by related departments, to develop a program of study that satisfies his curricular requirements.

To help the student choose a selection of courses consistent with these requirements and to encourage him to group these courses into a coherent set related to an area of contemporary electrical engineering practice, the department offers a number of options—pre-planned sequences of courses—leading to a mild level of specialization. Options are offered in biomedical engineering, computers, control and power systems, electronics, fields and waves, and systems. Each option includes sufficient electives so that the student may further tailor his course of study to his particular interests, and prepare himself for a challenging career opportunity in one of the advanced technology areas identified by his option.

General Engineering

General engineering administers the common two-year flexible curriculum and provides advising for all engineering students until they transfer to one of the other disciplines. In addition, general engineering offers a baccalaureate degree in engineering with several different options:

- Agricultural Engineering Option
- Information Sciences Option
- Management Engineering Option
- Ocean Engineering Option

These options have been worked out in close cooperation with the various departments involved. In addition to providing the equivalent of a bachelor's degree in the areas mentioned above (which is not otherwise available at the University of Hawaii), they are also designed to provide a student with an excellent background for graduate work in these same areas.

For those students desiring an engineering background but wishing to study in other disciplines as well, such as biology, medicine, the environment, etc., the Flexible Engineering Option is offered. This consists of the common two-year flexible engineering curriculum, plus an individualized program for the last two years which is tailored from liberal arts, science and engineering courses to produce the desired goal. Each candidate for such a program will be assigned an advising committee. One of the members of the committee will be designated as major adviser. This committee will help the student in drawing up his study plan and will provide guidance and counseling whenever needed during the course of study.
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 both the Master of Science and Doctor of Philosophy levels, 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. The department also offers undergraduate courses in ocean engineering that may be taken by students from any of the traditional engineering disciplines. An undergraduate ocean engineering option is available in the general engineering department.

Civil Engineering Curriculum

All Civil Engineering majors must confer with a College of Engineering adviser prior to registration each semester.

First Two Years

See Common Two-Year Flexible Curriculum ............... 65

Third and Fourth Years

University Requirements
Economics (Econ 120) ............................................ 3
Humanities and Social Sciences Electives .................. 6

Departmental Requirements
CE 320 Fluid Mechanics Fundamentals ..................... 3
CE 330 Environmental Engineering ......................... 3
CE 350 Soil Mechanics ......................................... 3
CE 361 Transportation Engineering ......................... 3
CE 370 Mechanics of Materials I ............................. 3
CE 381 Structural Analysis .................................... 3

Group 1: Civil Engineering (minimum of 6 courses) .... 18
CE 212, 322, 372, 401, 403, 405, 412, 413, 421, 424, 426,
431, 432, 450, 462, 463, 464, 468, 469, 482, 485,
486, 487, 491, 492

Group 2: Environmental and Applied Sciences .......... 24
EE 311, 315, 411; GE 451, 492; Geog 375;
GG 101, 102, 457; ME 311, 331; Ocean 201;
OE 401, 411, 412; Arch 311

Group 3: Technology-Society-Environment ............... 3 or 4
Arch 375; GE 203; Sci 124; Geog 326

Group 4: Biological Sciences .................................. 24
Bot 101; Micro 130; Sci 121; Zool 101, 230

Group 5: Mathematics (1 required from each section)
a. CE 411, 414, 477 ........................................... 3
b. Any mathematics course numbered 301 and above .... 3

One course selected from Group 1, 2, or 3 ................. 3 or 4
Open Elective .................................................. 2

Total Units 128 minimum

Other alternatives differing from suggested curriculum above are possible with the consent of the student’s adviser and the department chairman.

Electrical Engineering Curriculum

First Two Years

See Common Two-Year Flexible Curriculum .......... 63-64

Third and Fourth Years

University Requirements
Economics (Econ 120) ............................................ 3
Humanities or Social Science Electives .................. 6

Departmental Requirements
Mathematics (300 or above) ................................. 6
Thermoscience (Phys 430 or ME 311) ..................... 3
Materials Science (Phys 440 or ME 431) ................ 3
Electronics (EE 323, 324) .................................. 4
Electromagnetic Theory (EE 371) .......................... 3
EE Electives* (300 or above) ............................... 16
EE Design Elective ........................................... 3
Engineering Science or Science Elective ................. 3
Technical Electives* (Engineering, Math and
Science courses 300 or above) ......................... 9
Other Elective* .............................................. 3

Total 53 62

*Electives must constitute a coherent program with adviser’s approval.

General Engineering Curriculum

Ocean Structures Option†

Third Year

First Semester Credits Second Semester Credits
OE 401 Intro to Ocean Engr ................................. 3
CE 381 Struct Anal 1* ............................ 3
ME 311 Thermodynamics ............................... 3
ME 322 Fluid Mech I ................................. 3
Ocean 201 Science of the Sea ......................... 3

Total 15 Total 16

Fourth Year

First Semester Credits Second Semester Credits
OE 403 Fundamentals of Oce Engr ........................ 3
OE 461 Coastal and Harb Engr ............................ 3
CE 485 Struct Design I ................................. 4
ME 403 Adv Math for Engr I ............................ 3
Human/Soc Sc Elective ................................. 3

Total 16 Total 16

(See notes on following page.)
General Engineering Curriculum (continued)

*CE 370 Mechanics of Materials I (3)
Must be taken during second semester of sophomore year as a prerequisite for CE 381.

†This is only one of several options offered in general engineering. The other options currently offered are:
Agricultural Engineering Option
Information Sciences Option
Management Engineering Option
(Formerly G. E. Business Optional)
Ocean Environment Option
Flexible Engineering Option (This option combines basic engineering with other diverse disciplines in accordance with students' needs. See general engineering narrative.)

Mechanical Engineering Curriculum

Third Year

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME 312 Applied Thermodynamics</td>
<td>3</td>
</tr>
<tr>
<td>ME 322 Mechanics of Solids</td>
<td>3</td>
</tr>
<tr>
<td>Fluids I</td>
<td>3</td>
</tr>
<tr>
<td>ME 331 Materials Science</td>
<td>3</td>
</tr>
<tr>
<td>ME 371 Mechanics of Materials</td>
<td>3</td>
</tr>
<tr>
<td>ME 402 Computer Methods in Engineering</td>
<td>3</td>
</tr>
<tr>
<td>EE 311 Basic Circuit Analysis</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME 300 Measurements</td>
<td>3</td>
</tr>
<tr>
<td>ME 323 Mech of Fluids II</td>
<td>3</td>
</tr>
<tr>
<td>ME 341 Materials Processing</td>
<td>3</td>
</tr>
<tr>
<td>ME 375 Intro to System Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>EE Elective</td>
<td>3</td>
</tr>
<tr>
<td>EE Lab Elective</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

Fourth Year

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME 400 ME Experimentation</td>
<td>2</td>
</tr>
<tr>
<td>ME 422 Heat Transfer</td>
<td>3</td>
</tr>
<tr>
<td>ME 467 Design of Mech Elements</td>
<td>3</td>
</tr>
<tr>
<td>TE§</td>
<td>3</td>
</tr>
<tr>
<td>Math Elective</td>
<td>3</td>
</tr>
<tr>
<td>Human/Soc. Sc. Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math Elective*</td>
<td>3</td>
</tr>
<tr>
<td>ME 468 Intro to Engr Design</td>
<td>4</td>
</tr>
<tr>
<td>TE§</td>
<td>9</td>
</tr>
<tr>
<td>Human/Soc. Sc. Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

*EE Elective

Any EE course numbered 300 or above
CE 411 Applied Probability and Statistics
ME 403-404 Advanced Mathematics for Engineers

†This is only one of several options offered in general engineering. The other options currently offered are:
Agricultural Engineering Option
Information Sciences Option
Management Engineering Option
(Formerly G. E. Business Optional)
Ocean Environment Option
Flexible Engineering Option (This option combines basic engineering with other diverse disciplines in accordance with students' needs. See general engineering narrative.)

*Math Elective

Any Math courses numbered 300 or above
CE 411 Applied Probability and Statistics
ME 403-404 Advanced Mathematics for Engineers

†EE Elective

Any EE course numbered 300 or above

‡EE Lab Elective

Any EE laboratory course

§Technical Elective (Any mathematics, physics or engineering courses numbered 300 or above approved by adviser: 6 credits must be ME courses.)

ENGINEERING COURSES

See p. 3 for a discussion of course descriptions.

Civil Engineering (CE)

Department Office: Holmes Hall 383

Professors: Burbank, Chiu, Evans, Go, Lau, Mitsuda, Nielsen, Szilard, Tinniswood, Williams, Yuen.
Associate Professors: Bauman, Dugan, Fok, Grace, Hamada, Hummel, Taoka, Young, Zundelovich.
Assistant Professors: Cheng, Ho, Nader.

211 Surveying I (3) I, II (2L, 1Lb)
Nader
Basic principles, computations, use of instruments involving horizontal and vertical measurements, map reading, topographic surveying. Pre: trigonometry; credit or registration in GE 113.

212 Surveying II (3) (2L, 1Lb)
Nader
Topographic mapping: curves; earthwork; computer applications: route problems. Pre: Math 205, CE 211 and GE 251 or GE 253.

270 Applied Mechanics I (3) I, II
Mitsuda
Equilibrium of particles, rigid bodies, frames and machines: vectors, centroids, friction and moments of inertia. Pre: credit or registration in Phys 170.

271 Applied Mechanics II (3) I, II
Taoka

320 Fluid Mechanics Fundamentals (3) I, II
Yuen, Fok
Compressible and incompressible fluid properties; fluid statics: kinematics, energy and momentum considerations in steady flows; application of steady flow concepts to various fluid processes. Pre: 271 or Phys 310.

322 Theoretical Fluid Mechanics (3) II
Grace, Williams

330 Environmental Engineering (3) I, II
Dugan
Introduction to environmental and sanitary engineering. Water resources, water treatment, liquid and solid waste management, air and noise pollution controls. Pre: junior standing in engineering or consent of instructor.

350 Soil Mechanics (3) I, II (2L, 1Lb)
Evans, Hummel

361 Transportation Engineering I (3) I, II
Introduction to the planning, design, and operation of transportation facilities. Pre: junior standing in engineering.

370 Mechanics of Materials I (3) I, II
Evans
Elastic stress-strain relationship and behavior of members under flexural, torsional, axial loading. Pre: 270.

372 Mechanics of Materials II (3) II
Mitsuda
Inelastic behavior, unsymmetrical bending, theories of failure, curved beams, torsion, energy methods, buckling. Pre: 370.

381 Structural Analysis (3) I, II
Hamada

401 Experiments and Instrumentation (3) I, II
Cheng, Hummel
Laboratory experience in mechanics of materials and fluid mechanics, and the use of electronic instrumentation in such experiments. Pre: 320, 370.
403 Systems Design (3) II
Integrated design of a complex civil engineering system, involving the application of concepts drawn from the various civil engineering disciplines; introduction to the principles of optimization applied to such systems. Pre: senior standing.

405 Engineering Management (3) I, II Tinniswood
Business, legal, economic aspects of engineering. Pre: engineering seniors who will graduate within 12 months.

411 Applied Probability and Statistics (3) I, II Grace
Description of sample data, probability and probability distributions; inferences from samples; testing hypotheses; experimental errors; correlation and regression; introduction to random time functions. Pre: consent of instructor.

412 Dynamic Probabilistic Analysis (3) II Grace, Zundeleich
Background and application to civil engineering problems of continuous random processes, decision analysis, Markov processes, and reliability. Pre: 411 and consent of instructors.

413 Operations Research in Civil Engineering (3) II Cheng
Deterministic formulation and techniques of optimization for the design of civil engineering systems. Applications include transportation design, traffic control, water resources system design and operation, structural design, and construction management. Pre: Math 311 or equivalent.

414 Matrix Engineering Analysis (3) II Taoka

421 Hydraulics (3) I 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 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 Hydraulic Design (4) II (3L, 1Lb) 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 Water and Wastewater Engineering (3) I, II Tinniswood

432 Water and Waste-Water Treatment Design (3) II Young
Unit operations, processes, and design of water and waste-water treatment plants. Pre: 431.

450 Soils and Foundation Engineering (4) II (3L, 1Lb) Evans

462 Transportation Engineering II (3) II Traffic engineering—the operation of open-guidance transportation systems. Pre: 361, consent of instructor.

463 Urban Engineering and Planning (3) I Bauman
Principles of engineering and planning in urban areas; contemporary urban problems; current design techniques, future concepts. Pre: consent of instructor.

464 Urban and Regional Transportation Planning (3) I Bauman
Application of land use planning and traffic engineering techniques to the solution of the urban transportation problem. Topics considered include: forecasting methods, traffic generation and simulation theory, methods of planning and design, and future concepts. Pre: consent of instructor.

468 Engineering Soils Mapping and Evaluation (3) I Engineering and pedological soil classification, mapping systems, sampling techniques, geophysical exploration, land use suitability evaluation and mapping, term project. Pre: consent of instructor.

469 Airphoto Interpretation and Remote Sensing (3) II Nader
Engineering applications of aerial photography and remote sensing, airphoto interpretation of soils, remote sensing of environment. Pre: consent of instructor.

477 Computer Methods in Civil Engineering Systems (3) I, II Taoka
Application of the digital computer to solution of problems from various areas of civil engineering. Introduction to the use of the Integrated Civil Engineering Systems Program (ICES) and the Scientific Subroutine Package Program (SSP). Pre: GE 251.

482 Advanced Structural Analysis (3) II Chiu, Hamada
Analysis of indeterminate beams, rigid frames, trusses, arches and space frames by classical methods, moment distribution, introduction to matrix analysis. Pre: 381.

485 Structural Design I (4) I (3L, 1Lb) Zundeleich
Design of elements of steel and reinforced concrete structures, with emphasis on ultimate strength theory. Pre: 370.

486 Structural Design II (4) II (3L, 1Lb) Zundeleich
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 Prestressed Concrete (3) I Go
Analysis and design of prestressed beams, columns, slabs, composite sections. Special problems. Pre: 486 or equivalent, consent of instructor.

491-492 Special Topics in Civil Engineering (3-3) I, II Course will reflect special interests of visiting or/and permanent faculty and will be limited to students with a junior or senior standing. Pre: consent of instructor.

499 Special Problems (v) I, II 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.

623 Hydraulic Transients (3) I Cheng
Unsteady flow in closed conduits, pipeline surges, water hammer, and transients caused by pumps and turbines; unsteady channel flow, channel surges and flood routing. Techniques adapted to digital computer are stressed. Pre: 421 or consent of instructor.

624 Flow in Porous Media (3) II Lau, Williams
Applications of fluid mechanics to flow of single-phase and multiphase fluids in porous media. Pre: consent of instructor.

626 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 Ground-Water Hydrology (3) I Lau
Ground-water occurrence, movement, quality, conservation, development, management. Hydromechanics of ground water. Pre: consent of instructor.

628 Water Resources Planning and Development (3) I Fok
Planning and development of multi-purpose water resources systems with consideration of: hydrologic, engineering, economic, environmental, ecological, political, legal, social and organizational aspects of project formulation. Pre: consent of instructor.

629 Water Resources System Analysis (3) II Fok
Design criteria and technique for optimization in water resources systems. Deterministic and stochastic simulation design by linear and dynamic programming, and other optimization methods. Pre: 628 or consent of instructor.

631 Water Quality Management (3) I Dugan
Evaluation of major environmental factors affecting water quality including urban, industrial and agricultural activities. Engineering aspects of analysis are considered in relationship to control and management for water quality improvement. Pre: consent of instructor.

632 Advanced Water Treatment Technology (3) II Dugan
Theory and application of physical, chemical, and biological processes as related to the principles, practice, and economics of utilizing conventional and advanced levels of treatment. Special emphasis will be given to wastewater renovation and reclamation techniques. Pre: consent of instructor.
634 Waste Treatment Plant Design (3) II Burbank
Functional design of water/wastewater/solids handling and treatment systems.

635 Sanitary Engineering Chemistry (3) I Young
Chemistry of water and wastewater, including instrumentation and process control evaluations and interpretations of results as used in practice. Basic concepts of general, qualitative, quantitative, and organic chemistry as related to the environment. Pre: consent of instructor.

636 Sanitary Engineering Microbiology (3) I Dugan, Young
Fundamental microbiology involved in environmental engineering processes and research with special emphasis on mixed culture systems, biochemistry and microbiological aspects of water supply protection and wastewater treatment. Pre: consent of instructor.

637 Environmental and Sanitary Engineering Lab (3) II (2L, 1Lb) 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 Staff
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.

639 Biology of Environmental Engineering Systems (3) II Dugan, Young
Microbiology and microbiological chemistry related to environmental engineering systems. Ecology of waste water treatment and stream sanitation. Marine and estuarine pollution. Pre: consent of instructor.

640 Industrial Waste Treatment (3) I Dugan, Young
Philosophy of industrial waste treatment. Waste characteristics, effects on collection and treatment systems and receiving waters, survey methods. Case histories of industrial waste problems including theoretical considerations for solution. Laboratory studies of specific wastes to determine design parameters for treatment. Pre: consent of instructor.

641 Marine Disposal of Wastes (3) I Grace, Young

644 Analysis and Design of Urban Transportation Systems (3) II Bauman
Applications of systems engineering to the analysis and design of transportation systems. The economics, financial capacity, operating characteristics, and demand interrelationships of all transportation modes which have potential in the urbanized area are considered with respect to the development of integrated transport facilities. Pre: 464.

655 Simulation and Modeling of Urban Systems (3) II Bauman
Development of methods for simulating transportation and land use development under conditions of political, governmental, and capital budget constraints. Pre: 413, 464.

671 Theory of Elasticity I (3) I Szilard

672 Theory of Plasticity (3) II Mitsuda

675 Theory of Vibrations (3) I Nielsen
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) I Nielsen

677 Energy Methods in Applied Mechanics (3) II Taoka
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) I Szilard

679 Theory of Thin Shells (3) II Szilard

681 Advanced Indeterminate Structures (3) I Chiu
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 Szilard

683 Advanced Reinforced Concrete Design I (3) II Go
Ultimate strength theory, composite beams using precast and cast-in-place concrete. rigid frames and slabs. Pre: consent of instructor.

686 Numerical Methods in Continuum Mechanics (3) II Szilard, Hamada

687 Design of Structural Systems (3) I Zundelovich
Planning and design aspects of structural systems. Design of buildings for lateral forces (frames, shear walls). Computer applications to design problems. Aesthetic considerations in structural design. Feasibility and suitability studies. Emphasis on actual designs. Pre: graduate standing or consent of instructor.

691-692 Seminar in Civil Engineering (1-1) Jr
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; (5) water resources and hydrosciences. Pre: consent of instructor. Required of all graduate students.

696 Selected Topics in Civil Engineering (3) I, II
Highly specialized topics in structural, soils, hydraulics, sanitary, water resources, applied mechanics, transportation. Pre: consent of instructor.

699 Directed Reading or Research (v) I, II Pre: consent of instructor.

800 Thesis Research (v) I, II
General Engineering (GE)

Department Office: Holmes Hall 202

Professor: Avery.
Associate Professor: Hubbard.
Assistant Professors: Augustus, Boyd, Stoutemyer, Takahashi.

61 Graphical Communications (1) I, II (1 2-hr Lb) Boyd
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.

101 Engineering Orientation (0) I (1L) Hubbard, Staff
Discussion of various fields of engineering by the instructor and outside speakers. Audiovisual presentations relating to engineering, ecological awareness, societal interactions, aesthetics, and futuristics. Library and campus orientation also included.

113 Introduction to Engineering Design (3) I, II (1L, 2 2-hr Lb) Avery, Boyd
Introduction to the engineering design process including graphical communication and report writing. Major design phases, creative aspects, presentation and communication. Each student will participate in and complete a design project. Pre: 1 year high school drawing or GE 61.

203 Technology and Society (3) I, II (3L) Takahashi
Nature of technology and its impact on society. Historical interactions, current aspects, projections for the future. Present problems and conflicts, and prospects of resolutions. (Identical to IS 203)

251 Introductory Computer Methods in PL/I (3) I, II (3L) Augustus, Stoutemyer
PL/I programming language for applied math and physical science. Planning, writing, debugging of programs together with basic applications. Pre: credit or registration in Math 205 or equivalent.

253 Introductory Computer Methods in FORTRAN (3) I, II (3L) Boyd, Takahashi
FORTRAN programming language for applied math and physical science. Planning, writing, and debugging of programs together with basic applications. Pre: credit or registration in Math 205 or equivalent.

255 Introductory Computer Methods in COBOL (3) SS only (3L) Chen
COBOL (Common Business Oriented Language) programming language for business data processing. Data processing principles, program planning, writing and debugging, together with basic applications.

301 Architectural Structures "A" (3) I, II (3L) Hubbard
Introduction to basic mechanics. Force systems, equilibrium, truss systems, frames, and arches. Pre: Math 205. (Identical to Arch 301.) Not open to engineering majors.

302 Architectural Structures "B" (3) I, II (3L) Augustus

333 Computer Programming for Bio-Science (3) I, II (3L) Liang
Introduce computer programming and its use through presentation of computer application examples in bio-sciences. (Identical to AgEng 333)

451 Computer Methods in Engineering (3) I, II (3L) Augustus, Stoutemyer
Review of numerical techniques in engineering computations: roots of algebraic and transcendental equations, solution of simultaneous linear algebraic equations, numerical integration and differentiation, eigenvalue problems, numerical integration of ordinary differential equations using a digital computer. Application to problems in engineering and applied science. Pre: Math 232 and GE 251, GE 253 or equivalent. (Identical to ME 402)

461 Systems Fundamentals for Environmental Problems (3) I, II (3L) Staff
Non-mathematical introduction to the fundamentals of general systems theory, systems engineering and interdisciplinary research designed for all students interested in the problems of man and his environment.

491-492 Special Topics in General Engineering (v) I, II Staff
Specialized topics in engineering sciences reflecting special interests of visiting and permanent faculty. Open to juniors and seniors. Pre: consent of instructor.

622 Experimental Methods in Cause-Effect Modeling (3) II (3L) Hundt
Factorial designs and fractional, factorial designs for screening variables and for response optimization. Response surface methodology. Experimental designs appropriate to building and testing multi-variable behavior relationships. Sequential experimental designs. Pre: knowledge of basic statistics and consent of instructor. (Identical to AgEng 622)

Electrical Engineering (EE)

Department Office: Holmes Hall 483

Professors: Abramson, Hwang, Kinariwala, Kuo, Lichtenberger, Peterson, Roeofs, Sleipan, Weaver, Weldon, Yuen.
Associate Professors: Chattopadhyay, Gaarder, Granborg, Koide, Lin, Najita, Fang.
Assistant Professors: Naqvi, Yen.

260 Introduction to Digital Computers (3) I, II (3L)
Binary numbers, introduction to computer machine language programming, computer organization, Boolean algebra, logic circuit design, flip-flops, counters, registers, the arithmetic, memory, input/output, and control units, introduction to computer systems.

311 Basic Circuit Analysis (4) I, II (4L-Lb)
Linear Circuits, time-domain analysis, transient and steady-state responses, state variables, step and impulse response, convolution; sinusoidal steady-state analysis, phasors, impedance and admittance; network or system functions, Thévenin’s and Norton’s theorems, frequency response and filtering, resonance; digital computation for circuit analysis, differential equation solutions, numerical integration, gauss elimination method, computation of amplitude and phase response. Pre: Math 231, knowledge of FORTRAN or PL/I.

313 Circuits Laboratory (1) I, II (1Lb)
Introductory EE laboratory. Pre: registration in 311.

315 Signal and System Analysis (3) I, II (4L)
Chattopadhyay, Gaarder

323 Basic Electronics (3) I, II (3L)
Najita, Naqvi
Semiconductor structures, operating principles and characteristics of diodes and amplifying devices. Their application as circuit elements in building basic digital, analog, and integrated circuit subsystems. Pre: 311.

324 Basic Electronics Laboratory (1) I, II (1Lb)
Experiments on linear and logic properties of diodes and transistor networks. Pre: 313, registration in 323.

326 Linear Electronics (3) I, II (3L)
Fang, Naqvi
Principles and design of linear and analog electronic circuits; tuned and power amplifiers, feedback amplifiers and oscillators, operational and differential amplifiers, power supply circuits, integrated circuits as analog system building blocks. Pre: 323.
327 Linear Electronics Laboratory (1) I, II (ILb)
Laboratory for 326, experiments on linear and analog electronics. Pre: 324, registration in 326.

331 Energy Conversion (3) II (3L) Granborg, Hwang

333 Energy Conversion Laboratory (1) II (ILb)
Experiments on electromechanical energy conversion using generalized machine. magnetic circuits and transformers. Elementary experiments on direct energy conversion. Pre: 313, registration in 331.

360 Logic Design (3) I, II (3L) Lin, Weldon
Binary numbers, Boolean algebra, combinational circuits, minimization methods including Karnaugh map and Quine-McCluskey techniques. Use of computer to solve complex design problems, sequential circuit analysis, design of flip-flops, counters, registers and other basic computer circuits. Pre: 323.

371 Fields and Waves I (3) I, II (3L) Koide, Weaver
Stationary and traveling waves in distributed parameter systems. Stationary electric and magnetic fields. Pre: 311; registration in Math 232.

372 Fields and Waves II (3) I, II (3L) Koide, Weaver
Solution of Maxwell's equations under various boundary conditions. Introduction to microwave theory. Pre: 371.

411 State Space Analysis (3) I (3L) Chattopadhyay, Yen
Review of Laplace transform techniques: introduction to vectors and matrices; input-output description of a system: state equation; computation of state-transform matrix; impulse response and transfer function matrices; obtaining state equations from a transfer function matrix: computing zero-input, zero-state responses; model analysis of systems. Pre: 315.

415 Digital Filter Design (3) I (3L) Gaarder
Sampling theorem, analog to digital and digital to analog converters; synthesis principles, Butterworth and Chebyshev low pass, high pass, and band pass filters: sampling, quantizing, sensitivity and round off errors; Fast Fourier Transform techniques. Pre: 411 or consent of instructor.

422 Electronic Instrumentation (3) I (3L) Lin, Kuo

423 Instrumentation Laboratory (1) I (ILb)
Laboratory for 422. Pre: 313, registration in 422.

424 Integrated Circuit Fabrication Techniques (3) I, II (3L) Naqvi
Design processes, processing techniques, evaluation and testing of integrated circuits. Pre: senior standing or consent of instructor.

425 Integrated Circuits (3) II (3L) Roelofs

427 Physical Electronics (3) I (3L) Fang, Naqvi

428 Nonlinear and Digital Electronics (3) II (3L) Fang, Naqvi
Principles and design of nonlinear and digital electronic circuits: Binary operations, logic and amplitude gates, flip-flops, shift-registers, integrated circuits as digital system building blocks, timing, switching, and wave forming circuits. Pre: 323.

429 Nonlinear and Digital Electronics Laboratory (1) I (ILb)
Laboratory for 428, experiments on non-linear and digital electronics. Pre: 324, registration in 428.

435 Power System Analysis (3) I (3L) Hwang

436 Direct Energy Conversion (3) I (3L) Gruben
Principles of conversion of energy to electrical energy, exclusive of electromechanical conversion. Includes, chemical, nuclear, solar, thermal and biological sources; fuel cells, MHD generators, solar cells, batteries, thermoelectrics, reactors. Applications from microwatts to gigawatts. Pre: consent of instructor.

441 Communication Systems (3) I, II (3L) Lin, Kuo
Signal representation. Fourier analysis: probability theory, random processes: applications to communication systems, including telephone, satellite, high-frequency radio, AM-FM radio, television. Pre: Math 371 or equivalent.

446 Information Theory and Coding (3) I (3L) Abramson, Lin
Fundamental properties of information. Sources and channels and coding of information. Applications to communication, linguistics, and coding of information. Pre: Math 371 or equivalent.

451 Feedback Control Systems (3) I, II (3L) Granborg, Hwang
A.C. and D.C. control of electrical and mechanical systems. Pre: Math 371 or equivalent.

453 Modern Control Theory (3) I (3L) Granborg, Hwang
Analysis and synthesis of nonlinear control systems by means of Lagrange's equations, state space techniques, the maximum principle. Lyapunov's theorems, the phase plane, and Z- transform techniques. Optimization and adaptation by means of gradient methods. Pre: 451.

455 Switching Circuit Theory (3) I (3L) Lin, Kuo

461 Digital Systems and Computer Design (3) I, II (3L) Lichtenberger, Weldon
Machine language programming, computer architecture fundamentals, central processing units, computer memories, input/output devices, the control unit, multiprocessing and time sharing, peripheral devices, computer graphics. Pre: 360.

462 Computer Techniques Laboratory (1) I, II (ILb)
Laboratory for 461. Pre: registration in 461.

463 Analog Computers (3) II (3L) Granborg

466 Computer Organization and Programming Techniques (3) I (3L) Lichtenberger
Organization and machine language of typical computers. Machine language programming techniques. Introduction to operating systems. Pre: knowledge of FORTRAN programming or consent of instructor.
467 Algorithmic Languages (3) II (3L) Weldon
   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 Microwave Communications (3) I (3L) Weaver
   Microwave amplifiers and oscillators, solid-state microwave 
   devices, antennas, radio propagation as applied to a microwave 
   communication system. Pre: 372.

474 Antennas (3) I (3L) Roelofs, Weaver
   Antenna fundamentals, directivity or gain, effective area arrays, 
   aperture antennas, horns, impedance, log-periodic antennas. 
   Design of antenna systems. Pre: 372.

475 Radio-Wave Propagation (3) II (3L) Weaver
   Application of Maxwell's equations to study of radio-wave prop­ 
   agation 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.

477 Fundamentals of Radar, Sonar and Navigations (3) I (3L) Yuen
   Discussion of basic radar detection and position- and velocity- 
   measurement principles. Applications to various types of radar 
   and sonar systems. Modern navigation aids. Pre: 371 or equiva­ 
   lent, familiarity with waveguides or waveguide theory.

481 Biodelectricity (3) I (3L) Koide
   Study of electrical phenomena in living systems primarily at the 
   cellular level, mechanisms underlying bioelectric potentials and 
   the quantitative evaluation of bioelectric parameters, measure­ 

483 Biomedical Engineering (3) II (3L) Koide
   Application of engineering principles and technology to biological 
   and medical problems. Instrumentation, physiological control 
   systems and models, artificial organs and prosthetics, sensory 
   mechanisms, nervous system, biomechanics, health-related prob­ 
   lems.

486 Biomedical Electronics (3) I (3L) Koide
   Electronic methods applied to biomedicine for instrumentation, 
   control, and prosthetics; biomedical application of operational 
   feedback amplifiers and digital electronics. Pre: 323.

487 Biomedical Electronics Laboratory (1) I (1LB)
   Laboratory for 486.

491-492 Special Topics in Electrical Engineering (3) I, II (3L)
   Course content will reflect special interests of visiting and perma­ 
   nent faculty, and will be oriented towards juniors and seniors. 
   Pre: consent of instructor.

499 Project (v) I, II
   Investigation of advanced engineering problems. Pre: senior 
   standing.

601 Graph Theory and its Applications (3) I (3L) Kinarwala, Kuo, Lin
   Graphs and subgraphs, Eulerian graphs, trees and treelike graphs, 
   the reconstruction problem, planar graphs and Euler's formula, 
   characterizations of planar graphs, topological parameters, con­ 
   nectivity and edge-connectivity, Hamiltonian graphs, extremal 
   regular subgraphs, graphs and groups, graph valued functions, 
   chromatic numbers, the four color problem, extremal problems, 
   enumeration of graphs, applications to system theory. Pre: Math 
   311 or consent of instructor.

603 Computer-Aided Analysis (3) I (3L) Kinarwala, Kuo
   Computer-aided analysis of circuits and systems; mathematical 
   vs. computational models, numerical methods, computational 
   algorithms; algorithms for linear and nonlinear systems; time- 
   and frequency-domain analysis, state-space analysis, differential 
   equations, convolution, transforms, matrices; truncation and 
   round-off errors, computational efficiency; emphasis is on practi­ 
   cal computational problems in systems analysis. Pre: 411, knowl­ 
   edge of FORTRAN or PL/I.

604 Computing Algorithms (3) II (3L) Kinarwala
   Analysis and study of computing algorithms, modeling of 
   algorithms; comparison of algorithms, measure of algorithms; 
   partitioning and decomposition, sequential and parallel process­ 
   ing, applications of graphs and digraphs; current research prob­ 
   lems in computing algorithms relevant to large systems. Pre: 
   403.

613 Linear System Analysis (3) I, II (3L) Chattopadhyay
   Linear spaces and linear operators; matrix representation of linear 
   operators; matrix algebra; numerical methods for solving matrix 
   equations; state transition operator; matrix representation of state 
   transition operator for linear systems; state equations and their 
   solutions; controllability and observability of systems. Pre: 315 
   or equivalent.

614 Analysis of Nonlinear Systems (3) II (3L) Hwang
   Analysis of nonlinear systems using computer, graphical and 
   analytical methods. Oscillating and time varying systems. Stabil­ 
   ity studies. Applications to electronic circuit and control prob­ 
   lems. Pre: 326, 451, Math 232 or equivalent.

617 Computer-Aided Circuit Design (3) I or II (3L) Kuo
   Computer methods of network analysis; the topological ap­ 
   proach, optimization methods, device modeling, using analysis 
   programs in circuit design, graphic data processing equipment, 
   languages for computer graphics, printed and integrated circuit 
   layout. Pre: 315, knowledge of FORTRAN or PL/I.

618 System Optimization (3) II (3L) Chattopadhyay
   Fibonacci and Golden section method; quadratic interpolation; 
   Rosenbrock's method; Powell's method of conjugate directions; 
   accelerated steepest descent; variable-metric method; gradient 
   projection technique; penalty function method; writing computer 
   codes of some of the above methods with application to engineer­ 
   ing problems. Pre: knowledge of matrix algebra and computer 
   programming.

621 Advanced Physical Electronics (3) II (3L) Naqvi
   Advanced principles in physical electronics; Band theory of sols; 
   current transport in semiconductors; Electron emission and 
   tunnelling; polarization phenomena; galvanomagnetic effects; 
   optical and surface properties of semiconductors. Pre: 427.

623 Advanced Electronic Instrumentation (3) I (3L)
   Electronic conversion transducers for control and measurements; 
   special-purpose amplifiers; analog and digital components and 
   circuits, applications. Pre: 422 or equivalent.

625 Solid State Devices (3) I (3L) Naqvi
   Physical principles and applications of modern solid state devices 
   such as avalanche diode, Gunn oscillator, Schottky-barrier 
   diodes, metal-oxide semiconductor (MOS) transistor, photodiode 
   and laser. Other devices reflecting current interest in laboratory 
   research and industrial applications. Pre: 427.

627 Advanced Topics in Physical Electronics (3) I (3L) Fang
   Recent developments in phenomena and devices of physical elec­ 
   tronics. Pre: 427.

628 Analysis and Design of Integrated Circuits (3) I (3L) Naqvi
   Fabrication constraints and design guidelines for integrated 
   circuits. Nonlinear model of integrated-circuit transistor. Design 
   and analysis of integrated logic circuits and linear integrated 
   circuits. Pre: 323.

644 Principles of Communications I (3) I (3L) Gaarder, Slepian
   Probability theory, random variables, expectation; random pro­ 
   cesses, power spectra, gaussian random processes; optimum 
   receivers, implementation, probability of error; time, bandwidth, 
   and dimensionality. Pre: 441, Math 371 or equivalent.

647 Principles of Communications II (3) II (3L) Gaarder, Slepian
   Efficient signal selection, channel capacity, channel reliability; 
   transmitter implementation, receiver quantizing, convolutional 
   codes, Viterbi decoding; random amplitude and phase channels, 
   fading channels. Pre: 465.

648 Error-Correcting Codes (3) II (3L) Lin, Weldon
   Basic mathematical properties of block and convolutional codes, 
   cyclic codes, correction of random and burst errors, implementa­ 
   tion, use in practical error control systems. Pre: Math 311 or 
   consent of instructor.
Mechanical Engineering (ME)

Department Office: Holmes Hall 302

Professors: Burgess, Chai, Chou, Fand, Larsen-Basse, Stuiver.
Associate Professors: Cheng, Fox, Htun, Kihara, Munchmeyer.

649 Advanced Information Theory (3) I (3L)
Gaarder, Lin, Slepian
Measure of information, coding for discrete sources, discrete memoryless channels and capacity, the noisy-channel coding theorem, techniques for coding and decoding, memoryless channels with discrete time, waveform channel, source coding with a fidelity criterion. Pre: 446 or consent of instructor.

651 Nonlinear Control Systems (3) I (3L)
Yen
Global stability in time domain studied via state variable by methods of Lyapunov, Krasovskii and canonical form of Lure. Systems involving sectorial nonlinearity covered by modern frequency methods such as Ayerman’s conjecture. Popov’s and circle criterion functional analysis approaches introduced to relate frequency and time-domain results. Other topics: describing functions, local and piecewise linearizations, limit cycle stabilities, some laboratory simulation using analog computers. Pre: 451 or equivalent.

652 Optimal Control (3) II (3L)
Yen
Optimal controls introduced through parametric optimization. Variational calculus and functional optimization: Pontryagin’s maximum principle with/without constraints; time optimal control and bang-bang systems, computational techniques of two-part boundary value problems: mathematical programming in optimal control; application to problems of space trajectory. OR and transportation concerns. Pre: 651.

653 Stochastic Control (3) I (3L)
Gaarder, Yen

655 Sampled-Data Control Systems (3) I (3L)
Granborg
Theory and application of sampled-data control systems: sampling and filtering theorems, z-transforms, modified z-transforms, digital compensation and stability, optimizations, application of state variable theory to sample-data systems, on-line digital computer systems. Pre: 451 or equivalent.

657 Hybrid Automatic Control Systems (3) II (3L)
Granborg

660 Computer Organization (3) II (3L)
Lichtenberger, Kuo
Detailed structure of a stored-program digital computer, mini-computer architecture, large-scale computers, parallel computers, pipeline machines, timesharing, computer nets. Pre: 461.

661 Theory of Digital Machines (3) I (3L)
Introduction to sequential switching circuit theory, theory of automata, and to mathematical theory of linguistics as it applies to automata. Pre: 461 or consent of instructor.

671 Electromagnetic Theory and Applications (3) I (3L)
Najita
Solutions and applications of Maxwell’s equations to radiation and propagation of electromagnetic waves. Pre: 372 or equivalent. Math 232 or equivalent.

691 Seminar in Electrical Engineering (1) I, II
Pre: graduate standing, consent of instructor.

692 Seminar (1) I, II
Pre: graduate standing, consent of instructor.

693 Special Topics in Electrical Engineering (3) I, II
Course content will reflect special interests of visiting and permanent faculty. Pre: consent of instructor.

699 Directed Reading or Research (v) I, II
Pre: graduate standing, consent of instructor.

800 Thesis Research (v) I, II
Pre: candidacy for M.S. or Ph.D. in electrical engineering.

300 Measurements Laboratory (2) II
Techniques of engineering measurements. Methods, instruments, computation and procedures. Applications to typical problems. Pre: junior standing in ME.

311 Thermodynamics (3) I, II

312 Applied Thermodynamics (3) I, II
Chou
Gas mixtures, generalized thermodynamic relationships, combustion and thermochemistry, chemical equilibrium, power and refrigeration cycles, properties of solutions, applications to physical and biological problems. Pre: 311.

321 Mechanics of Fluids (3) I, II
Cheng

322 Fluid Mechanics I (3) I
Fox, Kihara

323 Fluid Mechanics II (3) II
Fox, Kihara

331 Materials Science (3) I, II
Larsen-Basse
Behavior of materials as determined by structure and environment. Interrelationships between microscopic and macroscopic structure and phenomenological properties. Pre: Phys 274.

341 Materials Processing (3) I, II (2L, 1Lb)
Htun
Development, processing, fabrication of engineering materials. Energy requirements of various manufacturing methods and their effect upon material properties. Pre: 331.

371 Mechanics of Solids (3) I, II
Burgess
Analysis of deformable bodies. Definition of stress and infinitesimal strain. Linear elasticity. Stress, strain and deformation of simple bodies subjected to torsion, bending, and shear force. Pre: CE 270.

375 Introduction to System Dynamics (3) I, II
Burgess, Stuiver

400 Mechanical Engineering Experimentation (2) I
Munchmeyer

402 Computer Methods in Engineering (3) I, II
Cheng

403 Advanced Mathematics for Engineers I (3) I
Fand
Study of various mathematical techniques with emphasis on application to engineering: infinite series, nonlinear differential equations, linear differential equations and Laplace transform, algebra
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>496</td>
<td>Mechanical Engineering Topics (v) I, II</td>
<td>Burgess</td>
</tr>
<tr>
<td>499</td>
<td>Project (v) I, II</td>
<td>Kihara</td>
</tr>
<tr>
<td>511</td>
<td>Classical Thermodynamics (3) I</td>
<td>Burgess</td>
</tr>
<tr>
<td>512</td>
<td>Statistical and Nonequilibrium Thermodynamics (3) II</td>
<td>Fox</td>
</tr>
<tr>
<td>513</td>
<td>Advanced Thermal Environmental Engineering (3) I</td>
<td>Burgess</td>
</tr>
<tr>
<td>514</td>
<td>Advanced Materials Science (3) I</td>
<td>Kihara</td>
</tr>
<tr>
<td>515</td>
<td>Gas Turbine Power Plants (3) II</td>
<td>Chai</td>
</tr>
<tr>
<td>516</td>
<td>Design of Thermal Systems (3) I</td>
<td>Chou</td>
</tr>
<tr>
<td>517</td>
<td>Air Conditioning and Refrigeration (3) II</td>
<td>Chou</td>
</tr>
<tr>
<td>518</td>
<td>Gas Turbine Power Plants (3) II</td>
<td>Chai</td>
</tr>
<tr>
<td>519</td>
<td>Design of Thermal Systems (3) I</td>
<td>Chou</td>
</tr>
<tr>
<td>522</td>
<td>Heat Transfer (3) I, II</td>
<td>Kihara</td>
</tr>
<tr>
<td>524</td>
<td>Gasdynamics (3) II</td>
<td>Kihara</td>
</tr>
<tr>
<td>525</td>
<td>Introduction to Gasdynamics (3) II</td>
<td>Kihara</td>
</tr>
<tr>
<td>526</td>
<td>Electronic Processes in Materials (3) II</td>
<td>Larsen-Basse</td>
</tr>
<tr>
<td>527</td>
<td>Gas Turbine Power Plants (3) II</td>
<td>Chai</td>
</tr>
<tr>
<td>528</td>
<td>Heat Transfer (3) I, II</td>
<td>Fischer</td>
</tr>
<tr>
<td>529</td>
<td>Heat Transfer (3) I, II</td>
<td>Chai</td>
</tr>
<tr>
<td>530</td>
<td>Heat Transfer (3) I, II</td>
<td>Chai</td>
</tr>
<tr>
<td>531</td>
<td>Electric Processes in Materials (3) II</td>
<td>Larsen-Basse</td>
</tr>
<tr>
<td>532</td>
<td>Electrical Processes in Materials (3) II</td>
<td>Wheeler</td>
</tr>
<tr>
<td>533</td>
<td>Failures in Materials (3) II</td>
<td>Htun</td>
</tr>
<tr>
<td>534</td>
<td>Automatic Control (3) I</td>
<td>Stuiver</td>
</tr>
<tr>
<td>535</td>
<td>Nuclear Power Engineering (3) I</td>
<td>Chai</td>
</tr>
<tr>
<td>536</td>
<td>Marine Engineering (3) I</td>
<td>Munchmeyer</td>
</tr>
<tr>
<td>537</td>
<td>Design of Mechanical Elements (3) I (2L, 1Lb)</td>
<td>Kihara</td>
</tr>
<tr>
<td>538</td>
<td>Mechanical Engineering Design (4) II (2L, 2Lb)</td>
<td>Kihara</td>
</tr>
<tr>
<td>539</td>
<td>Mechanical Vibration and Shock (3) II</td>
<td>Chai</td>
</tr>
<tr>
<td>540</td>
<td>Fundamentals of Acoustics (3) I</td>
<td>Burgess</td>
</tr>
<tr>
<td>541</td>
<td>Advanced Mathematics for Engineers II (3) I</td>
<td>Fund</td>
</tr>
<tr>
<td>542</td>
<td>Air Conditioning and Refrigeration (3) II</td>
<td>Chou</td>
</tr>
<tr>
<td>543</td>
<td>Gas Turbine Power Plants (3) II</td>
<td>Chai</td>
</tr>
<tr>
<td>544</td>
<td>Design of Thermal Systems (3) I</td>
<td>Chou</td>
</tr>
<tr>
<td>545</td>
<td>Heat Transfer (3) I, II</td>
<td>Kihara</td>
</tr>
<tr>
<td>546</td>
<td>Gasdynamics (3) II</td>
<td>Kihara</td>
</tr>
<tr>
<td>547</td>
<td>Electronic Processes in Materials (3) II</td>
<td>Larsen-Basse</td>
</tr>
<tr>
<td>548</td>
<td>Failures in Materials (3) II</td>
<td>Htun</td>
</tr>
<tr>
<td>549</td>
<td>Automatic Control (3) I</td>
<td>Stuiver</td>
</tr>
<tr>
<td>550</td>
<td>Nuclear Power Engineering (3) I</td>
<td>Chai</td>
</tr>
<tr>
<td>551</td>
<td>Marine Engineering (3) I</td>
<td>Munchmeyer</td>
</tr>
<tr>
<td>552</td>
<td>Design of Mechanical Elements (3) I (2L, 1Lb)</td>
<td>Kihara</td>
</tr>
<tr>
<td>553</td>
<td>Mechanical Engineering Design (4) II (2L, 2Lb)</td>
<td>Kihara</td>
</tr>
<tr>
<td>554</td>
<td>Mechanical Vibration and Shock (3) II</td>
<td>Chai</td>
</tr>
<tr>
<td>555</td>
<td>Fundamentals of Acoustics (3) I</td>
<td>Burgess</td>
</tr>
<tr>
<td>556</td>
<td>Advanced Mathematics for Engineers II (3) I</td>
<td>Fund</td>
</tr>
<tr>
<td>557</td>
<td>Air Conditioning and Refrigeration (3) II</td>
<td>Chou</td>
</tr>
<tr>
<td>558</td>
<td>Gas Turbine Power Plants (3) II</td>
<td>Chai</td>
</tr>
<tr>
<td>559</td>
<td>Design of Thermal Systems (3) I</td>
<td>Chou</td>
</tr>
<tr>
<td>560</td>
<td>Heat Transfer (3) I, II</td>
<td>Kihara</td>
</tr>
<tr>
<td>561</td>
<td>Gasdynamics (3) II</td>
<td>Kihara</td>
</tr>
<tr>
<td>562</td>
<td>Electronic Processes in Materials (3) II</td>
<td>Larsen-Basse</td>
</tr>
<tr>
<td>563</td>
<td>Failures in Materials (3) II</td>
<td>Htun</td>
</tr>
<tr>
<td>564</td>
<td>Automatic Control (3) I</td>
<td>Stuiver</td>
</tr>
<tr>
<td>565</td>
<td>Nuclear Power Engineering (3) I</td>
<td>Chai</td>
</tr>
<tr>
<td>566</td>
<td>Marine Engineering (3) I</td>
<td>Munchmeyer</td>
</tr>
<tr>
<td>567</td>
<td>Design of Mechanical Elements (3) I (2L, 1Lb)</td>
<td>Kihara</td>
</tr>
<tr>
<td>568</td>
<td>Mechanical Engineering Design (4) II (2L, 2Lb)</td>
<td>Kihara</td>
</tr>
<tr>
<td>569</td>
<td>Mechanical Vibration and Shock (3) II</td>
<td>Chai</td>
</tr>
<tr>
<td>570</td>
<td>Fundamentals of Acoustics (3) I</td>
<td>Burgess</td>
</tr>
<tr>
<td>571</td>
<td>Advanced Mathematics for Engineers II (3) I</td>
<td>Fund</td>
</tr>
<tr>
<td>572</td>
<td>Air Conditioning and Refrigeration (3) II</td>
<td>Chou</td>
</tr>
<tr>
<td>573</td>
<td>Gas Turbine Power Plants (3) II</td>
<td>Chai</td>
</tr>
<tr>
<td>574</td>
<td>Design of Thermal Systems (3) I</td>
<td>Chou</td>
</tr>
<tr>
<td>575</td>
<td>Heat Transfer (3) I, II</td>
<td>Kihara</td>
</tr>
<tr>
<td>576</td>
<td>Gasdynamics (3) II</td>
<td>Kihara</td>
</tr>
<tr>
<td>577</td>
<td>Electronic Processes in Materials (3) II</td>
<td>Larsen-Basse</td>
</tr>
<tr>
<td>578</td>
<td>Failures in Materials (3) II</td>
<td>Htun</td>
</tr>
<tr>
<td>579</td>
<td>Automatic Control (3) I</td>
<td>Stuiver</td>
</tr>
<tr>
<td>580</td>
<td>Nuclear Power Engineering (3) I</td>
<td>Chai</td>
</tr>
<tr>
<td>581</td>
<td>Marine Engineering (3) I</td>
<td>Munchmeyer</td>
</tr>
<tr>
<td>582</td>
<td>Design of Mechanical Elements (3) I (2L, 1Lb)</td>
<td>Kihara</td>
</tr>
<tr>
<td>583</td>
<td>Mechanical Engineering Design (4) II (2L, 2Lb)</td>
<td>Kihara</td>
</tr>
<tr>
<td>584</td>
<td>Mechanical Vibration and Shock (3) II</td>
<td>Chai</td>
</tr>
<tr>
<td>585</td>
<td>Fundamentals of Acoustics (3) I</td>
<td>Burgess</td>
</tr>
</tbody>
</table>
Ocean Engineering (OE)

Department Office: Keller Hall 219-A

Professors: Bretschneider, Craven, Gerritsen, Parvulescu, St. Denis.

Researchers: Lee, O'Brien.

Associate Professors: Batthen, Seidl, Veneziano.

401 Introduction to Ocean Engineering (3) I Staff
Review of man's past, present and future ocean-oriented activities with particular reference to ocean engineering. Ocean engineering environments, materials and systems. Introduction to ocean systems design process.

403 Fundamentals of Ocean Engineering (3) I Bretschneider, Staff Fundamentals of ocean engineering, as they affect ocean engineering operations, design, construction, and maintenance problems. Pre: consent of instructor.

411 Buoyancy and Stability (3) I St. Denis, Venezian Ship nomenclature and geometry. Hydrostatic principles of surface ships in free-floating, partially waterborne and damaged conditions and of submerged bodies. Subdivision of ships. Launching. Pre: CE 270 or equivalent.


461 Coastal and Harbor Engineering I (3) I Gerritsen Solution of practical problems related to planning, design construction and maintenance of beaches, harbors and other coastal structures. Pre: consent of instructor.

601 Ocean Engineering Laboratory (3) SS Seidl, Veneziano Design, construction and evaluation of an ocean engineering system. Field experience supplemented with appropriate theory. Pre: consent of department.

603 Oceanography for Ocean Engineers (3) I Batthen, Bretschneider Discussion of the physical, chemical and geological ocean environments for ocean engineers. Description of the world's oceans and dynamic processes, introduction to analytical description, circulation, waves, tides and measurements. Pre: consent of instructor.


608 Statistical Analysis of Waves (3) II St. Denis, Veneziano The waves of the sea, their loading on coastal and ocean structures and the responses of these structures are all characterized as statistical process. Provides a grounding in the fundamentals of time-series and spectral analyses and experience in the application of such statistical methods to actual problems. Pre: 607.

609 Principles of Ocean Engineering (3) I Seidl 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.


614 Ocean Hydrodynamics Laboratory (2) II O'Brien, Seidl, Veneziano 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: 609 or Ocean 620.
621 Introduction to Ocean Acoustics (3) I
Parvulescu
Theory of sound. Measuring instruments and sound receivers. Sources of sound. Propagation of sound in the ocean. Applications of sound to oceanic measurements, detection, communication, navigation. Biological aspects of sound in the ocean. Pre: ME 474 or consent of instructor.

622 Sonar System Engineering (3) II
Parvulescu
Principles of design for sonar components and for the integration of components into a complete system. Signal theory, signal processing, transducers, properties of the channel, for passive and active sonars. Pre: ME 474, or OE 621, or consent of instructor.

623 Electroacoustics (3) I
Parvulescu
Theoretical and experimental study of acoustical transducers with emphasis on those used in the ocean environment. Pre: ME 474 or OE 621 or 622, or consent of instructor.

631-632 Structural Design of Ocean Systems I & II (3-3) Yr
Seidl, St. Denis
Design of ocean structures to withstand hydrostatic and hydrodynamic loading of the sea. Considerations include: type of material, factors of safety, proportioning of scantlings by elastic and plastic theories, stress concentrations, and fatigue. Application made to design of submarine pressure hulls, cargo ships and oceangoing platforms.

651 Instrumentation Seminar (2) I
Bathen, Bretschneider
Student literature. Research followed by oral and written presentation concerning the theory of sensor, construction, operation, performance, applications, limitations, costs, and availability of individually chosen marine instruments. Student presentations supplemented by faculty and invited lecturer presentations. Pre: graduate standing.

652 Nearshore Marine Survey Techniques (3) II
Bathen, Bretschneider
Introduction to the nearshore environment, planning and conducting field programs, reduction and analyses of data, presentation of results. Pre: consent of instructor.

662 Coastal and Harbor Engineering II (3) II
Gerritsen
Solution of practical problems related to planning, design, construction, and maintenance of beaches, harbors and other coastal structures. Pre: consent of instructor.

664 Sediment Transport, Littoral Drift and Dredging Technology (3) II
Gerritsen
Sediment transport in rivers, tidal inlets (estuaries), and along seacoasts. The effect of man-made structures on sediment transport. Discussion of dredging technology in coastal areas, including sand by-passing plants at harbors and tidal inlets. Pre: 609 or consent of instructor.

681 Ocean Systems (3) I
Craven
Fundamental concepts of system design, development and management. Technical problems associated with major subsystems including navigation, communication, environmental sensory power sources, platforms, logistics, terminals, etc. Pre: consent of instructor.

682 Design of Ocean Systems (3) II
St. Denis
Continuation of 681. Techniques developed for setting up and solving mathematical models for validating the technical feasibility of proposed concepts of ocean systems and for determining general design characteristic thereof. Designed to develop techniques for solving the interface problems which obtain when component systems are combined to form systems of ever greater scope and culminating in the system intended to fulfill an oceanic mission. Pre: 411, 412, 612 (last two may be taken concurrently).

683 Ocean Engineering Design Project (3) I, II
Staff
Actual design of ocean or coastal structures or systems. Student will work as an individual or in a team. He will carry the project from the evaluation of boundary conditions through the conceptual design toward the actual engineering design of the selected structure or system. Pre: consent of instructor.

691 Special Topics in Ocean Engineering (v) I, II
Staff
Course content will reflect special interests of visiting and permanent faculty. Pre: consent of instructor.

692 Seminar in Ocean Engineering (v) I, II, SS
Staff
Seminars by faculty, students, and invited lecturers from the engineering and scientific community. May be repeated. Sections may be designated for specific subjects.

694 Economics of Marine Resources (3) II
Comitini
Application of techniques of economic analysis related to the unique problems of utilization and development of marine resources. Topics include: economics of fisheries and other uses of the seas; institutional and legal aspects of ocean use; resource management and public policies regarding rational use of marine environment; development and rate of diffusion of marine technology. Pre: consent of instructor.

696 Topics in Ocean Engineering (v) I, II
Staff
Series of seminars on topics of current interest to the ocean-oriented engineering and scientific community. Lecturers will be members of the University faculty as well as invited lecturers from other universities, governmental agencies and private industry. Pre: graduate standing, consent of instructor.

699 Directed Reading or Research (v) I, II
Staff
Pre: graduate standing, consent of instructor.

800 Thesis Research (v) I, II
Staff
Pre: candidacy for M.S. or Ph.D. in ocean engineering.

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, geothermal energy, 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 University of Hawaii. This facility was the first structure to be established at 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; smallcraft harbor design.
The College of Health Sciences and Social Welfare comprises the four professional schools of Medicine, Public Health, Nursing and Social Work. The programs of the separate schools are integrated so far as possible, especially with a view to orienting students to common problems and the various approaches to solutions. Interdisciplinary courses, colloquia, institutes, and field experiences permit students to become acquainted with each other and with trends and developments in the four professions of the health care team. These interdisciplinary activities are proposed by a committee drawn from faculty and students of the four schools.

The School of Medicine, established as a two-year school in 1965, was authorized by the state legislature to expand to a full four-year M.D. degree granting institution in 1972 and is expected to enroll its first third-year class in 1973. In addition to the M.D. degree, study in the School also may lead to an advanced degree in 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 medical surgical nursing 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.
The School of Medicine was created in 1965 as increased interest developed in health education and research in Hawaii and the Pacific area. The first class was admitted in September 1967. The School was granted continued full approval and accreditation to the education program in the basic medical sciences and additionally, was granted provisional accreditation for its proposed program leading to the granting of the M.D. degree in 1972.

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. 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 School of Medicine.

SPECIAL REQUIREMENTS FOR ADMISSION TO THE SCHOOL OF MEDICINE

- Biology: 8 to 10 semester units; work through comparative anatomy, embryology, and the fundamentals of genetics is desirable.
- Chemistry: at least 16 units, including organic chemistry. Organic chemistry laboratory, quantitative analysis and physical chemistry are desirable.
- Physics: at least 8 semester units.
- Mathematics: work through pre-calculus. Elementary statistics is recommended.

Medical College Admission Test (MCAT): required of all medical applicants.

The first-year class is limited to 60 students. Applications are accepted for consideration from July 1 through December 15 for admission the following September.

Correspondence regarding admission should be directed to: Admissions Office, University of Hawaii School of Medicine, 1960 East-West Road, Honolulu, Hawaii 96822.

B. Non-medical Students

Applicants to the School of Medicine for admission to programs leading to the B.S., M.S., or Ph.D. degrees should fulfill the requirements 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 of the University.

Curriculum for Medical Students

Since expansion to an M.D. degree-granting school has been authorized by the state legislature, the third-year curriculum will be implemented in July 1973. Elective time is provided to allow development of special interests. In his first two years each student must do at least 1 unit of directed reading or research in an area in which he is particularly interested.

Students from the Pacific area with less than the usual preparation may be admitted under a special program in which the first two years work is spread over three years, or longer. With the help of the student adviser, the student is directed as to pace, and needed remedial work. Those who find excessive difficulty in medicine are directed into other health fields. Others who wish to combine work toward an M.S. or Ph.D. with the medical courses may elect a similar increase in time.

For further information, see Bulletin of the School of Medicine.
### Regular Curriculum

#### First Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Credits</strong></td>
<td><strong>Credits</strong></td>
</tr>
<tr>
<td>Cell Structure &amp; Function (Biomd 601)</td>
<td>2</td>
</tr>
<tr>
<td>Organ Structure &amp; Function (Biomd 603)</td>
<td>5</td>
</tr>
<tr>
<td>Microanatomy (Biomd 605)</td>
<td>2</td>
</tr>
<tr>
<td>Physiology Laboratory (Biomd 607)</td>
<td>1</td>
</tr>
<tr>
<td>Medical Biochemistry (Bicho 605)</td>
<td>2</td>
</tr>
<tr>
<td>Biochemistry Laboratory (Bicho 611)</td>
<td>1</td>
</tr>
<tr>
<td>Human Genetics (Genet 611)</td>
<td>2</td>
</tr>
<tr>
<td>Introduction to Human Behavior (Psyty 607)</td>
<td>2</td>
</tr>
<tr>
<td>Community Health Problems (PH 695)</td>
<td>1</td>
</tr>
<tr>
<td>Clinical Correlation (Med 601)</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

#### Second Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Credits</strong></td>
<td><strong>Credits</strong></td>
</tr>
<tr>
<td>Clinical Judgment (Med 611)</td>
<td>3</td>
</tr>
<tr>
<td>Clinical Conference (Med 671)</td>
<td>1</td>
</tr>
<tr>
<td>Human Pathology (Path 601)</td>
<td>4</td>
</tr>
<tr>
<td>Laboratory Diagnosis I (Path 649)</td>
<td>2</td>
</tr>
<tr>
<td>Tropical Medicine &amp; Medical Microbiology (TrMed 605)</td>
<td>6</td>
</tr>
<tr>
<td>Community Health Concepts &amp; Methods (PH 786)</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>19</strong></td>
</tr>
</tbody>
</table>

One unit of Directed Research (Course No. 699) must be completed by the end of the first semester, second year.

#### Third Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Medicine Clerkship (Med 710)</td>
<td>18</td>
</tr>
<tr>
<td>Pediatric Clerkship (Peds 710)</td>
<td>9</td>
</tr>
<tr>
<td>Psychiatric Clerkship (Psyty 710)</td>
<td>9</td>
</tr>
<tr>
<td>Obstetrics &amp; Gynecology Clerkship (ObGyn 710)</td>
<td>9</td>
</tr>
<tr>
<td>Surgery Clerkship (Surg 710)</td>
<td>18</td>
</tr>
<tr>
<td>Preceptorships</td>
<td>To be announced</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

#### Fourth Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Medicine Clerkship (Med 710)</td>
<td>18</td>
</tr>
<tr>
<td>Pediatric Clerkship (Peds 710)</td>
<td>9</td>
</tr>
<tr>
<td>Psychiatric Clerkship (Psyty 710)</td>
<td>9</td>
</tr>
<tr>
<td>Obstetrics &amp; Gynecology Clerkship (ObGyn 710)</td>
<td>9</td>
</tr>
<tr>
<td>Surgery Clerkship (Surg 710)</td>
<td>9</td>
</tr>
<tr>
<td>Primary Care Preceptorship (PH 710)</td>
<td>9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9</strong></td>
</tr>
</tbody>
</table>
Allied Medical Sciences

Division of Comparative Medicine (CpMed)
Office: Biomedical Science Bldg. T 201
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.

Division of Medical History (MedHx)
Professor: Judd.

606 Medical History (1) II Judd
Elective course in philosophy and history of medicine, with special reference to contributions from the Pacific Islands and Asia, and to the inter-relationships of historical, ethical, social, and scientific aspects of medicine.

699 Directed Research (v) I, II

Division of Medical Technology (MT)
Office: Snyder Hall 407
Professor: Bhagavan.
Associate Clinical Professor: Ho.
Assistant Professors: Sonoda, Taylor, Wulff.
Instructors: Goo, Kagawa, Kawamura, Kuroda, Nakamura, Torikawa.

The medical technology program leads to a bachelor of science degree in medical technology. The first two years 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 Pre-Med Tech as soon as possible. The last two years of the program are administered by the School of Medicine. Application to the medical technology program in the School of Medicine should be made early in the spring semester of the sophomore year.

An interning year leading to certification with the National Registry of Medical Technologists (ASCP) follows graduation and is spent in an American Medical Association approved hospital either on the mainland or here in a hospital affiliated with the University.

Degree Requirements
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 at least 36 hours of the major;
2. Offer at least 60 hours of credit in other than introductory courses, meeting the University core requirement;
3. Acquire an aggregate of 128 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 and related course required for the degree;
5. Submit an application for graduation to the office of admissions and records during the semester preceding the awarding of the degree.

Curriculum For Medical Technology

Freshman Year

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credits</td>
<td>Credits</td>
</tr>
<tr>
<td>Chem 113-115</td>
<td>Chem 114-116</td>
</tr>
<tr>
<td>Hist 151</td>
<td>Hist 152</td>
</tr>
<tr>
<td>Eng 100</td>
<td>Com 145</td>
</tr>
<tr>
<td>Math 134</td>
<td></td>
</tr>
<tr>
<td>MT 151</td>
<td>4</td>
</tr>
<tr>
<td>(Intro to Med Tech) ... 2</td>
<td>16</td>
</tr>
<tr>
<td>Electives</td>
<td>6</td>
</tr>
</tbody>
</table>

There is an accelerated one semester course in chemistry for especially well prepared students.

Sophomore Year

<table>
<thead>
<tr>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bio 220</td>
</tr>
<tr>
<td>Eng Lit</td>
</tr>
<tr>
<td>Chem 241-242</td>
</tr>
<tr>
<td>MT 251</td>
</tr>
<tr>
<td>(Intro to Med Tech) ... 2</td>
</tr>
<tr>
<td>Electives</td>
</tr>
</tbody>
</table>

Junior Year

<table>
<thead>
<tr>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biomed 301</td>
</tr>
<tr>
<td>Micro 351</td>
</tr>
<tr>
<td>MT 301</td>
</tr>
<tr>
<td>Phys 151-153</td>
</tr>
<tr>
<td>MT 302</td>
</tr>
<tr>
<td>Phys 152-154</td>
</tr>
</tbody>
</table>

Summer Session

<table>
<thead>
<tr>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT 366</td>
</tr>
</tbody>
</table>

Senior Year

<table>
<thead>
<tr>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Micro 461-462</td>
</tr>
<tr>
<td>MT 451 Hematology</td>
</tr>
<tr>
<td>MT 471-473</td>
</tr>
<tr>
<td>Clin Biochem</td>
</tr>
<tr>
<td>MT 457 Clin Lab</td>
</tr>
<tr>
<td>Instruments</td>
</tr>
<tr>
<td>MT 431 (Med Parasit or Zool 340)</td>
</tr>
</tbody>
</table>

*Freshman starting Fall 1973 will need to acquire an aggregate of 130 semester hours.
151 Introduction to Medical Technology I
(2) I, II
Taylor (Coordinator)
Designed to acquaint student with relationship of medical technology to the medical field.

251 Introduction to Medical Technology II
(2) I, II
Kuroda, Nakamura
Designed to acquaint student with basic principles of medical technology. Pre: one semester of college chemistry and sophomore standing or consent of instructor.

301-302 (397-398) The Clinical Laboratory
(3-3) Yr
Kuroda, Torikawa
Presentation of theory and practical application of clinical laboratory methods that the student will utilize in the summer internship course. 366. Introduction to MT-patient and MT-health team relationships. Pre: 251, Bioedm 301 (or concurrent registration), junior standing.

366 (466) Internship (2) SS
Internship in affiliated hospital. Pre: three years of prescribed courses, 301-302.

431 Medical Parasitology (3) II
Diagnosis of parasitic diseases by laboratory methods: outstanding features of life cycles, classification and medical significance of parasites. Pre: Micro 351 or consent of instructor.

451 Basic Hematology (3) I
Ho, Kagawa
Fundamental study of blood in normal and pathological states: formation, development, and classification of blood cells. Pre: 251, Micro 351, Biomd 301-302, or consent of instructor.

457-458 Clinical Laboratory Instruments
(3-3) Yr
Kawamura, Goo
Principles, applications, and use of instruments used in clinical laboratory measurement. Pre: college physics, credit or concurrent registration in clinical biochemistry, or consent of instructor.

464 Immunohematology (3) II
Taylor
Antigen-antibody relationships in human blood, study of blood groups, clinical problems in transfusion. Pre: Micro 461 or consent of instructor.

467-468 Internship (12-12) I, II

471-472 Clinical Biochemistry, Lecture (2-2) Yr
Bhagavan

473-474 Clinical Biochemistry, Lab (2-2) Yr
Sonoda

495 Special Topies in Med Tech (1) I, II
Taylor (Coordinator)
Designed to acquaint student with role of the medical technologist today. Emphasis placed on the overlap of major sciences in clinical situations that help student develop the qualities unique in a medical technologist.

499 Directed Reading and Research (v) I, II

601-602 Advanced Clinical Laboratory Methods
(4-4) Yr
Kawamura
Advanced techniques in instrumentation, current assay methodologies, and application of quality control both in methodology and instrument check systems. Pre: 457-458, or equivalent; consent of instructor.

690-691 Seminar in Medical Technology (1-1) I, II
Analysis of research and recent literature pertaining to various aspects of medical technology. Pre: consent of instructor.

695 Special Topics in Medical Technology (2) I, II
Current research, discoveries, inventions, methods, and/or techniques in clinical laboratory medicine. Pre: consent of instructor.

Division of Speech Pathology & Audiology (SPA)
Office: George Hall 113
Professor: Ansbery.
Associate Professors: McPherson, Pang-Ching.
Assistant Professor: Craven.

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, 315, 320, 321, 402, 410 and 411. Other specific requirements are: 6 credits in linguistics including course 470; 3 credits in mathematics: at least one course in speech which deals primarily with public speaking or discussion and provides practice in these areas (can be met by completing Speech 151 or 251); and, 9 credits in psychology beyond the basic course 100 including 110 and 113. A minimum of 124 semester hours of credit is required.

Prospective undergraduate and graduate majors should consult with the chairman, division of speech pathology and audiology for advice concerning their programs and obtain a copy of the outline of the programs in speech pathology and audiology. Students in the College of Education who wish to prepare themselves for work in this field will require special programs and should have similar consultations as soon as possible after initial enrollment. Graduate students should refer to the Graduate Division Catalog for additional pertinent information.

UNDERGRADUATE COURSES

300 Introduction to Speech Correction (3) I
Craven
Survey of field of speech correction: study of types of speech defects and hearing problems as they relate to speech dysfunctions.

301 Introduction to Audiology (3) I
Basic concepts: psychoacoustics, anatomy and physiology, measurement of hearing, rehabilitation of hard-of-hearing.

302 Methodology of Speech Correction (3) I, II
Craven

303 Testing of Hearing (3) I, II
Pang-Ching
Screening testing programs: conventional and special tests of hearing; interpretation of results; observations of clinical audiometry. Pre: 301.

315 Hearing Habilitation and Rehabilitation (3) II
Pang-Ching
Principles and methods of habilitation and rehabilitation of children and adults with hearing problems, means of developing maximum communication ability through auditory training, speech reading and other methods: educational and vocational training.

320-321 Speech and Hearing Science (3-3) Yr
McPherson
Anatomic, physiologic, phonologic, and acoustic bases of speech, hearing, and language; instrumentation and methods of speech and hearing science.

402 Pathology of Speech (3) I
McPherson
Etiology and symptomatology of speech and language disorders. Pre: 300, 302, 320-321.

410 Practicum in Speech Pathology (3) I, II
Craven, McPherson
Clinical practice in use of diagnostic procedures and rehabilitation techniques with a variety of speech disorders at various age levels. Pre: 300, 302, 320-321.
GRADUATE COURSES

411 Practicum in Audiology (3) I, II Pang-Ching
Clinical practice in testing of hearing, hearing conservation, auditory training, speech reading, speech correction and conservation. Pre: 301, 303.

600 Research Methods (3) I Pang-Ching
Research methods applicable to field of speech pathology and audiology; analysis and reporting of data; bibliography; contemporary research. Required of all graduate students.

602 Diagnostic Procedures in Speech Pathology (3) I Craven
Study of methods, tests, and instruments employed in the diagnosis of speech disorders.

603 Advanced Audiology (3) I Pang-Ching
Instrumentation; selection of hearing aids; special tests of hearing; vocational problems of individuals with impaired hearing. Pre: 301, 303 or equivalent.

610 Organic Disorders of Speech (3) Craven
Study of disorders of articulation, voice, rhythm, and language which result from organic anomalies with emphasis upon cleft palate, cerebral palsy, laryngectomy, and brain injury. (Offered every 3rd semester; offered Spring 1973.)

612 Functional Disorders of Speech (3) McPherson
Diagnostic and therapeutic approaches to disorders of speech which are primarily functional in nature—articulation, voice, rhythm, language. (Offered every 3rd semester)

613 Language Development for Children with Hearing Deficiencies (3) Pang-Ching
Language acquisition by hard-of-hearing and deaf children; methods of stimulating growth. (Offered every 3rd semester)

710 Advanced Practicum in Speech Pathology (3) I, II Craven, McPherson
Supervised clinical practice in diagnostic and therapeutic procedures with various types of speech and language problems and in different clinical settings.

711 Advanced Practicum in Audiology (3) I, II Pang-Ching
Supervised clinical practice in administering tests; interpretation of audiograms; counseling of individuals with impaired hearing; use of various rehabilitation techniques. Pre: 411 or equivalent, 603.

712 Advanced Practicum in Speech—Public Schools (6) I, II Craven
Supervised clinical practice in diagnostic and therapeutic procedures with children in the public schools who have speech and language problems.

720 Seminar in Functional Disorders of Speech (3) I McPherson
Advanced study of functional disorders of articulation, language, rhythm and voice. Emphasis on current literature in the area.

721 Seminar in Audiology—Diagnostic Procedures (3) II
Study of developments in diagnostic procedures as reflected in current literature covering those factors which assist in arriving at satisfactory diagnoses and prognoses.

722 Seminar in Organic Disorders of Speech (3) II McPherson
Advanced study of organic disorders of articulation, language, rhythm and voice. Emphasis on current literature in the area.

723 Seminar in Audiology—Rehabilitative Procedures (3) I
Procedures and philosophies presented in recent literature dealing with rehabilitative phases of audiology including selection and use of hearing aids, auditory training, speech reading, speech conservation and correction for individuals with hearing dysfunctions, educational and vocational counseling and training.

799 Research (4) I, II Craven, McPherson, Pang-Ching
(1) Speech Pathology; (2) Audiology. Required of all graduate students following the non thesis program (Plan B).

800 Thesis Research (v) I, II

Division of Stomatology (Stom)

The division of stomatology provides teaching of the diseases of the oral cavity and the treatment of these disorders. The relationship of the oral cavity to systemic conditions is stressed.

600 Stomatology (1) I, II Kanazawa, Staff
Series of discussions and clinical demonstrations of diseases indigenous to the oral cavity; oral manifestations of systemic diseases; systemic manifestations of oral diseases; temporomandibular joint syndrome; and the treatment of oral disorders.

699 Directed Research (v) I, II

Anatomy and Reproductive Biology (Anat)

Department Office: Biomedical Science Bldg. T 311

Professors: DeFeo, Diamond, P. Jacobs, Kleinfeld.
Associate Professors: Hoffmann, V. Jacobs, Yanagimachi.
Assistant Professors: Bryant, Teichman.

Instruction in the department of anatomy and reproductive biology is planned primarily to meet the needs of medical and graduate students but, insofar as facilities permit, all of the courses are open to other properly qualified third- and fourth-year undergraduate 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.

The department offers a master's degree at present, and the graduate program specializes in the area of reproductive biology. Programs combining work in anatomy and other fields of biology and medicine may be arranged.

602 Functional Human Anatomy (6) II Teichman, 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.

632 Reproduction and Sexuality (2) II Diamond, Staff
Lecture-seminar course to provide the developing professional with fundamental information facilitating his understanding and treatment of various subjects and problems related to human sex and reproduction. Pre: enrollment in medical school, or Graduate Division (with permission of instructor).

634 Experimental Methods in the Study of Reproductive Behavior (v) II Diamond
Individual research on endocrine and neural aspects of sexual behavior in experimental animals. Pre: one year of psychology; one year of zoology; consent of instructor.

699 Directed Research (v) I, II
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 of faculty member. Pre: consent of instructor.
Biology

Enzymology (2) Pre: 601-602. (All yrs: offered 1974-75)

Biochemistry

Medical Biochemistry 241 Fundamentals of Biochemistry (3) I

Cell Structure and Function (2) I

Endocrinology and Reproduction (2) II

Organ Structure and Function (5) I

Neuroscience (4) II

Microanatomy Laboratory (2) I

Endocrinology and Reproduction Laboratory (1) II

Physiology Laboratory (1) I

Section of Anesthesiology (Anes)

Professor: Pearson

The section of anesthesiology conducts clinical teaching in the discipline, and also research in the fundamentals and applications of the field.

Biochemistry (Bioch) and Biophysics (Bioph)

Department Office: Biomedical Science Bldg. T 705

Professors: Bhagavan, Gibbons, Greenwood, Guillory, Mandel, Mower, Piette, Yasunobu.

Associate Professors: Humphreys, Mann, McKay, Assistant Professors: McConn, McConnell, Morton.

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.

601-602 (or the equivalent) is prerequisite for all graduate work in this department.

BIOCHEMISTRY

241 Fundamentals of Biochemistry (3) I

Introduction to biological chemistry stressing the integration of the fundamental concepts of general chemistry, inorganic chemistry and biochemistry with broad application of these principles to the study of life chemistry and in health and in sickness.

341 Elements of Biochemistry (3) II

Description of biochemical principles and concepts as applied to living systems. Course will include sufficient organic chemistry necessary for an understanding of these principles.

441 Basic Biochemistry (v) I, II

Mandel, McConnell, Morton

Lectures on function and composition of biological substances and their metabolic transformation in animals, plants, microorganisms. Pre: Chem 113-114, 243, 244 or equivalent.

442 Basic Biochemistry Laboratory (1) II (ILb)

Morton

Experiments working with substances discussed in 441.

480 Introduction to Human Endocrinology (2) I

Greenwood

Introduction of endocrine system, structure, physiology, hormones as chemicals, their biological effects and regulation of secretion. Pre: 441 or consent of instructor.

481 Introduction of Molecular Biology (2) II

Mandel

Biochemical basis of life presented in terms of the structure and function of the gene in the production of biological catalysts. Pre: 441 or consent of instructor.

601-602 General Biochemistry

(3-3) Yr

McKay, McConn, McConnell

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.

605-606 Medical Biochemistry (2-2) Yr

Bhagavan

Survey of the field of biochemistry with particular emphasis upon contributions of this subject to the medical and biological sciences. Pre: acceptance in medical school, Chem 113-114, 243, 244 or equivalent.

611 Medical Biochemistry Laboratory (1) I (ILb)

Bhagavan

Selected physio-chemical and metabolic experiments to illustrate important principles of 605-606.

612 Medical Biochemistry Laboratory (1) II (ILb)

Bhagavan

Selected physio-chemical and metabolic experiments to illustrate important principles of 605-606.

613 General Biochemistry Laboratory (2) I (ILb)

McConn

Selected physio-chemical and metabolic experiments to illustrate important principles of 601-602.

620 Advanced Topics in Clinical Biochemistry (2) I

Staff

Discussion of principles and applications of advanced and newer methods in clinical biochemistry. Course will also include advanced instrumentation techniques, computerization of analytical methods and the principles of systems analysis. Pre: MT 471, 472, 473, 474; or Biochem 441; or Biochem 605-606.

671 Seminar (1) I, II

Staff

Weekly discussions and reports on various subjects: current advances in biochemistry and biophysics.

705 Special Topics in Biochemistry (2) I, II

Staff

Advanced treatment of frontiers in biochemistry. May be repeated. Pre: permission of instructor.

710 Special Topics in Enzymology (2) II

McKay, McConn

Selected detailed discussions on properties and mechanism of several important enzymes. Relaxation methods and their application in the study of enzyme kinetics. Pre: 601-602. (Alt yrs: offered 1974-75)

720 Bioenergetics (2) I

Guillory


730 Nucleic Acids and Viruses (2) I

Mandel


740 Advanced Protein Chemistry (2) I

Yasunobu


799 Directed Research (v) II

Students may register on approval of department.

800 Thesis Research (v) I, II

Approval of department faculty required.

BIOPHYSICS

601 Survey of Biophysics (3) Yr

Piette

Theory and application of various physio-chemical techniques used in molecular biology, including optical absorption, light scattering, magnetic resonance, ultra-centrifugation, viscometry, microscopy, circular dichroism and optical rotary dispersion. Pre: Chem 351-352 and Math 206.
Biomedical Science (Biomd)

Any member of the faculty of the School of Medicine may be involved in the teaching of these interdisciplinary courses.

Interdisciplinary graduate and undergraduate courses offered by the School of Medicine have been given Biomd numbers. These courses may, for example, provide more closely coordinated approaches to the teaching of complex structure function relationships than has previously been possible, or alternatively, may draw upon a wide range of faculty expertise to provide new course offerings. Currently listed interdisciplinary courses are as follows.

301-302 Introduction to Human Biology (4-4) Yr
(3L, 1 3-hr Lb) Whittow (Coordinator)
For undergraduates in the health sciences and other fields. Integrated presentation of human genetics, embryology, anatomy, and physiology. Pre: 1 yr. Biol or Zool, 1 yr. Chem, Biomd 301, or consent of instructor.

601 Cell Structure and Function (2) I Kleinfield (Coordinator)
Comprehensive course in cell biology (lectures only) for medical and graduate students. Pre: admission to medical school or consent of instructor.

602 Endocrinology and Reproduction (2) II Bryant (Coordinator)
Comprehensive survey of the anatomy, physiology and biochemistry of the endocrine glands (lectures only). Pre: admission to medical school or consent of instructor.

603 Organ Structure and Function (5) I Hong (Coordinator)
Integrated course (lectures only) for medical and graduate students, covering the fine structure and function of the major organ systems. Pre: admission to medical school or consent of instructor.

604 Neuroscience (4) II Rayner (Coordinator)
Integrated course of lecture and laboratory instruction for medical students in anatomy and physiology of the nervous systems. Pre: admission to medical school or consent of instructor.

605 Microanatomy Laboratory (2) I Jacobs (Coordinator)
For 601 and 603. Pre: admission to medical school.

606 Endocrinology and Reproduction Laboratory (1) II Bryant (Coordinator)
For 602. Pre: admission to medical school or consent of instructor.

607 Physiology Laboratory (1) I Moore (Coordinator)
For 603: Pre: admission to medical school or consent of instructor.

Community Health (PH)

(Affiliate from the School of Public Health)

Professor (Community Health): Tabrah.


Specialists: Bertelotti, Suehiro, Tilton, Wiederholt.

Associate Professors: Bell, Clark, R. Conway, Dickinson, Furuno, Hankin, Hayakawa, Johnson, Lenzer, Lim, Marvit.

Associate Specialist: Stewart.

Assistant Professors: Chum, Coffman, D. Conway, Stringfellow, Stein.

Assistant Specialists: Ho, Manner, O'Reilly.

Lecturer: Tokuyama.

The School of Public Health provides instruction to students in the medical school and serves the academic function of a department of community health for the School of Medicine.

The following courses are part of the required curriculum for medical students:

695 Community Health Problems (v) I Gilbert, Worth
Required for 1st-year medical students, elective for social work, public health, and nursing students (both senior honors and graduate students). Introduction to ascertainment and analysis of community health problems through supervised fieldwork of small interdisciplinary groups.

710 Primary Care Preceptorship (9) I, II Tabrah
Pre: third-year medical student or consent of instructor.

786 Community Health Concepts and Methods (2) II Worth, Gilbert
Limited to and required for 2nd-year medical students. Epidemiologic and statistical implications of clinical cases. Introduction to research design and biostatistical methods. Selected topics in social and preventive medicine.

For other elective courses, see Public Health catalog. Special attention is drawn to PH 665 Epidemiologic Management of Chronic Diseases, an interdisciplinary course appropriate for second year medical students.
The department of genetics offers courses at both the undergraduate and graduate levels. Genetics 352 is for non-biologists who are interested in genetics because of its sociological implications. 451 and 452 are designed for science majors who require a comprehensive course and laboratory covering major principles. Premedical, predental and preveterinary students may register for 611 Human Genetics, in the second semester.

The department offers the M.S., both Plan A and Plan B. Plan B is designed for those students who desire graduate training in human genetics but do not plan to become professional geneticists; for example, medical students registered under the 3-year option, medical laboratory technologists, and other paramedical professionals.

The Ph.D. may be taken without first acquiring the M.S., or may be taken after the Plan A. M.S.

352 Genetics, Evolution and Society (3) II Malecha
Role of genetics in evolution, medicine, behavior, plant and animal breeding, and technology: its impact on today's society.

451 Concepts of Genetics (3) I Malecha
Presentation of genetic concepts at an advanced undergraduate level; aspects of genetic transmission, recombination, gene action, and mutation; population and evolutionary genetics. Examples drawn from microorganisms, plants and animals including man. Pre: Biol 220 and 250 or equivalent.

452 Genetics Laboratory (1) I Vann
Experiments with a variety of organisms to illustrate principles of 451.

480 Molecular Genetics (3) II Hunt
Genetic principles at the cellular level as related by structure of proteins and nucleic acid to genetic fine structure, mutation, transfer of genetic information and control of development. Pre: 451 and one semester of biochemistry recommended, and consent of instructor.

499 Genetical Problems (v) I, II
Directed reading and research in genetics. Pre: 451 or 352.

604 Evolutionary Genetics (2) II Carson
Genetic changes involved in the processes of adaptation and in species formation. Pre: Biol 220 and 250 or equivalent (Alt yrs: offered 1973-74)

611 Human Genetics (2) I, II Rashad
Principles of genetics for medical students, and premedical and predental students. Because of limited facilities preference will be given to medical students in the first semester, and to other students in the second semester. Pre: registration in medical school or consent of instructor.

618 Cytogenetics (3) II (2L, 1Lb) Arakaki, Rashad

625 Advanced Topics in Genetics (2) I, II Staff
Advanced treatment of frontiers in genetics. Pre: graduate standing in genetics or consent of instructor.

650 Population Genetics (3) II Paik
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. Pre: 451; elements of calculus, probability and statistics.

Graduate Courses in Genetics Offered by Other Departments
Animal Sciences 652 Quantitative Genetics
Biochemistry 730 Nucleic Acids and Viruses
Biophysics 701 Molecular Structure and Function of Chromosomes
Biophysics 706 Molecular Structure and Function of Cell Organelles
Microbiology 475 Microbial Genetics

School of Medicine (Med)

The department assumes responsibility for assisting the student in integrating his learning in the humanities, social sciences, and the physical and biological sciences by confrontation with clinical situations. Thus, operational knowledge ranging from the structure and behavior of submolecular particles, through that of the whole human organism, to that of social interactions are correlated and brought to bear on the problems of health and disease and the individual patient.
Early attention is given to the student's acquisition of habits of continuing, critical and disciplined self-education, and basic clinical skills. These skills include collection and evaluation of data, systematic reasoning in case problem-solving, and consideration and perceptiveness in dealing with patients, their families, and other members of the health team.

The department also participates in internship and residency training programs in affiliated hospitals. The close association of the student with graduate physicians in these programs also affords valuable learning experiences.

Research in selected clinical fields, for which facilities are available, is fostered.

601 History-Taking and Physical Examination (2) I Blaisdell
Correlation of anatomy, biochemistry, genetics, physiology and public health with natural history of health and illness. Focus each week on patient cases demonstrating principles or application of material covered during the same week in nonclinical courses. Students guided by clinical tutors, with participation by clinical sub-specialists as appropriate. For first-year students. Pre: consent of instructor.

602 History-Taking and Physical Examination (2) II Blaisdell
Instruction through student participation with clinical tutors, and use of patients in the clinics and hospitals with emphasis on modern techniques and pathophysiologic basis of symptoms and signs. For first-year students. Pre: 601, consent of instructor.

611-612 Clinical Judgment
(3-3) Yr Gardner, Mamiya, Hale, McDermott, Bintliff
Clinical problem-solving with collection of data analyses of symptoms, signs, laboratory data and previous therapy; pathogenetic formulation; plan of management; oral case presentations; specialty sessions. Instruction coordinated with concurrent courses. For second-year students. Pre: 602, consent of instructor.

671-672 Clinical Conference
(1-1) Yr Gardner, Mamiya, Hale, McDermott, Bintliff
Presentation of patient-cases and discussion in depth by specialists, including visiting professors and non-clinical scientists with emphasis on multi-factoral determinants of illness, and the importance of quantitation in diagnostic and therapeutic evaluation. For second-year students, hospital housestaff and faculty. Pre: 602, consent of instructor.

699 Directed Research (v) I, II
Independent study in cardiology, endocrinology-metabolism, nuclear medicine, pulmonology, neurology, dermatology, nephrology, hematology, surgery, obstetrics-gynecology, pediatrics, radiology, and psychiatry. For first and second-year students. Pre: consent of instructor.

710 Obstetrics and Gynecology
Clerkship (9) I, II Hale (Coordinator)
Basic formulation in the practice of obstetrics and gynecology. Examination and diagnostic procedures, recognition and office treatment of common gynecological conditions and problems. Understanding of normal parturition and ability to handle uncomplicated procedures, recognition of obstetric abnormalities. Pre: third-year medical student or consent of instructor.

Pathology (Path)

Department Office: Biomedical Science Bldg. T 509-A

Professors: Hartroft, Hokama, Nishimura, Porta, Skinsnes.
Associate Professors: Lumeng, Yang.
Assistant Professors: Kobara, Paik.

Instruction in pathology is given to second-year medical students. The emphasis in the first semester will be general pathology which underscores important biologic events leading to reaction patterns of injury resulting from a variety of exogenous and endogenous etiologic factors. Systematic pathology, which is primarily concerned with the classification, causation and clinical correlation of diseases, will be offered in the second semester.

Elective courses in immunopathology and research are offered for advanced students and residents (M.D.) in specialty training (pathology).

601-602 Human Pathology (4-4) Yr Nishimura, Staff
625 Advanced Topics in Pathology (v) I, II Staff
Selected topics in general and experimental pathology in the areas of experimental oncology, granulomatous, hepatocty and nutritional diseases, immunobiology, and advanced anatomic pathology (surgical and autopsy pathology). Pre: consent of instructor.

649 Laboratory Diagnosis (2) I Lumeng, Staff
Theory and practical application of indications for and significance of laboratory examinations, with special reference towards interpretation of results. Clinical case material will be utilized for instruction of basic techniques and demonstrations in hematology, immunohematology, clinical chemistry, serology, and microbiology. Pre: consent of instructor.

670 Immunopathology Seminar (1) II Hokama
Autoimmune diseases and transplantation immunity. Pre: Micro 361 or 625 and Path 601.

699 Directed Research (v) I, II Staff

700 Research in Pathology Residency Program (v) I, II
Selected topics. Pre: M.D. degree and residency in pathology in affiliated hospital.

Section of Pediatrics (Peds)

Professor: D. Char.
Associate Professors: Bintliff, Hammar.
Assistant Professors: Melish, Philip, Starbuck.

The section of pediatrics provides teaching in pediatrics, particularly for the introductory clinical courses and assists hospitals and others in continuing medical and paramedical education. It cooperates with other departments in fellowship training.

710 Pediatric Clerkship (9) I, II Bintliff (Coordinator)
Clinical experience with a range of sick children, the impact of pediatric illness on families and society. Diagnostic and treatment competence will be acquired with respiratory, gastro intestinal, skin, and infectious diseases, behavioral disorders and congenital abnormalities. Concepts of health maintenance and delivery systems. Pre: third-year medical student or consent of instructor.

Pharmacology (Pharm)

Department Office: Biomedical Science Bldg. T 408

Professors: Furusawa, Lum, Norton, Shibata.
Associate Professors: Chou, Lenney, Miyahara.
Assistant Professors: Ramanathan, Read.
Junior Pharmacologists: Casarett, Kashiwagi.

The department of pharmacology offers the requisite work for medical students, and for 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 courses 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, physiology and pharmacology. Elective courses in pathology, microbiology, anatomy, chemistry and clinical medicine will be recommended.

The departmental policies in regard to examinations which are optional to fields of study are as follows: (1) general examination for the M.S. degree: not required, (2) final examination for the M.S. degree: required, (3) Ph.D. qualifying examination: not required. A minimum of 30 credits of course work is required for the Plan A, M.S. degree program of the department with 6 credits being derived from the thesis research work.

201 Introduction to General Pharmacology (2) I (2L) Lum, Staff
Drugs will be discussed with emphasis on sites and mechanism of action, toxicity, fate and uses of major therapeutic agents. Pre: mammalian physiology or consent of instructor.

203 General Pharmacology (3) I (3L) Lum, Staff
Similar to 201 but wider in scope of drugs discussed. Intended for undergraduates in the health sciences and related fields. Pre: mammalian physiology or consent of instructor.

600 Pharmacology: Actions and Uses of Drugs (7) II (6L, 1 Lb) Lum, Staff
Systematic consideration of history, chemistry, actions, dangers, fates, and uses of major classes of drugs in medicine. Adequate preparation in biology, chemistry, physics, and mathematics. Pre: consent of department.

613-614 Seminar in Pharmacology (1-1) Yr Lenney
Reporting and discussion of current research in pharmacology.

615 Toxicology (4) I or II (3L, 1 3-hr Lb) Staff
Basic description of toxicology according to systems and classes of substances. Principles of toxicology stressed in context with practical biomedical toxicological problems. Pre: consent of instructor. (Alt yrs; offered 1973-74)

631 Medicinal Chemistry & Structure-Activity Relations (3) I or II (3L) Norton
Organic chemistry of substances of medicinal value based on chemical classification. Chemical and physical properties will be related to pharmacological action. Pre: 600, organic chemistry. (Alt yrs; offered 1973-74)

634 Molecular Pharmacology (2) I or II (1L, 1 Lb) Chou, Lenney
Current knowledge regarding the action of drugs at the molecular level. Effects of drugs on cellular processes involving proteins, membranes, cell walls, and enzymes. Pre: biochemistry, physiology, and 600. (Alt yrs; offered 1973-74)

635 Experimental Chemotherapy (1) I or II (1L) Furusawa
Use of anticancer, antiviral and immunosuppressive drugs at clinical and investigative levels evaluated from the experimental bases of chemoprophylaxis and chemotherapy. Current articles and present work in the department introduced and discussed. Laboratory exercises optional.

637 Autonomic Nervous System Pharmacology (2) I or II (2L) Lum, Read
Emphasizes recent advances in field of autonomic physiology and pharmacology. The drug receptor concept, agonist antagonist interactions, chemical transmission as well as the pharmacodynamic effects of autonomic agents stressed. Pre: consent of instructor. (Alt yrs; not offered 1973-74)

639 Advanced Cardiovascular Pharmacology (2) I or II (1L, 1 Lb) Shibata
Actions of drugs on the cardiovascular system considered in appropriate detail including discussions on catecholamine metabolism, the effects of drugs on the biochemistry and electrophysiology of cardiac and vascular smooth muscle cells as well as discussion on selected aspects of comparative pharmacology of drugs which have actions on the cardiovascular system. Pre: consent of instructor. (Alt yrs; not offered 1973-74)

640 Neuropharmacology (2) I or II (1L, 1 3-hr Lb) Miyahara
Concerns physiology and pharmacology of the peripheral and central nervous systems with particular emphasis on the chemistry of synapses (neurohumoral transmitters) and on the modes of synaptic transmission. Mechanisms by which drugs affect the nervous system and how drugs can be employed as tools to elucidate mechanisms of functions also stressed. Pre: consent of instructor.
Physiology (Physl)
Department Office: Biomedical Science Bldg. T 608

Professors: Batkin, Hong, Rogers, Whitlow.
Associate Professors: Koide, Moore, Rayner, Strauss, Tracy, Woodard.
Assistant Professors: Gerencser, Hanna, Hart, Gillary, Lin, Nicholas, Smith.
Junior Researcher: Setliff.

The department of physiology offers undergraduate and graduate courses and provides a major input to those interdisciplinary courses (Biomd numbers) which are required for first-year medical students. 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 the graduate level Biomd courses, basic courses in related sciences (or demonstrated competence in these fields) plus advanced 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 physiology, pharmacology and biochemistry.

101 Introduction to Human Physiology (4 I (4L) Hanna
Review of human physiology intended primarily for associate degree candidates in the School of Nursing.

401 Human Physiology (3 I (3L) Hong
For graduate students in the health sciences and other fields. Presentation of basic function of the major organ systems in man. Pre: 2 yr biology or zoology, 2 yr chemistry, 1 yr physics, Biomd 301 and 302 or equivalent, or consent of instructor.

603-604 Seminar in Physiology (1-1) Yr
Discussion of current research in one or more areas.

605 Physiology of Nerve and Muscle (3 I Gillary, Rayner
Advanced course in the electrophysiology of nerve and muscle with emphasis on research technique. Pre: Biomd 601, 603, or consent of instructor. (Alt yrs; offered 1973-74)

606 Comparative Physiology of Thermoregulation (3 II (2L, 1Lb) Whitlow
Physiological and behavioral mechanisms by which the major groups of animals, including man, regulate body temperature, heat production, and heat loss. Detailed study of sweating, panting, peripheral blood flow changes, metabolism and behavior and their control by peripheral receptors and the central nervous system. Evolutionary aspects of temperature regulation. Pre: Biomd 603 or consent of instructor. (Alt yrs; offered 1973-74)

607 Biophysical Concepts in Physiology (2 I (2L) Gillary, Koide
Selected topics in biophysics and general physiology including membrane biophysics, transport mechanisms, thermodynamics, and systems analysis. Emphasis on physical research techniques in studying theoretical physiological mechanisms. Pre: Biomd 601, 603, 604 or consent of instructor. (Alt yrs; not offered 1973-74)

608 Advanced Renal Physiology (3 II (2L, 1 3-hr Lb) Hong
Comparative anatomy of the kidney, evolutionary significance of renal function, cellular mechanisms of tubular transports, various techniques to study renal functions, and the role of the kidney in maintaining homeostasis. Pre: Biomd 603 or equivalent. (Alt yrs; not offered 1973-74)

609 Advanced Cardiovascular Physiology (3 I (2L, 1 3-hr Lb) Lin
Selected topics in cardiovascular physiology. Emphasis on dynamic aspects of the heart and circulation. Pre: Biomd 603, 607. (Alt yrs; offered 1973-74)

611 Advanced Respiratory Physiology (3 I (2L, 1Lb) Strauss
Topics in mammalian respiration, including: mechanics of ventilation, pulmonary gas exchange, pulmonary circulation, matching of ventilation and perfusion, gas transport in blood, tissue gas exchange, regulation of ventilation, and behavior of the respiratory system under selected stress conditions. Pre: 603.

800 Thesis Research (v) I, II
In addition to the specific courses above, the department is involved in the following interdisciplinary Biomedical Science (Biomd) courses at the undergraduate and graduate levels.

Biomd

301-302 Introduction to Human Biology (4-4) Yr

601 Cell Structure and Function (2) I

602 Endocrinology and Reproduction (2) II

603 Organ Structure and Function (5) I

604 Neuroscience (4) II

605 Microanatomy Laboratory (2) I

606 Endocrinology and Reproduction Laboratory (1) II

607 Physiology Laboratory (1) I

Psychiatry (Psyty)
Department Office: Leahi Hospital

Professors: Bolman, W. Char, T. Maretzki, J. McDermott.
Associate Professors: Bolian, Tseng.
Assistant Professors: Cody, M. Hansen, Kinzie, Korsak, Markoff, Ponce.
Instructor: Arensdorf.

The department of psychiatry provides teaching, training, and service and carries on research in the field of psychiatry and behavioral sciences.

607 Introduction to Human Behavior (2) I Maretzki, Staff
Principles of human behavior, involving the complex interaction of biological, neurological, physiological, social, and cultural systems. Emphasis on application to the practice of medicine and doctor-patient relationship. Survey of general social and cultural factors influencing medical care. For first-year medical students. Pre: consent of instructor.

616 Psychopathology (2) II Char, Staff
Survey of psychiatric disorders with major emphasis placed upon those problems of contemporary social-medical importance viewed in developmental sequence and in cross-cultural perspective. For second-year medical students. Pre: consent of instructor.
Tropical Medicine & Medical Microbiology (TrMed)

Department Office: Leahi Hospital

Professors: Desowitz, Gaines, Halstead.
Associate Professors: Marchette, Siddiqui.
Assistant Professors: Diwan, Gubler, Schnell.
Instructor: Chow.

The department of tropical medicine and medical microbiology provides instruction in medical microbiology and tropical medicine for second-year students in medicine, in laboratory microbiology for graduate students in public health, and carries on research in the field.

Advanced work for the master's or doctor's degree is carried on under an interdisciplinary program with the School of Public Health.

499 Directed Reading and Research (v) Yr Desowitz, Gaines, Halstead
Directed reading and research in laboratory diagnostic aspects of bacterial, parasitic and viral infections. Pre: consent of instructor.

605 Tropical Medicine and Medical Microbiology (6) I Desowitz, Gaines
Instruction in laboratory and principles of medical bacteriology, virology, immunology, mycology, parasitology for second-year medical students. Pre: consent of instructor.

667B Laboratory Aspects of Viral Diseases (2) II Diwan, Halstead, Marchette
Lectures and practical training in laboratory techniques relating to the diagnosis of viral diseases. Pre: consent of instructor.

667C Laboratory Aspects of Bacterial Diseases (2) II Gaines
Lectures and practical training in laboratory techniques relating to the diagnosis of bacterial diseases. Pre: consent of instructor.

667D Laboratory Aspects of Parasitic Diseases (2) II Desowitz
Lectures and practical training in the public health aspects of laboratory techniques relating to parasitological diseases with special reference to the Pacific Basin. Pre: PH 666 and consent of instructor.

670 Clinical Aspects of Tropical Medicine (2) II Desowitz
Clinical, diagnostic and therapeutic aspects of tropical medicine with special reference to infectious diseases of the South Pacific Basin. Pre: consent of instructor.

699 Directed Research (v) Yr Desowitz, Gaines, Halstead
Directed research in medical microbiology (bacteriology, parasitology, virology) with special reference to infectious agents of the South Pacific Basin. Pre: consent of instructor.

799 Directed Reading (Public Health Microbiology) (v) Yr Desowitz, Gaines, Halstead
Directed reading in public health aspects of medical microbiology (bacteriology, parasitology, and virology). Pre: consent of instructor.
The School of Nursing offers programs to prepare students for professional nursing, associate degree nursing, and dental hygiene. The baccalaureate program in nursing began in September 1952 and the associate degree 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 associate degree nursing 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, and medical-surgical nursing. In addition to an area of specialization, each student selects a functional area of concentration in either teaching or nursing service administration.

Admission and Degree Requirements

Applicants for the dental hygiene program must meet University admission requirements.

Applicants for the associate degree program must have graduated from an accredited high school, and achieved a satisfactory score in college aptitude tests. Completion of a chemistry course and a life science course in high school is highly recommended. Women and men, married or single, may apply.

Applicants for the baccalaureate degree in nursing program must meet the University admission requirements. Further selection is made on the basis of scores on selected tests, quality of high school work, a grade-point average of 2.5 or better in 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 124 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 65 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 67 credits with a grade-point ratio of 2.0, and a minimum of C in each major course.
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.

In the associate degree and baccalaureate programs, each faculty member is assigned 4 to 10 students whom they will advise for the entire period that the student is in the program. As the student progresses from one nursing course to another, faculty responsible for teaching the course also provide advising as related to the specific course requirements. Students in dental hygiene have at least 2-3 academic advising conferences each semester. The counseling for academic courses is an ongoing process. Should a student not be able to contact his departmental adviser or because of the specific nature of his problem, he 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. The student graduates with a bachelor of science degree and is eligible to write the state examination for licensure as a registered nurse.

Pre-nursing students enroll in the College of Arts and Sciences and are admitted to the professional nursing cur-

riculum at the end of the sophomore year upon completion of a minimum of 64 credits with cumulative grade-point ratio of 2.5 in the liberal arts, including the following:

Pre-Nursing Requirements

General Requirements .................................................... 12
   English 100, 110, 120, 130, 140, 150, 160, or 170 (one course)
   History 151-152 or 161-162
   Mathematics or Philosophy 210 (or other course in
   Quantitative and Logical Reasoning)

Electives ........................................................................... 6

Humanities (One course in Group I; two courses from Group II or III) ............................................. 9
   I. English 251, 252, 253, 254, 255, or 256
   II. Philosophy 100, 200
       Religion 150, 200
   III. Art 101, 270, 280
       Music 160, 170, 180, 265, 266
       SS 133, Interdisciplinary Studies 203
       American Studies 201, 202
       Asian Studies 310
       Speech Communication 145 or 200

Social Sciences ................................................................. 15
   Human Development 231-232
   Psychology 100
   Sociology 100
   Social Science Elective

Natural Sciences ............................................................... 22
   Zoology 101
   Biochemistry 241 and 341
   Microbiology 130 and 140
   Biomedical Science 301-302

Total ................................................................................ 64

The pre-nursing requirements will also satisfy the general requirements of the University of Hawaii. General requirements, electives, and humanities courses may be taken on a credit/no credit basis.

Upper Division Requirements
The upper division curriculum in professional nursing consists of four 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 listed below.

Area Requirements
   I. Natural Sciences ....................................................... 3
      Food and Nutrition 475 (3)
   II. Nursing: Major Requirements .................................... 48
      Nursing 301-302 (3-3)
      Nursing 305-306 (7-7)
      Nursing 353 (3)
      Nursing 401-402 (3-3)
      Nursing 405-406 (8-8)
      Nursing 454 (3)
   III. Electives ................................................................. 9
      Electives from anthropology, psychology and sociology recommended.
      Statistics suggested for students planning graduate study.
      Total ........................................................................... 60
# Associate Degree Nursing Program

## Leading to an Associate of Science Degree in Nursing

The program in associate degree nursing covers four academic semesters and leads to the associate of science degree in nursing. It consists of a minimum of 65 semester credits with a balance of general education and nursing course work. The last 12 credits in nursing must be taken in the department of associate degree nursing. The School of Nursing reserves the right to withhold the degree or to request the withdrawal of any student for any reason deemed advisable by the faculty.

Graduates of the program are eligible to take the state examination for licensure as a registered nurse. They are prepared for staff positions in hospitals, clinics, doctors’ offices and private duty.

### First Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 100-170</td>
<td>Micro 130, 140</td>
</tr>
<tr>
<td>History 151 or 161</td>
<td>History 152 or 162</td>
</tr>
<tr>
<td>Math/Phil 210</td>
<td>Zoology 101</td>
</tr>
<tr>
<td>Biochemistry 241</td>
<td>Biochemistry 341</td>
</tr>
<tr>
<td>Psych 100</td>
<td>Sociology 100</td>
</tr>
<tr>
<td><strong>Credits</strong></td>
<td><strong>Credits</strong></td>
</tr>
<tr>
<td>15</td>
<td>17</td>
</tr>
</tbody>
</table>

### Second Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Development 231</td>
<td>Human Development 232</td>
</tr>
<tr>
<td>Biomedical Science 301</td>
<td>Biomedical Science 302</td>
</tr>
<tr>
<td>English 251, 252, 253, 254, 255 or 256</td>
<td>Social Science Elective</td>
</tr>
<tr>
<td>Humanities Elective</td>
<td>Elective</td>
</tr>
<tr>
<td>Elective</td>
<td>Elective</td>
</tr>
<tr>
<td><strong>Credits</strong></td>
<td><strong>Credits</strong></td>
</tr>
<tr>
<td>16</td>
<td>16</td>
</tr>
</tbody>
</table>

### Third Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nursing 301</td>
<td>Nursing 302</td>
</tr>
<tr>
<td>Nursing 305</td>
<td>Nursing 306</td>
</tr>
<tr>
<td>Nursing 353</td>
<td>Food &amp; Nutrition 475</td>
</tr>
<tr>
<td>Upper Division Elective</td>
<td>Upper Division Elective</td>
</tr>
<tr>
<td><strong>Credits</strong></td>
<td><strong>Credits</strong></td>
</tr>
<tr>
<td>16</td>
<td>16</td>
</tr>
</tbody>
</table>

### Fourth Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nursing 401</td>
<td>Nursing 402</td>
</tr>
<tr>
<td>Nursing 405</td>
<td>Nursing 406</td>
</tr>
<tr>
<td>*Statistics Course or Upper Division Elective</td>
<td>Nursing 454</td>
</tr>
<tr>
<td><strong>Credits</strong></td>
<td><strong>Credits</strong></td>
</tr>
<tr>
<td>14</td>
<td>14</td>
</tr>
</tbody>
</table>

*Statistics is required for University of Hawaii graduate programs and for most other graduate programs.

### Program for Registered Nurses

Registered nurses who have completed the general and pre-nursing requirements listed above with a grade-point average of 2.5 or better may enroll in the professional nursing 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.

An enrolled student who has a grade-point average of 2.5 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 “Credit by Examination.”) Application for credit by examination for nursing courses is made at the time of acceptance into the Baccalaureate Program. Challenge exams are scheduled during the summer.

### Two-Year Program in Dental Hygiene

#### Leading to a Certificate in Dental Hygiene

The program is planned to provide for the education and preparation 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

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry 113</td>
<td>Chemistry 114</td>
</tr>
<tr>
<td>Chemistry 115</td>
<td>Chemistry 116</td>
</tr>
<tr>
<td>Dental Hygiene 121</td>
<td>Dental Hygiene 140</td>
</tr>
<tr>
<td>Dendal Hygiene 131</td>
<td>Dental Hygiene 150</td>
</tr>
<tr>
<td>English 100</td>
<td>Dental Hygiene 166</td>
</tr>
<tr>
<td>Physiology 101</td>
<td>Food &amp; Nutrition 285</td>
</tr>
<tr>
<td>Microbiology 130</td>
<td>Microbiology 140</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>Total Credits</strong></td>
</tr>
<tr>
<td>17</td>
<td>15</td>
</tr>
</tbody>
</table>

### Summer Session*

<table>
<thead>
<tr>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychology 100</td>
</tr>
<tr>
<td>Speech 145</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
</tr>
<tr>
<td>6</td>
</tr>
</tbody>
</table>
SCHOOL OF NURSING

Second Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharmacology 201</td>
<td>2</td>
</tr>
<tr>
<td>Dental Hygiene 251</td>
<td>2</td>
</tr>
<tr>
<td>Dental Hygiene 267</td>
<td>2</td>
</tr>
<tr>
<td>Dental Hygiene 269</td>
<td>2</td>
</tr>
<tr>
<td>Dental Hygiene 279</td>
<td>5</td>
</tr>
<tr>
<td>Dental Hygiene 281</td>
<td>2</td>
</tr>
<tr>
<td>Sociology 100</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>14</td>
</tr>
</tbody>
</table>

*It is required that all students in dental hygiene complete the standard Red Cross First Aid course during the first year. A copy of the Red Cross certificate must be filed in the office of the chairman of the department of dental hygiene.

Dental Hygiene (DH)

Department Office: Webster Hall 216

Associate Professor: Nobuhara.
Assistant Professors: Koga, Quong.
Instructor: Butler.

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 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 Oral Anatomy and Tooth Morphology (4) I
Anatomy of teeth, bones of skull; muscles of mastication, tongue, face, pharynx; glands of oral cavity; cranial nerves, blood vessels of head and neck; laboratory procedures in drawing and carving of anterior and posterior teeth. Pre: Chem 113, 115, Phys 101 or concurrent registration.

140 Introduction to Dental Prophylaxis Procedures and Techniques (2) II (1L, 2Lb)
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

166 Introduction to Human Pathology (1) II
Basic causes, progress and termination of disease. Emphasis of defense mechanisms of body. Pre: 150 or concurrent registration.

251 Dental Histology and Embryology (2) I (2L, 1Lb)
Formation, structure and function of enamel, dentin, cementum, pulp, periodontium, alveolar process, gingiva. Pre: 150.

267 Oral Pathology (2) I
Study of oral diseases of concern to dental hygienist. Pre: 166, 251 or concurrent registration.

269-270 Survey of Dentistry (2-3); (2L, 1Lb); (3L, 3Lb)
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 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 Dental Hygiene and Prophylaxis (5-5), I, II
(3L, 1 L 3-hr Lb)
Clinical experience in dental prophylaxis; topical application of fluorides: medical-dental history; oral inspection; charting; roentgenographs: patient education; emergency first aid.

281 Dental Roentgenography (2) I (2L, 2Lb)
Lecture-laboratory course in study, technique, use and application of roentgen ray to dentistry.

Nursing (Nurs)

Department Office: Webster Hall 411

Professors: Anderson, Bermosk.
Associate Professors: Gross, Lum.
Assistant Professors: Chase, Fong, Kim, Kubo, Love, Norby, Shimamoto.
Instructors: Alonso, Burkhalter, Choy, Dunwell, Ohno, Severson.

Registration is restricted to students preparing for nursing except by special permission.

301 Nursing Core I (3) I
Basic concepts common to all areas of nursing practice which provide basis for understanding man as a system and his usual responses to the health-illness phenomena. Focus on patient system and introduction to the nurse-patient system. Interventions to maintain system stability including introduction to nursing process and nurse-patient relationships. Pre: acceptance into the department of professional nursing.

302 Nursing Core II (3) II
Concepts related to system in threatened stability or instability, applicable in all areas of nursing practice. Pathophysiologic and psychologic processes which lead to threatened stability or instability. Nursing interventions to restore system stability. Pre: 301, 305.

305 Clinical Nursing I (7) I
Clinical applications of basic concepts introduced in 301 and introduction to basic nursing skills. Planning and implementation of nursing care using the nursing process to maintain man’s system in balance in face of illness. First half of 305 in the clinical laboratory focuses on learning basic nursing skills in a general medical-surgical setting. Second half of 305 introduces community health nursing experience and offers clinical practice in one of three areas: adults, children, and maternal-newborn. Focus on application of core concepts in the specific area and concurrent clinical content describing variables specific to each area which influence nursing care. Pre: acceptance into the department of professional nursing.

306 Clinical Nursing II (7) II
Clinical application in remaining two clinical areas (of three described in 305) and an introductory experience in a mental health setting with focus on development of a therapeutic nurse-patient relationship. Use of nursing process to maintain and/or restore system stability. Pre: 301-302, 305.

353 Perspective on the Nursing Profession (3) I
Study of the nursing role and the occupation of nursing. Focus is on student’s view of his chosen field and developing image of himself as a becoming professional. Historical, legal, and sociological factors influencing the role and self-concept of the nurse examined.

399 Directed Reading or Research (v) I, II
Limited to juniors and seniors in nursing.

401 Nursing Core III (3) I
Basic core concepts related to the health care system as they affect patients/families such as primary, secondary, tertiary care. Nursing interventional techniques such as the multi-disciplinary approach to care and health teaching. Pre: 301-302 or consent of instructor.
402 Nursing Core IV (3) II
Basic core concepts related to the nurse in the care of groups of patients. The use of the group process, leadership principles in achieving quality nursing care for patients. Pre: 301-302, 401 or consent of instructor.

405-406 Clinical Nursing III and IV (8-8) Yr
Clinical applications of core concepts in Nursing 401-402. Two semester course with progressively advanced practice in assessment, planning intervention and evaluation of nursing problems with patients, families and groups of patients. Clinical areas of practice in mental health, community health and medical-surgical settings. Demonstration of leadership concepts through quality patient care. Pre: 305-306.

454 Nursing in the Changing Social Order (3) II
Study of nursing in its relationship to the overall health delivery system. Social and economic influences on health care and implications of these for nursing practice and leadership.

602 Orientation to Nursing Research (3) II
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 Seminar on Issues in Nursing (3) I or II
Study of factors relevant to understanding different conceptual models and philosophical approaches to nursing and the influences of legislation and demographic and social forces.

615 Interaction Processes (3) I, II Bermosk, Chase
Interviewing, interpersonal dynamics and communication theories related to nurse-patient interactions; process recording and process analysis. Lecture-discussion, student presentations, field work.

617 Concepts and Nursing Practice (3) I
Exploration of a conceptual approach to nursing practice.

622 Advanced Nursing Concepts I, Mental Health-Psychiatric Nursing (4) II Bermosk
Application of behavioral concepts to nursing interventions; exploration of the social system and study of modalities of treatment. Pre: 615, 655.

626 Advanced Nursing Concepts I, Medical-Surgical Nursing (4) II
Study of the pathologic physiology of patients with medical and surgical problems requiring hospital and associated institutional services. Pre: Physiol 601, N617.

655-656 Advanced Psychiatric Concepts (3-3) I, II
Theories of modern dynamic psychiatry related to personality development and functioning. Principles of psychopathology, major mental illness and methods of treatment. Lecture, student presentations, participant observation.

730 Advanced Nursing Concepts II, Mental Health-Psychiatric Nursing (4) I Bermosk, Chase

732 Advanced Nursing Concepts III, Mental Health-Psychiatric Nursing (4) II Bermosk, Chase
Exploration of family therapy concepts and formulation of nursing interventions into maladaptive family behaviors, community, international and cross-cultural psychiatry. Pre: 731.

735 Advanced Nursing Concepts II, Medical-Surgical Nursing (4) I
Continuation of an analysis of alteration in body physiology and the implications for nursing practice. Pre: 626, Physiol 602.

736 Advanced Nursing Concepts III, Medical-Surgical Nursing (4) II
Culminating evaluation of normal physiology and the consequences of pathologic physiology and the interrelation of process and knowledge base in the clinical specialist role. Pre: 735.

743 Concepts of Leadership in Nursing (3) I or II Norby
Concepts of behavioral sciences applicable to nursing leadership, development of leadership skills, effect of leadership styles on group development.

747 Curriculum Development (3) I or II Gross
Development of philosophy and objectives for educational programs, curriculum design, content, teaching methods and evaluation.

748 Seminar and Practicum in Teaching/Administration (4) II Anderson
Designed to prepare the student to coordinate theory and its application as a beginning teacher. Pre: fulfillment of prior requirements for the teaching minor.

790 Directed Study or Research (v) I, II
Directed study of problems related to nursing theory and practice. Open only to 2nd-year graduate students.

Associate Degree Nursing (ADN)

Department Office: Webster Hall 423

Assistant Professors: Grant, Johnson, Lo, Najita.

53 Nursing I (5) I
Study of basic principles of nursing and fundamental skills in patient care. Opportunities to practice skills provided in School of Nursing laboratory and other health agencies in the community. 3 hours lecture and 8 hours laboratory per week.

54 Nursing II (8) II
Study of child-bearing and child-rearing periods of man's life cycle using family-centered approach. Opportunities provided to care for patients in variety of maternal-child facilities. 4 hours lecture and 12 hours laboratory per week. Pre: 53.

55-56 Nursing III and Nursing IV (8-8) Yr
Study of major physical and mental health problems of adults using the needs approach. Opportunities provided to care for patients in medical-surgical and psychiatric facilities. 55: 4 hours lecture and 12 hours laboratory per week. 56: 3 hours lecture and 15 hours laboratory per week. Pre: 54.

58 Nursing V (2) II
Study of development of nursing, future trends in nursing and socio-economic influences on nursing. To be taken concurrently with 56. 2 hours lecture per week.
The School of Public Health, one of 18 accredited U.S. schools of public health, received its accreditation in October 1965. It was established in July 1962 as a department of public health within the graduate school. The School's objectives are not only to prepare persons who will conduct research and contribute to the enlarging base of knowledge in the basic sciences pertinent to public health. The School offers a wide range of programs designed to meet the needs of a varied student body. In addition to basic work in public health common to all students in the School, candidates are expected to pursue intensive work in a selected area of emphasis within the public health field. The broad areas of program emphasis offered are: administration (including comprehensive health planning, health services administration, public health administration); environmental health (including environmental management, environmental sanitation, public health engineering); international health (including international health and population/family planning studies); personal health services (including maternal and child health/mental retardation, mental health, gerontology); public health education; quantitative health sciences (including biostatistics, epidemiology, public health laboratory, public health nutrition). Program content may combine more than one area of emphasis for eligible students. Such expanded programs will usually require an additional semester of study.

A limited number of traineeships may be available for qualified students who demonstrate a career interest in public health practice. Traineeships are awarded on a competitive basis from available funds. In many cases traineeship funds are for specially designated areas of emphasis. The status of traineeship availability varies greatly from year to year.

Master of Public Health Degree

The M.P.H. program is designed to prepare persons for a variety of careers in the broad field of public health at local, state, national, and international levels. The degree candidate must meet the minimum admission requirements of the Graduate Division. Depending upon the area of emphasis selected, different undergraduate preparation may be required; in some cases, at least two years of health or related work experience is also required. A candidate's total curriculum is developed with the approval of his program committee. All candidates must complete 30 or more semester hours, including PH 791. A final examination or other final requirement as determined by the student's program committee must be completed before graduation. In some cases, degree requirements may involve up to two years of residence. (Refer to School of Public Health Bulletin.)
Master of Science Degree

The M.S. program is intended to provide students with a research-oriented education in a specific area of emphasis. A degree candidate must have at least a bachelor's degree from an accredited institution; his undergraduate record should show adequate preparation in the biological, physical and social sciences. Additionally, at least two years' work experience in a health-related field is desirable. The program may require up to 24 months; both Plan A and B are available. In Plan A the minimum course requirement is 30 semester hours, including 6 credits for thesis research. A final oral examination on the thesis and related subjects is required. In Plan B, 30 or more semester hours, including PH 791, are required; a final examination or other final requirement as determined by the student’s program committee must be completed before graduation. (Refer to School of Public Health Bulletin.)

Public Health (PH)

School Office: Biomedical Science Bldg. D 208


Specialists: Bertellotti, Suehiro, Tilton, Wiederholt.

Associate Professors: Bell, Clark, R. Conway, Dickinson, Furuno, Hankin, Hayakawa, Johnson, Lenzer, Lim, Marvit.

Associate Specialist: Stewart.

Assistant Professors: Chun, Coffman, D. Conway, Stringfellow, Stein.

Assistant Specialists: Ho, Manner, O’Reilly.

Lecturer: Tokuyama.

Students in fields other than public health, including unclassified, generally should obtain the instructor's approval prior to registration.

401 History and Philosophy of Global Public Health (2) I
Multi-disciplinary series of lecture/discussions on health as a basic human right; an account of history of public health throughout the ages. Ecological approach to better world health pervades the course. Public health presented as an integral part of social and cultural evolution; economics of health also considered.

601 Medical Care Systems (3) I, II
Staff
Consideration of forms in which medical care services are organized; interpretation of need and demand for medical care; types, numbers, nature, relationships of medical institutions and manpower; financing medical care; national plans for medical care.

602 Supervision and Leadership in Health Services (1) I
Staff
Methods of personnel supervision and leadership modes of specific applicability of health and medical programs, work scheduling and personnel practices.

603 Legal Basis for Health Services (1) II
Staff
Exploration of constitutional and other bases for regulation of public health; aspects of administrative law including disclosure, confidentiality; consent, interference with person and property, permits and licenses, search and inspection, abatement, seizure and liability.

604 Principles of Organization of Health Services (2) I
Consideration of organizational structure in theory and practice in the health industry; policy determination in health organizations; organizational change and innovation; professional and public relations.

605 Personnel Practices in Health Services (2) I
Staff
Development, deployment and utilization of health manpower; personnel management practices including recruitment, placement and retention; labor relations; staff and executive development.

606 Economics of Health Service (3) II
Coffman
Economic analysis as a basis for individual and social decision making; supply and demand aspects of health and medical activities.

607 Seminar in Health Services Administration (1)
Advanced study of current issues and problems related to social and bureaucratic organization of health services, direction of health programs, and planning and integration of health services.

609-610 Public Health Organization and Administration (3-3) Yr
Emphasizing problem-solving approaches and interdisciplinary perspectives, participants consider the nature of man and his environment, and the interactions of them as they affect man's health. In groups small enough to permit individualization, materials studied include techniques of problem diagnosis, measurement, and of organization, implementation and evaluation of community response. Current, emerging and future public health problems explored, and innovative techniques and the leadership and commitment needed to solve such problems sought.

611 Information Systems and Planning (3) I, II
Systems analysis approach to public activity problems; problem identification, information sources, hypothesis testing, predictive and prescriptive models, and evaluation of results. Investigation of public issues in Hawaii and elsewhere as related to health, social and political prerogatives. Geographic investigation of differences in planning and information systems. Pre: consent of instructor.

612 Ecological Concepts and Planning (3) I, II
Staff
Concepts of human ecology as bases for environmental management planning with emphasis on comprehensive health planning. Pre: consent of instructor.

613 Seminar in Comprehensive Health Planning (3) 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.

614 Political Aspects of Policy Planning (3) I
Povey
Political aspects of policy planning, including examination of planning as a conflict-resolution process; the value framework within which decisions are made, problems involved in goal determination, comprehensiveness, individual choice, resource allocation, organization and participation; utilization of planning processes in effecting policy changes.

616 Basic Concepts of International Health (3) I
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 Seminar in International Health (2) II
Suehiro, 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.
623 Behavioral Science Basis of Mental Health (3) I Markvit
Presentation of the current state of social science-public health concepts used in developing model for understanding basic issues in mental health and illness. Approach is illustrative and provides frame of reference in areas as brain function, learning, group dynamics, etc., for man's relationship to his environment. Background provided will be helpful to students taking other mental health courses. Pre: consent of instructor.

624 Community Mental Health (3) II Markvit
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.

625 Mental Health Aspects of Population and Its Control (3) I, II Stein

627-628 Epidemiology and the Assessment of Mental Health (2-2) Yr Markvit
Review of studies utilizing epidemiologic method to understand control mental illness; critical analysis of specific applications in areas such as alcoholism and suicide made concurrently with latest theoretical concepts in etiology of mental illness which resulted from epidemiologic research; methodology of classification of the ill and disabled; applications of data systems to services. For mental health majors who will work with comprehensive health planning.

629 Dental Public Health (2) II Staff
Principles of conservation of oral structures and prevention of dental diseases through dental health programs. Pre: consent of instructor.

631-632 Public Health Nutrition (3-3) Yr Hankin, Staff
Methods of assessing dietary intakes and nutritional status of populations and of identifying nutrition problems. Nutrition programs for selected age groups and persons with special needs living in various socio-cultural and economic conditions. Concurrent observations of nutrition activities in Hawaii and development of community nutrition project during second semester. For students who will be directing public health nutrition programs. Pre: PH nutrition majors or consent of instructor.

633 Seminar in Public Health Nutrition (2) II Hankin
Selected nutrition problems in preventive medicine and public health in Southeast Asia and Pacific Basin. Pre: PH nutrition majors or consent of instructor.

634 Nutrition Problems and Applied Programs (2) I D. Conway, Staff
Review of major health and social welfare problems with nutrition components and practical methods for solving them. Designed for health, social welfare and paramedical workers who will be using nutrition services or integrating nutrition in related activities. Pre: College of Health Sciences and Social Welfare majors or consent of instructor.

635 Concepts and Practices in Hospital Dietetics (3) SS Hankin, Ho, Staff
Observation and participation in administrative, therapeutic, and teaching activities of dietary departments of private and governmental hospitals in Hawaii. Designed for B.S. trainees with major in foods and nutrition and no dietetics experience. Provides background for consultation to hospitals, nursing homes, and day care centers. Pre: MPH nutrition majors and consent of instructor.

638 Care of Long-Term Patients (3) II Stewart
Interdisciplinary consideration of the process of care for the adult patient with chronic illness or disability. Emphasis on medical and social needs of long-term patients and how these needs are met in the community. For students in public health, medicine, nursing, social work and other health related fields.

639 Gerontology (3) I, II Lenzner, Stewart
Interdisciplinary consideration of the aging process, problems of the aged, attitudes toward old people. Considers how current knowledge about aging can be applied in various fields of professional practice. For students in public health, medicine, nursing, social work and other fields where practitioners deal with old people.

642 Maternal and Child Health I (2) I Smith, Staff
Basic principles and practices in maternal and child health programs.

643 Maternal and Child Health II (2) II Stitt, Staff
Advanced course in maternal and child health. Pre: 642.

644 The Handicapped Child (2) II Smith, Stringfellow
Problems and programs relative to children with handicapping conditions.

645 Principles of Comprehensive Maternity Care (2) I Stringfellow
Objectives and organization of comprehensive maternity care from public health viewpoint. Pre: 642 or consent of instructor.

646 Health Services for the Mentally Retarded (2) II Furuno
Etiology, prevention, management, community programs for mentally retarded. Pre: consent of instructor.

649 Population and Family Planning (3) I, II
Survey of some of the diverse but interrelated issues involved in the study of population/family planning.

650 Demography and World Population Problems (3) I Matsumoto
Introduction to study and description of human populations, including recent trends in world populations. Pre: consent of instructor.

651 Fertility and Reproduction (2) I, II Pion
Historical and contemporary methods of fertility control. Pre: consent of instructor.

652 Components of Population Control (2) II Matsumoto
Ecological considerations of factors involved in human population dynamics. Pre: consent of instructor.

654 Vital and 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.

655 Biostatistics I (3) I Bennett
More theoretical treatment than 654 of elementary statistical concepts and methods of analysis of vital and health statistics. Pre: Math 134 or equivalent or consent of instructor.

656 Biostatistics II (3) II Chung
Extension of 655. Further treatment of estimation and tests of hypotheses, analysis of variance and covariance, multiple regression and correlation as related to public health problems. Pre: 655 or consent of instructor.

658 Seminar in Biostatistics (1) II Chung, Staff
Discussion of specific problems in biostatistics as related to public health.

659 Techniques in Demographic Analysis (3) 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. Pre: 654 or 655.

663 Principles of Epidemiology (4) I Dickinson, Staff
Epidemiological principles and methods. Basic research methodology course of the School. Variable credits offered: (1 cr.) basic principles and methods, plus; (2 cr.) interpretation of existing data, or (3 cr.) research design and production of data. Pre: 654 or 655 (concurrent) or consent of instructor.

665 Epidemiological Management of Chronic Diseases (2) II Banta
Epidemiological factors which must be considered in designing programs for early detection, treatment, control and rehabilitation of chronic diseases. Designed for College of Health Sciences and Social Welfare students. Pre: 663 or 786 or consent of instructor.
666 Epidemiology of Infectious Diseases in the Pacific Area (3) I Worth, Staff
Systematic presentation of existing knowledge of important infectious diseases in Pacific area. Emphasis on epidemiology, ecology and public health concepts rather than clinical aspects of each disease. Pre: 654 or 655 or consent of instructor.

667 Laboratory Aspects of Infectious Diseases in the Pacific Area (3) I Halstead, Staff
Lectures and practical training in public health aspects of laboratory techniques relating to infectious diseases of the Pacific Basin. Three sections: 667B (Viral Diseases), 667C (Bacterial Diseases), 667D (Parasitic Diseases). Pre: 666 and consent of instructor.

670 Socio-Cultural Aspects of Health and Illness (3) I, II Wolff
Public health practices and orientation in socio-cultural perspective. Pre: consent of instructor.

673-674 Education and Community Health (3-3) Yr Grossman, Hayakawa
Focuses on scope and nature of educational social action processes in public health. Major elements include theory and practice of work with community groups, educational planning and evaluation, application of social and behavioral science concepts to public health practice. Lab work includes neighborhood-based group project (1st semester) and individual placements in selected community areas (2nd semester). Emphasis throughout on health educator as community worker. 673-674 taken concurrently with 675 (1st semester) and 676 (2nd semester).

675 Group Methods in Public Health (3) I, II Golden
Consideration of theory and practice of group development as educational aspect of community public health efforts. Lecture on theory of group process and relevance of group behavior to personal and organizational change in public health settings. Lab on group process analysis and application of theory to group problem-solving.

676 Communication Processes in Public Health (3) II Clark, Golden
Consideration of communication theory and application to public health practice. Review of research in mass communication and related areas. Problems in selection and use of communication techniques with emphasis on communication processes in community and health organization contexts.

678 In-Service Training of Health Workers (2) I, II Bertelotti
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.

679 Educational Approaches to Public Health Problems (3) I, II Clark, Grossman
General survey course for non-majors covering theory and practice of health education as applies to specific areas of public health concern. Two lectures and one seminar per week; seminars organized around student interests in application of educational approaches to specific problem areas like family planning, medical care, health maintenance and consumer education.

681 Environmental Health (3) I, II Johnson
Characteristics of disease associated with environmental factors, means of transmission, principles of control of such environmental stresses.

682 Vector Control in Environmental Health (3) II Johnson
Organization, administration, application of vector control methods in the control of diseases of environmental significance.

683 Occupational Health I (2) II Johnson
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.

685-686 Solid Waste Management and Control (3-3) Yr Chun
Organization and operation of solid waste systems and programs at federal, state, and local government levels. Reviews laws, ordinances and regulations as well as relationship of solid waste disposal to air and water pollution control. Pre: completion of or concurrent registration in CE 638 or consent of instructor.

687 Sampling and Analysis of Solid Wastes (4) I Chun
Methods of sampling and analyzing solid wastes to determine their physical, chemical and bacteriological characteristics. Pre: concurrent enrollment in 685, consent of instructor.

688 Design of Solid Waste Disposal Facilities (4) II Burbank
Design of storage, collection, transfer and disposal facilities for solid wastes. Pre: 685 and concurrent enrollment in 686 or consent of instructor.

695 Community Health Problems (v) I Gilbert, Worth
Required for 1st-year medical students, elective for social work, public health or nursing students (both senior honor and graduate students). Introduction to ascertainment and analysis of community health problems through supervised fieldwork of small interdisciplinary groups.

701 Seminar in Medical Care Organization (2) II Staff
Advanced study of current and emerging issues in the organization of delivery and financing systems for health and medical care, with specific emphasis on the articulation of high quality services. Pre: 601 or consent of instructor.

702 Principles of Fiscal Management for Health Services (2) I Staff
Budget-making and the budgetary process in public and private health services; capital development and planning; fiscal reporting and grants management; Planning-Programming-Budgeting System; procedures of fiscal management as administrative controls.
703 Planning and Evaluation of Health Services (3) II Conway
Management science and its application to the establishment and evaluation of medical care systems and facilities.

704 Institutional Health Care Facilities (3) I Conway
Principles and practices relating to organization and function of general and special hospitals, extended care facilities, nursing homes and other health facilities.

705 Non-Institutional Health Care Facilities (2)
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.

706 Case Studies in Health Service Administration (2) I Conway
Detailed analysis of selected administrative cases with view towards applying a wide spectrum of general principles and concepts of management to diagnosis and solution of administrative problems.

707 Health Program Planning and Evaluation (3) I, II Michael
Review of process, key sequential events and management tools involved in health program planning and evaluation as applied to governmental and non-governmental organization and health facilities; development of planning strategy, P-P-B selection of goals and objectives, selection of alternate tactics, documentation, executive decision, execution, feedback and evaluation. Pre: consent of instructor.

724 Mental Abnormality and the Law (2) I Marvit
Focus on behavioral types of individuals considered sick or immoral by majority of society's controlling elements, e.g., juvenile delinquency, the psychopath. Examination of current views on causation, treatment, prevention. Consideration of various types of mental abnormality creating characteristic problems for the legal and/or correctional process. Analysis of points of conflict between "role of psychiatry and rule of law" through study of clinical material. Visits to institutions and participation in psychiatric staff conferences. Pre: consent of instructor.

736 Seminar on Health of the School-Age Child (2) I Stitt
Health needs of school-age children with emphasis on the health problems which may present obstacles to learning processes. Particular consideration given to impact on community institutions and role and responsibility of personnel in the delivery of services to children.

741-742 Family Planning Programs (3-3) Yr Lim
Examination of all aspects involved in organization of a family planning program including planning and policy making, funding training, personnel, delivery of services, communications recording, research and evaluation.

747 Statistical Techniques in Epidemiological Research (3) II Bennett
Introduction to design, data processing, analysis of epidemiological studies of non-infectious diseases with emphasis on computer applications.

749 Sampling Techniques in Public Health (3) I Bennett
Methods appropriate for sample surveys in public health and medical fields. Use of random, stratified, cluster or systematic sampling illustrated with current surveys of human populations.

755 Staff Development in Health Systems (3) II Golden, Hayakawa
Consideration of concepts, skills and practice of organizational development and renewal as they apply to public health systems. Designed to develop competency in educational strategies of organizational diagnosis, planned change, intervention theory and practice and consultation required to assist in coping with changing goals and technology. Emphasizes design of training activities to meet system-wide needs of health organizations in areas as personal growth, managerial styles, team development in temporary systems, inter-group collaboration and problem-solving.

771 Environmental Control of Disease Through Food Protection (2) I Burbank
Organization, administration, application of sanitary methods used to investigate and control food-borne diseases of environmental significance.

772 Environmental Factors in Health Problems (3) I Burbank
Introduction to air pollution, occupational diseases, industrial hygiene; particular reference to common industrial processes, presence and recognition of hazards associated with them, evaluation of hazards; methods of determining effectiveness of control measures. Pre: CE 638 or consent of instructor.

773 Measurement of Environmental Factors (3) II Chun
Use of instrumentation for collection, identification and/or measurement of environmental hazards including, but not limited to, air pollutants, radiation, light, sound and noise. Pre: completion of or concurrent registration in 772 and consent of instructor.

786 Community Health Concepts and Methods (2) II Worth, Gilbert
Limited to and required for 2nd-year medical students. Epidemiologic and statistical implications of clinical cases. Introduction to research design and biostatistical methods. Selected topics in social and preventive medicine.

791B thru 791R Advanced Public Health Practice (3) I, II, SS
Observation, study and additional practical work in student's area of emphasis. Limited to public health degree candidates only. Pre: consent of instructor.

791B Adv. PH Practice: Biostatistics
791C Adv. PH Practice: Comp. Hlth. Planning
791D Adv. PH Practice: Env. Management
791E Adv. PH Practice: Env. Sanitation
791F Adv. PH Practice: Epidemiology
791G Adv. PH Practice: Gerontology
791I Adv. PH Practice: International Hlth.
791J Adv. PH Practice: Maternal & Child Health
791K Adv. PH Practice: Mental Health
791L Adv. PH Practice: Mental Retardation
791M Adv. PH Practice: Pop. & Family Plan. Studies
791O Adv. PH Practice: Public Hlth. Education
791P Adv. PH Practice: Public Hlth. Engineering
791Q Adv. PH Practice: Public Hlth. Laboratory
791R Adv. PH Practice: Public Hlth. Nutrition

792 Seminar in Public Health (v) I, II, SS
Advanced seminar in selected public health topics. May be repeated for credit. Pre: consent of instructor.

799 Directed Reading/Research (v) I, II, SS
Pre: consent of instructor.

800 Thesis Research (v) I, II, SS
Pre: consent of instructor.
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. Each student is assigned a faculty adviser. The function of the adviser is to help the student plan his program to bring about maximum coordination in use of class and field curriculum in order to enhance the student's total educational experience.

The School operates the Social Welfare Development and Research 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. It was reaccredited in 1971. For specific information on admission and degree requirements write: School of Social Work, Hawaii Hall 117, 2500 Campus Road, Honolulu, Hawaii 96822.

Social Work (SW)

School Office: Hawaii Hall 117

Professors: Aptekar, Gochros, Kurren, Merritt, Polemis, Walsh.
Associate Professors: Fischer, Krisberg, Kumabe, Kutchins, Lister, Nagoshi, Sanders.
Instructors: Chamberlin, Erhart, Ibrahim, Okazaki.

GRADUATE PROGRAM

603-604 General Social Work Practice (3-3) Yr
Designed to give the student a basic understanding of all forms of social work practice. Focused on the social worker in action with individuals, families, groups, neighborhoods, organizations and communities.

605-606 Social Work Practice with Individuals and Groups (3-3) Yr
This course in the practice of social casework and group work provides a foundation for succeeding courses. Introduction to basic principles and processes as related to social work practice in these two fields. Considerable emphasis placed on understanding the individual in a family or group situation. Societal factors which may impinge on the problem considered. Methods of helping individuals having problems in social functioning are related to understanding of personalities of individuals involved and their interrelationships.
607-608 Social Work Practice in Community Organization (3-3) Yr
Community work practice sequence in the first year organized around three major themes: strategies for developing and maximizing community participation for effective problem solving; assessing the realities of organizational need and influencing their response to change; knowledge and skill in developing and utilizing community indigenous personnel as workers.

610-611 Human Development and Behavior in Cross-Cultural Perspective (2-2) Yr
Designed to provide the student with opportunity for comparative study of individual physical, mental, and emotional growth, giving special emphasis to social and cultural influences on the individual's development.

620-621 Integration Seminar (1-1) Yr
Designed to enable the student to see the interrelationships of field and classroom instruction. Also serves to bring together into a coherent whole the student's simultaneous experience in areas of social policy and services, behavioral studies, practice courses and social welfare research.

626 Prevention and Treatment of Juvenile Delinquency (2) I
Focus on major problems, issues, and developments in field of juvenile delinquency in the United States with related emphasis on local scene; juvenile justice system; social planning approach to delinquency; new and innovative treatment techniques.

627-628 Policies and Services in World Social Welfare (2-2) Yr
Societal needs, policies with respect to them, and planned services are principal themes in this year-long course. Comparative analyses of social welfare policy, programs, and services in the U.S.A. and other countries. Focus on social forces, problems, and issues; philosophies of governmental and voluntary responsibility.

651 Introduction to Scientific Method and Research Principles in Social Work (2) I

652 Research Methodology in Social Welfare and Social Work (2) II
Application of probability analysis in social research, including identification of research questions, development of hypotheses, consideration of cause-effect relationships, types of design, collection and analysis of data, tests of significance, relationship of research results to practice. Includes reading of one or two research studies.

655-B Futuristic Considerations in Social Work (3) I
Emphasis on predicting future social developments in a complex world, identifying desirable alternatives, selecting social work procedures appropriate to social change efforts. Major theme deals with long-range over short-range intuitive decision making.

656-B Social Welfare Change Through Legislation (3) II
Introduction to the social worker's change role through the use of the legislative process. Includes a review of social needs and problems, the legislative process per se and study of basic skills necessary in making appropriate social work input into the legislative process for the enactment of social welfare legislation.

656-C Problems in Human Sexuality & Reproduction (3) I, II
Survey of problems associated with human sexuality and reproduction. Emphasis is placed on the influence of culture, and the range of individual differences in sexual and reproductive attitudes and behavior. Intended primarily for those in the helping professions.

660-661 Practicum (3-3) Yr
Field units are maintained by the School in public and voluntary welfare agencies, as well as in governmental departments of various types. In such units students receive instruction related to their school experience with social problem situations. Provides an opportunity for the student to see the applicability and experience the use of concepts and principles in actual practice.

703-704 General Social Work Practice (2-2) Yr
Designed primarily to broaden and deepen understanding of the student who has taken 603-604. Practicum is held in a different setting, and problems of individuals, families, groups, organizations and communities are analyzed from standpoint of the mature practitioner. Skills required for problem-solving examined in greater detail than in the first year and each student is required to compare his own professional functioning with that of less experienced and more experienced workers.

720-721 Integration Seminar with Director of Field Work and Advisers (1-1) Yr
Designed to enable the student to see interrelationships of field and classroom instruction. Also serves to bring together into a coherent whole the student's simultaneous experience in areas of social policy and services, behavioral studies, practice courses and social welfare research.

753 The Law and Social Welfare and Social Work (2) II
Principles of law with which the social worker should be familiar. Problems in judicial administration and substantive law that affect individuals in relation to social problems.

755-B Social Work Practice with Sex Related Problems (3) I, II
Application of social work skills and services to problems associated with human sexuality. Treatment and prevention stressed equally, with emphasis on formats for sex education for all ages in various settings. Students will bring to the course problems they meet in practice.

755-C Contributions of Psychiatry to Social Work Interviewing (3) I, II
Focus on the process and techniques of social work interviewing. Utilize discussions, process recording of the students interviews, films, video tapes, and audio playing. In order to best meet students' needs, the exact format will be decided in conjunction with the students who elect the course. First-year students not eligible.

755-D Family Planning and Family Life (3) I
Overview of the field of family planning within the context of family life planning. Focus is on the impact of family size and family planning on the family structure and on the health and well-being of the changing or non-family unit. Selected social-health problems examined in relation to dynamics of sexuality and reproduction, which influence contraceptive behavior. Particular emphasis given to the role of social work in the delivery of family planning services within the framework of the socio-cultural forces which affect development of family policies and programs.

755-E Experiential Training in Human Relationships (3) I, II & SS
Focus on intensive laboratory experience with the goal of increasing interpersonal skills for therapeutic purposes. Emphasis on three dimensions: warmth, empathy and genuineness. By the end of the course, participants expected to be functioning at higher levels of these three dimensions. Much of the course will deal with actual practice experiences, using role playing, video and audio tapes, and other modalities.

755-F Issues and Theories in Casework & Psychotherapy (3) I
Review and analyze major approaches to casework and psychotherapy. The primary purpose is to familiarize students with the range of issues and theories, and to provide an analytic framework which will aid in the assessment of diverse approaches, and serve as a guide for integrating several clinical perspectives in social work practice.

756-B Seminar in Family Planning and Family Life (3) I
Continuation of 755D, focus of this course is on the application of knowledge gained from the first semester course to the provision of family planning services. Specific problem situations encountered in the client system's use of services and in the service delivery system examined, and consideration given to a variety of modes of interventions. Special emphasis given to the role of pregnancy and contraceptive counseling within the context of family life planning. Differences in counseling functions among the members of the multi-disciplinary team are also examined.
756-C Behavior Modification with Children (3) II
Intended to familiarize students with basic principles and techniques of operant behavior modification. Focus on application of behavioral approaches to the problems of children and families. The course proceeds through four stages: basic principles, assessment, intervention, and evaluation.

760-761 Practicum (v-v) Yr
Instruction in the field continued. Second-year practicum provides opportunity for the student to test out concepts, principles and theories which he has acquired and to develop his own individual manner of using them in actual practice.

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
Continuation of first year practice with individuals and groups with emphasis on processes of casework. Focus on differential diagnosis and treatment. Collaboration and consultation. Emphasis given to family diagnosis and treatment. Opportunity to study and evaluate related theories and treatment approaches.

766 Seminar in Social Casework (2) II
Students have responsibility for the presentation, analysis and evaluation of material from their field experiences. Generic aspects of social work as related to casework practice in diverse settings demonstrated. Opportunity to study and assess adaptations and innovations in practice in a variety of local settings. Synthesizes, deepens and enriches the student's past learning, and emphasizes the flexible and adaptive use of core casework concepts.

767 Casework with Children (2) I
Casework concepts and practice in the care of children in various settings. Special areas of child welfare, such as protective services, child placement, treatment of children in institutional settings, etc., explored.

770 Advanced Social Group Work (2) II
Further emphasis on the needs of individuals in groups and analysis of the group worker's activity in groups with a treatment focus.

771 Seminar in Social Group Work (2) II
Analysis and evaluation of case material contributed from student's experience and selected records. Presentation of papers on current issues in group work. Study and assessment of various models for work with groups.

774-775 Studies in Individual and Social Behavior (3-3) Yr
Provides students with opportunities to select for intensive review and critical analysis areas of theory and research in human behavior which are of particular interest to individual students and of relevance to social work practice. Goals of the course are both mastery of a substantive body of knowledge, and the ability to utilize specific criteria for the evaluation of theory and research.

776 Social Work and Social Psychiatry (3-3) I, II
Discussion class with occasional guest lecturers. Content will include such issues as the therapeutic contract, descriptive diagnosis of psychopathological entities, etiology, psychodynamics, and alternative approaches to therapy. Readings consisting of selected texts and articles.

777-778 Planning, Policy-Making and Administration in Social Welfare (2-2) Yr
Analysis of Social Planning Ideology; Social Planning as an action process including goal and strategy formulation, program design and implementation, monitoring and evaluation of programs. Translation of social policies into administrative action is stressed throughout.

780 Administrative Methods in Social Work (2) I

781-782 Seminar in Community Organization Processes (2-2) Yr
Content extending over 2 semesters, intended to provide student with the opportunity to learn theoretical bases, knowledge areas, and methods for social work practice in community development and organization.

Course content organized sequentially in relation to three major areas of knowledge and practice: organizing at the neighborhood level, the political processes in community decision making, and social work manpower development.

785 Methods of Supervision in Social Work (2) II
Supervision in social work as it relates to practice. Supervision as way of accomplishing goals of the agency. The administrative aspect of supervision as an important component. Also considers education or training as part of supervisory method. Emphasis on helping the supervisor use social work knowledge and skills in new ways. Open to agency workers who are potential or actual supervisors, and as an elective to second-year students who are going into supervisory positions. Pre: consent of instructor.

794-795 Group Research Project (3-3) Yr
Principles of objective fact-finding, primary and secondary sources of social data, organization of material, relationship to an advisory committee or expert technical consultant and preparation of report.

796-797 Directed Individual Study in Substantive Field (v) Yr (Child Welfare, Social Work in Health Settings, et al)
Students, on the basis of mutual interest, will select a faculty member to work with on a problem for which planned individualized study is deemed advisable.

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
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
Purpose and philosophy governing establishment and operation of social welfare programs. Interrelationship of social, cultural, political, economic factors in development of social welfare. Junior standing.

305 Community Planning and Development in Social Welfare (3) II
Current trends in community welfare planning programs. Material from fields of social work, sociology, social psychology, others. Pre: 300-301 (or with consent of instructor concurrently with 301.)

310 Research Development in Social Welfare (3) I, II
Scientific methods in problem identification and resolution introduced. Analysis of landmark research and demonstration projects completed in various fields of practice examined.

315 Social Work Methods (3) I
Analysis of techniques most commonly used in social work practice. Casework, group work, community organization, administration, research. Open to seniors. Pre: 300-301.

321 Social Work with Juvenile and Adult Offenders (3) I
Study of social welfare resources and institutions for treatment of offenders. Pre: 300-301.

335-336 Seminar in Social Welfare (4-4) Yr
Social work as a part of social welfare explored with emphasis on generic aspects of social work, the problems it attempts to deal with, and role of the professional person in it. Community needs and resources studied. Class and field experience combine to assist student in learning about social work methods, in making sound career choices, and in learning beginning practice skills.

340-341 Practicum (4-4) Yr
Students receive instruction related to their school experience with social problem situations. Provides opportunity for student to see the applicability and experience the use of concepts and principles in actual practice.
The College of Tropical Agriculture provides students with a well-rounded education and a professional competence in agriculture and related industries and in human resources development. There are agricultural curricula in technology, economics, science, and pre-veterinary medicine with various majors, as detailed, to fit the individual student's needs.

Four curricula are offered in human resources development: fashion design, textiles and merchandising, home economics, food and nutritional sciences, and human development.

All curricula lead to the bachelor of science degree.

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 Human Resources Development.

Admission and Degree Requirements
Requirements for admission are the same as those for the University. Students who lack some of this required preparation are unable to follow regular programs and may need more than four years to complete degree requirements.

To be eligible for the degree a student must:
1. Complete the general requirements prescribed by the University (p. 34);
2. complete the course requirements of a curriculum;
3. have a 2.0 grade-point ratio for all registered credits.

Preprofessional Programs
By careful planning, students in the College can prepare themselves adequately for admission to professional and graduate schools. Each department provides advisers familiar with the recommendations of appropriate national professional organizations. In addition, they will assist the student to select courses for specific programs and schools.

The animal sciences department maintains a Pre-Veterinary Sciences Committee prepared to give specific aid to students preparing to enter schools of veterinary medicine.

Opportunities for special research studies are available under the 399 and 499 series.
CURRICULA IN AGRICULTURE

The various curricula are designed to give the students a knowledge of the fundamental principles underlying agriculture as a science, and the relationship of man to his natural environment. These programs of study should prepare them for effective service in business, industry, research, and teaching, as well as in practical farming.

In addition to the general University requirements for a B.S. degree, the College requirement is Chem 113, 114, 115, 116; Ag 100; An Sc 141; Hort 262 or Agron 201; Ag Econ 220; Ento 261; and Soils 304.

There are three general curricula in the College: Agricultural Technology, Agricultural Science, and Agricultural Economics.

1. Agricultural Technology. There are at present four majors within this curriculum, with a minimum requirement of 18 credits from: Ag Eng 351, 352, Agron 201, Ento 374, Hort 450, PPath 401-403, Soils 350,Fd Sc 201.

(a) General Agriculture major: 18 credits from agriculture including Ag 200-201, 18 credits of nonagriculture electives, and additional credits to make 128 credits.

(b) Mechanized Agricultural Production major: 15 credits in agricultural engineering courses including Ag Eng 499, GE 109, and 27 credits from the following: Ag Econ 428: Agron 411, 412; An Sc 244; Fd Sc 401; Soils 350, 460; Acc 201, 202; BAS 301, 302; Bot 470; Math 205, 206, 231, 232; Phys 170, 171, 272, 273; CE 270, 271, 320, 421; EE 200, 304, 305; ME 311, 312, 424; and additional credits to make 128 credits.

(c) Horticultural Technology major: 3 credits of Hort 499 (Summer Practicum); 25 credits from courses in agriculture, botany, Geog 300, 314, or Acc 201, 202 that have not been used to satisfy other requirements; and additional credits to make 128 credits. A minimum of 15 horticulture credits overall is also required.

(d) Animal Technology major: 30 credits from Agron 201, 413; Ag Bio 402; Ag Econ 321, 322, 427, 430; Ag Eng 351, 352, 435; An Sc 244, 341, 342, 351, 352, 353, 354, 362, 445, 451-452, 453; Fd Sc 201, 401; Hort 453, 481; Soils 340, 440, 460, 461, 470; Geog 300, 314; Acc 201, 202; and additional credits to make 128 credits. A minimum of 18 animal science credits overall are also required.

2. Agricultural Science. There are at present four majors within this curriculum. All four majors require the following: Chem 243, 245; Chem 244, 246 or Ag Bio 402, 403; Genet 451, 452; Phys 151-154 and Micro 130.

(a) Animal Science major: An Sc 321, 341; 9 credits from An Sc 342, 351, 352, 353, 354, 362; Zool 320; 16 credits from AgBio 402, 403, Ag Eng 351, 352; Agron 201, 413; An Sc 445, 451-452, 453; Chem 133; Econ 150; Ento 374, 376; Zool 340, 416, 417, 430. The following are essential for pre-veterinary medicine but can be applied towards the animal science curriculum: Biol 250, Bot 101, Chem 113-116, 133, 134, 243-246; Eng 100, 251 or 315; Genet 451, 452; Math 134, 205; Phys 151-154; Zool 101, 420, and 4 credits each of humanities and social sciences.

(b) Entomology major: Ento 361, 362, 374, 376; one year of a foreign language approved by adviser; 15 credits from Ag Eng 351, 352; Bot 105, 461, 470; Chem 133; Geog 300; Hort 450, 453; Phil 210; PPath 401-403; Soils 340, 350; Zool 300, 340, 416, 417, 430, 631, 632.

(c) Agronomy and Soil Science major: With emphasis on crops—Agron 310, 499; Ag Bio 402; Bot 470 and 18 credits from the courses listed below. With emphasis on soils—Chem 133, 134; Soils 340, 350, 399, and 18 credits from the courses listed below. Agron 201, 310, 402, 411, 412, 413; Ag Econ 327, 343, 481; Ag Eng 351, 352, 435; An Sc 244; Bot 160, 201, 410, 412, 430, 453, 461, 470; Chem 133, 134, 243, 244, 351, 352, 422; Geog 101, 300, 314, 400, 406; GG 101, 102, 301, 302, 424; Hort 450, 453, 481; Math 205, 206, 231, 232; Phil 210; PPath 401-403; Soils 340, 350, 404, 440, 460, 461, 470; Zool 631, 632; one year of an approved foreign language.

(d) Tropical Horticulture major: Hort 450 and 28 credits from the following: Ag Bio 402, 403; Ag Eng 351, 352, 435; Agron 310, 402, 412; Biol 220, 250, 401, 440; Bot 105, 130, 160, 201, 399, 410, 412, 421, 430, 436, 450, 453, 454, 461, 470, 480; Chem 133; Ento 374, 376; Hort 350, 420, 453, 460, 471, 481, 499; Math 205, 206; PPath 401/403, 405; Soils 340, 350, 404; or one year of a foreign language.

3. Agricultural Economics

(a) Econ 150, 151, 300, 301; Ag Econ 321, 322, 428, 432, 434.

(b) Electives totalling 33 credit hours, none of which may overlap with courses taken to satisfy the various core requirements and distributed so as to have at least six credit hours from each of the following groups:

(1) Ag Econ 427, 429, 430, 480, 481.

(2) Econ 310, 340, 399, 400, 404, 405, 410, 411, 412, 414, 415, 425, 426, 430, 440, 450, 452, 460, 461, 470, 480, 490, 492, 496.

(3) Pol Sc 110; Law 300, 311; Acc 201, 202, 305, 307, 361, 365; RE 300; BEc 342, 361, 362; Mgt 301, 341, 344, 345; Mkt 315, 321, 381, 397; PIR 361, 365, 367.

(4) Ag 200-201; Ag Bio 402, 403; Ag Eng 351, 352, 435; Agron 201, 310, 411, 412, 413; Soils 340, 440, 460, 461, 470; An Sc 244, 321, 341, 342, 351, 352, 353, 354, 445, 453; Ento 374, 376; Fd Sc 201, 401; Hort 350, 450, 453, 471, 481, 483; PPath 401-403; Bot 105.
AGRICULTURE

Agriculture (Ag)

Office: Gillmore Hall 114

Associate Professor: 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.

200 Agricultural Practice (2) I, II, SS Goto

Agricultural practice at the Pearl City Instructional Facility for beginning students and to nonagricultural students.

201 Agricultural Practice (2) I, II, SS Goto

Agricultural practice in individual and team projects at the Pearl City Instructional Facility. May be repeated.

399 Agricultural Thesis (v) I, II, SS Goto

Advanced individual work in field, laboratory, library, government service practicum.

Agricultural Biochemistry (AgBio)

Department Office: Henke Hall 329

Professors: Bevenue, Hylin, Matsumoto.

Assistant Professors: Montalvo, Tang.

402 Principles of Metabolism (3) I, II Montalvo, Hylin

Study of the biochemical processes occurring in bacteria, plant, and animal life with special emphasis given to the anabolic and catabolic pathways of carbohydrates, lipids, proteins, and nucleic acids occurring in these living organisms. Pre: Chem 117-118 or 113-115, 114-116, and 241-242, or consent of instructor. Approved for graduate credit.

403 Principles of Metabolism-Laboratory (1) I, II Montalvo, Hylin

This laboratory course may not be taken without lectures (402).

602 Carbohydrate Chemistry and Biochemistry (3) II Montalvo, Chemistry, biochemistry, and general importance of carbohydrates found in bacteria, plants, and animals as well as particular aspects of carbohydrate biochemistry which are of current research interest. Pre: AgBio 402 or equivalent.

610 Plant Biochemistry (3) I Tang

Comprehensive study of chemical constituents and biochemical processes unique to plant kingdom with some emphasis upon selected aspects of current interest. Pre: 402 or equivalent: consent of instructor.

700 Pesticide Use, Regulation and Environmental Interactions (1) II Hylin

Current research findings on use, dissipation, and analysis of pesticide: environmental aspects; pesticide regulation and legislation.

Agricultural Economics (AgEc)

Department Office: Gilmore Hall 211

Professors: Scott, Davidson, Ishida, Luykx, Philipp, Spielmann.

Associate Professors: Gopalakrishnan, Holderness, Keeler, Staub, Yamauchi.

Assistant Professors: Anderson, Garrod, Vieth.

Lecturers: Baker, Hogg, Wallraabenstein.

220 Agricultural Economics (3) I, II Ishida

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 Prize Analysis in Agriculture (3) II Spielmann

Economic concepts as applied to agricultural production and marketing: introduction to forecasting and elementary demand models; capital budgeting; technological change; programming techniques: decision theory.

322 Marketing Agricultural Products (3) II Ishida

Problems, agencies, functions, costs, prices, regulations affecting marketing: proposed improvements. Pre: introductory course in economics or consent of instructor.

399 Directed Study (v) I, II Scott

Limited to exceptional undergraduate students qualified to carry on advanced study. Pre: consent of instructor.

427 Management of Agri-Business Firms (3) I Ishida

Basic principles of management. Problems encountered in management of cooperative and non-cooperative business firms directly or indirectly related to the agricultural economy, management structure and performance of food processors, agricultural supply businesses and various other agriculture related organizations discussed and analyzed. Pre: 321 or consent of instructor. (Alt yrs: offered 1973-74)

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: Econ 301, 327 or consent of instructor.

429 Agricultural Policy and Planning (3) II Spielmann

Economic analysis of agricultural policy at state, national and international levels. Examination of resources (especially water and land) policies as they pertain to conservation and efficient usage. Examination of policies affecting ecological problems (e.g., usage of insecticides, herbicides, etc.). This course given in conjunction with 636. Students enrolled in this course will be excused from some of the research assignments for students in 636. Otherwise instruction and readings will be the same as 636. Pre: Econ 150-151, or consent of instructor.

430 Agricultural Finance (3) II Holderness

Financing of agricultural production and marketing enterprises, operation of agricultural credit systems in the U.S. and developing countries of Asia. Pre: 327 or consent of instructor. (Alt yrs: not offered 1973-74)

432 Introduction to Natural Resource Economics (3) I Gopalakrishnan

Economic principles involved in efficient utilization and management of natural resources—e.g., marine resources, water, land, timber, etc. Pre: 150 or consent of instructor.

434 Statistical Methods (3) I Garrod

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.

480 Computer Programming in Agricultural Economics Research (3) II Yamauchi


481 Managerial Economics in Agriculture (3) I (2L, 1Lb) Keeler

Management and organization of plantations and commercial farms and ranches; production analysis concerning inputs and outputs; planning and budgeting for economic decision making; case studies.

624 Research Methodology (3) I Gopalakrishnan

Philosophical setting for scientific inquiry, scientific method and its antecedents, application in agricultural economics research. Original research project required. Pre: graduate standing.

625 Economics of Agriculture: Tropical Countries and Asia (3) II Philipp

Agricultural development, economics of agricultural technology, resource utilization, comparative advantage, international and intracountry marketing problems, institutions affecting agricultural economy. Pre: 220 or consent of instructor.
626 Collection of Economic Data in Agriculture (3) I, 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) I, II Staub
Economics of resource allocation at firm and industry levels. Advanced analytical techniques of analysis: linear programming; synthesis; budgeting; statistical analysis. Pre: 428, 480 or consent of instructor.

630 Advanced Agricultural Market Analysis (3) I, II Scott
Marketing research methodology with emphasis on techniques for measuring consumer preferences, market potentials, methods and costs of market development, and processing efficiency. Pre: basic course in statistics.

634 Quantitative Methods and Statistical Analysis (3) I, II Vieth
Principles of statistical inference, least squares estimators, two-variable model, three-variable model, general linear model, errors in variables, auto-correlations, multicollinearity, heteroscedasticity, dynamic models, shift variables and analysis of variance simultaneous-equation problems. Pre: Econ 321, Econ 325 or Ag Econ 434.

636 Agricultural, Resources, and Ecological Policy (3) I, II Spielmann
Economic analysis of agricultural policy at state, national and international levels. Examination of resources (especially water and land) policies as they pertain to conservation and efficient usage. Examination of policies affecting ecological problems (e.g., usage of insecticides, herbicides, etc.). See 429.

637 Resource Economics (3) I, II Yamauchi
Analysis of problems of development and management of natural resources with emphasis on resources in agriculture and role in economic development. Pre: 428, 432, or consent of instructor.

638 Seminar: Land Use in Developing Countries (3) I, II Hogg, Yamauchi
Role of land use pattern on agricultural economic development and welfare of rural people in emerging agricultural nations. Pre: 432 or consent of instructor.

639 Agricultural Development Economics and Development Planning (3) I Anderson
Theories of agricultural development, agriculture in total development process; formulation of agricultural development plans and policies.

640 Agriculture and Rural Development Administration (3) I Luykx
Consideration of formal and informal organizations and structures of government and processes by which agricultural and rural development activities are formulated and carried out.

699 Directed Research (v) I, II Scott
Pre: consent of instructor.

701 Seminar in Agricultural Economics (1) I, II Staff
Topics of current interest and current research related to agricultural production, marketing, statistics, rural sociology, development and policy.

800 Thesis Research (v) I, II Staff

Agricultural Engineering (AgEng)

Department Office: Ag Engineering Institute 104

Professors: Wang.
Associate Professors: Gitlin, Hundtoft, Liang, Smith, Wu.
Instructor: Huang.

333 Computer Programming for Bio-Science (3) I, II Liang
Introduce computer programming and its use through presentation of computer application examples in bio-sciences. (Same as GE 333)

351 Mechanization Principles and Practices (3) I
Basic principles and practices of mechanization as applied to food and fiber industries. Pre: college math.

352 Mechanization Laboratory (2) II
Laboratory experience in application of mechanization principles and practices. Pre: 351.

431 Agricultural Power and Equipment (3) I
Principles of operation, maintenance, repair and power measurement of gasoline and diesel engines. Farm tractor selection, power measurement, safety and study of the tractor's power transmission components. Pre: 351, 352.

435 Irrigation Principles and Practices (3) I, II Wa Basic principles of irrigation science with applications to irrigation methods; water conveyance, distribution, measurement; water requirements of crops, irrigation efficiency and cost. Pre: 351 or consent of instructor.

499 Directed Research (v) I or II
Research in the area of mechanized agricultural production. Pre: consent of instructor.

622 Experimental Methods in Cause-Effect Modeling (3) I, II Hundtoft
Factorial designs and fractional factorial designs for screening variables and for response optimization. Response surface methodology. Experimental designs appropriate to building and testing multi-variable behavior relationships. Sequential experimental designs. (Same as GE 622)

631 Analysis of Implement Design (3) I, II Smith
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) I Wu
Design based on water requirements; design of water conveyance and diversion structures and of application methods. Irrigation economics. Pre: CE 421 or equivalent.

638 Systems Analysis in Bio-Sciences (3) I, II Liang
System concept, procedures for developing system models, characteristics of bio-systems and introduction to methods for optimal manipulation of bio-systems.

647 Methods of Agricultural Engineering (3) I 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.

699 Directed Research (v) I, II Wang
Pre: consent of instructor. May be repeated once.

800 Thesis Research (v) I, II

Agronomy and Soil Science

Department Office: Gilmore Hall 117

Professors: Bullock, Ekern, Fox, Kanehiro, Rotar, Sanford, Swindle, Uehara.
Associate Professors: El-Swaify, Green, Ikawa, Silva, Young.
Assistant Professors: Bartholomew, Koch, Jones, Mapes, Urata.

Agronomy (Agron)

201 Principles of Tropical Agronomy (4) I, II Bartholomew

310 Tropical Crop Production (3) I Rotar
Current agricultural practices in production of food, feed, and fiber crops in the tropics. Pre: 201 or equivalent.
402 Plant Tissue Culture (3) II (1L, 2Lb) Mapes
Aseptic techniques for studying growth and development of plant tissues with emphasis on chemical controls and environment on morphogenesis and plant production; bioassays and microtechnique procedures. Pre: Bot 201; Bot 410 and 412 helpful but not required.

410 Field Course in Tropical Crop Production (6) SS Staff
Field study of production of tropical crops including management, fertilization, irrigation, and weed control of tropical grain crops, root crops and selected vegetable and fruit crops.

411 Sugar Cane Agronomy (3) II (2L, 1Lb) Silva
Principles of sugarcane culture including field practices, crop management, breeding, variety selection, and disease and insect control. Comparison of cultural practices of sugarcane areas of the world with those of Hawaii. Pre: Soils 304 or consent of instructor. (Alt yrs: offered 1973-74)

412 Pineapple Culture (2) I Sanford
Historical development of pineapple culture around world. Morphological and physiological peculiarities of pineapple plant. Agronomic practices used in pineapple culture in Hawaii. Pre: consent of instructor. (Alt yrs: not offered 1973-74)

413 Pasture Management (3) II Rotar

499 Directed Study (4) I, II
Pre: senior standing in agronomy, consent of instructor.

600 Physiology of Crop Production (3) I Bartholomew
Physiological principles underlying development and production of crop communities. Pre: Bot 470 or consent of instructor. (Alt yrs: not offered 1973-74)

651 Advanced-Techniques in Plant and Soil Analysis (3) SS (3L, 1Lb) Young
Methodology for the analysis of plant tissue and soil with emphasis on spectrophotometric, gas chromatographic, and automated techniques for the determination of inorganic and organic constituents. Pre: consent of instructor.

699 Directed Research (12) I, II
Pre: candidacy for M.S. degree; consent of instructor.

701 Seminar in Advanced Agronomy (1) I, II Bullock
Review of recent research findings in tropical agronomy. Pre: graduate standing.

710 Mineral Nutrition of Tropical Crops (3) I Sanford

799 Directed Research (12) I, II
Pre: candidacy for Ph.D. degree; consent of instructor.

800 Thesis Research (12) I, II

Soil Science (Soils)

204 Soils and Man (3) II (2L, 1Lb) Green
Fundamentals of soil science with emphasis on soil and water as natural resources which need to be conserved while being utilized; importance of key physical, chemical, and biological properties of soils to nutrient and energy balance in the biosphere, environmental quality, and land use. Pre: 1 semester of general chemistry.

304 Tropical Soils (4) I (3L, 1Lb) Ikawa

340 Soil Chemistry (3) I (2L, 1Lb) Kamehiro
Study of soil chemical reactions, availability of plant nutrients, chemical analyses of soils. Pre: 304.

350 Soil Fertility (3) II Fox
Nutrient availability in relation to chemical and physical properties of soil; fertility evaluation by plant response and soil tests. Pre: 304.

404 Soil Microbiology and Biochemistry (3) II (2L, 1Lb) Koch

440 Soil Salinity and Irrigation Water Quality (3) II (2L, 1Lb) El-Swaify
Nature, management and reclamation of salt-affected soils, irrigation water quality criteria and classifications, salt tolerance of crops and principles of soil salinity control. Pre: 340 or consent of instructor. (Alt yrs: not offered 1973-74)

460 Soil Physics (3) II (2L, 1Lb) Uehara

461 Soil Erosion: Causes and Controls (3) II Ekern
Physical properties of soil which influence erodibility; energy sources and mechanisms of water and wind erosion; principles of vegetative and mechanical controls; survey of development and spread of conservation movement. Pre: consent of instructor. (Alt yrs: not offered 1973-74)

470 Tropical Soil Survey and Interpretation (2) SS

499v Directed Study (4) I, II, SS
Pre: senior standing in soils; consent of instructor.

640 Advanced Soil Chemistry (3) II (2L, 1Lb) El-Swaify
Physico-chemical properties of soils and soil solution with emphasis on surface. colloidal, and ionic equilibrium relationships. Pre: 340; Chem 351 recommended. (Alt yrs: offered 1973-74)

650 Advanced Soil Fertility (4) (2L, 2Lb) Fox
Ion exchange, organic matter transformations, and mobility of nutrient and non-nutrient ions related to crop growth and composition. Use of soil and plant analyses for estimating fertilizer requirements. Pre: consent of instructor. (Alt yrs: not offered 1973-74)

661 Meteorology in Agriculture (3) II Ekern
Elements and mechanics of weather: response of plants to weather elements; manipulation of micro-climate; weather requirements of major crops: weather and plant disease and insects: weather and warm-blooded animals, including man. Pre: consent of instructor. (Alt yrs: offered 1973-74)

670 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. (Alt yrs: offered 1973-74)

671 Soil and Clay Mineralogy (3) II (2L, 1Lb) Jones
Instrumental analysis of soil minerals with emphasis on clay size materials. Pre: consent of instructor. (Alt yrs: not offered 1973-74)

699v Directed Research (12) I, II
Pre: candidacy for M.S. degree; consent of instructor.

704 Soil Science Seminar (1) I, II Bullock
Review of recent research findings in tropical soil science. Pre: graduate standing.

799v Directed Research (12) I, II, SS
Pre: candidacy for Ph.D. degree; consent of instructor.

800v Thesis Research (12) I, II, SS
Animal Sciences (AnSc)

Department Office: Henke Hall 106

Professors: Brooks, Hugh, Koshi, Ross, Stanley, Wayman.
Associate Professors: Herrick, Miyahara, Nakamura, Nolan, Palafax, Vogt.
Lecturers: Ishizaki, Smith.

141 Animals and Man (3) I, II Herrick
Study of farm and companion animals and their relationship and contributions to man, including a brief introduction to their nutrition, physiology, genetics, disease control and management.

152 Pets and Companion Animals (3) II Herrick
Study of man’s major companion animals, including their feeding, breeding, behavior, care and uses.

244 Fundamental Animal Nutrition (3) II Brooks
Comparative animal digestive systems and metabolism. Essential nutrients, their function and interrelationships. Pre: Chem 241 or 243 or consent of instructor.

251 Livestock Management Practices (3) II Herrick
Practical experience in management of livestock offered at Waiakea Livestock Research Farm. Pre: 141 or consent of instructor.

252 Applied Animal Nutrition (3) I, II (2L, 1Lb) Nolan
Application of the principles of nutrition to the feeding of farm animals; composition and nutritional value of feedstuffs; nutritional requirements of beef cattle, dairy cattle, horses, poultry and swine. Pre: 244.

253 Livestock Management Laboratory (2) I, II (1L-Lb) Herrick
Practical work on management practices with work on light horses.

341 Livestock Management Laboratory (2) I, II (1L-Lb) Herrick
Field experience in production, marketing and disease control of livestock. Emphasis placed on subject matter covered in animal science production and disease courses. Pre: 141.

342 Beef Production (3) II (2L, 1Lb) Nolan
Principles of economic beef production including beef breeds, selection, breeding, management systems, feeding and marketing under tropical conditions.

343 Swine Production (3) I Hugh
Principles of efficient pork production including comparative breed evaluation, breeding, feeding, management, marketing and business aspects. Problems and practices associated with tropical environment emphasized.

344 Ruminant Nutrition (2) II Stanley
Principles involved in economical milk production in the tropics including management, breeds, breeding, selection, culling, feeding, housing, milking, quality control and raising young animals.

345 Horses and Horsemanship (3) I (2L, 1Lb) Smith
Origin of species, breeds, nutrition, care, management. Laboratory on management practices with work on light horses.

346 Poultry Production (3) 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.

347 Animal Industry Seminar (1) I Stanley
Discussion of current topics in animal agribusiness presented by industry leaders.

445 Animal Breeding (3) I Vogt
Application of genetic principles to improvement of livestock, including poultry. Pre: one semester of introductory genetics, or consent of instructor.

451-452 Physiology of Domestic Animals (4-4) Yr (3L, 1Lb) Wayman
Organ systems of body, their anatomical arrangement, structure, function. Emphasis on most important species. (Alt yrs; offered 1973-74)

453 Animal Diseases and Their Control (3) I Miyahara
Disease problems of livestock, poultry, and companion animals; their economic significance, causes, public health implications, and control. Pre: 141 or consent of instructor.

459 Directed Study or Research (v) I, II
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.

641 Seminar in Animal Science (1) II
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: consent of instructor. (Alt yrs; not offered 1973-74)

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: 451-452 or equivalent. (Alt yrs; not offered 1973-74)

652 Quantitative Genetics (3) II (2L, 1Lb) Vogt
Concepts relating to genetic properties of populations and to inheritance of quantitative traits. Pre: one semester of introductory genetics and one year of statistics. (Alt yrs; not offered 1973-74)

699 Directed Research (v) I, II, SS
(1) Genetics—Vogt; (2) Nutrition—Brooks, Ross, Stanley, Palafax; (3) Physiology—Wayman, Herrick; (4) Microbiology and Pathology—Nakamura; (5) Management—Staff.

800 Thesis Research (v) I, II

Entomology (Ento)

Department Office: Krauss Hall 23

Senior Professor: Hardy.
Professors: Beardsley, LaPlante, Mitchell, Namba, Nishida, Sherman.
Associate Professors: Haramoto, Tamashiro.
Assistant Professor: Chang.

261 General Entomology (4) I, II (2L, 2Lb) Mitchell
Structure, habits, biology, classification of insects; insects characteristic of Hawaii. Pre: Zool 101 or Bot 101 or consent of instructor.

361 Insect Morphology (3) I (2L-Lb) Namba
Comparative and gross morphology; homologies of structures; anatomy; development in representative groups. Pre: 261 or consent of instructor.

362 Systematic Entomology (3) II (2L-Lb) Hardy
Classification of insects; orders and families. Use of taxonomic tools. Pre: 361 or consent of instructor.

374 Economic Entomology (3) II Sherman
Destructive and beneficial insects; principles of cultural, mechanical, legislative, biological and chemical control. Pre: 261, Chem 113, 114, or consent of instructor.

376 Economic Entomology Laboratory (1) II Sherman
Studies with Hawaiian insect pests of households, plants and animals. Pre: credit or registration in 374 or consent of instructor.

414 Insect Physiology (4) I (3L, 1Lb) Chang
Study of the principal physiological and biochemical functions of insects. Pre: 261; Chem 243, 244 or Ag Bio 402-403 or consent of instructor.

661 Medical and Veterinary Entomology (3) I (2L, 2Lb) Hardy
Insects and other arthropods in relation to human and animal diseases. Pre: 261, desirable Zool 340 and Micro 351; or consent of instructor.
Food Science and Technology (FdSc)

Department Office: Food Science & Tech Bldg.

Professors: Frank, Moser, Nakayama, Yamamoto.
Associate Professors: Hing, Moy.
Assistant Professor: Cavaletto.

201 Man's Food (2) I Cavaletto
   Study of man's past, present and future food supply: food composition, food requirements, production, processing, distribution, and consumer aspects including food safety.

401 Food Processing (3) II (1L, 2Lb) Hing
   Application of principles of canning, freezing, dehydration and chemical preservation to food processing. Laboratories on processing of fruit, vegetables, meat, nuts and dairy products. Pre: Chem 116 and Phys 151 or consent of instructor.

403 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.

411 Food Engineering (3) I (2L, 1Lb) Moy
   Principles and application of thermodynamics, electricity, fluid mechanics, heat transfer, psychrometry, and material and energy balances to food processing and preservation. Pre: 1 year physics or AgEng 351.

430 Food Chemistry (3) II Nakayama
   Chemical properties of food constituents discussed in relation to their effect on processing, nutrition, and spoilage. Pre: Chem 113-114, 241.

440 Food Safety and Consumer Protection (2) II Yamamoto
   Discussion of potential microbial, parasitic, chemical, and natural food hazards, food laws and standards, and related aspects of consumer protection. To be taught in conjunction with 640. Students in 440 will be graded on a separate basis and will be excused from certain assignments required of students in 640. Pre: chemistry and microbiology or biology.

604 Special Topics in Food Microbiology (v) II Frank
   Selected laboratory experiments dealing with various aspects of food micro-organisms. Pre: consent of instructor.

610 Advanced Food Processing I (3) II Moy
   Engineering principles and practice of food dehydration, freeze-drying, radiation-preservation, size reduction, concentration, distillation, and extraction. Pre: 1 year each of general physics, general chemistry, and algebra. (Alt yrs; offered 1974-75)

613 Advanced Food Processing II (3) I Hing
   Application of physical, chemical, biological and engineering principles to the preservation of foods by thermal processing and freezing. Pre: 401 or consent of instructor. (Alt yrs; offered 1973-74)

620 Seminar in Food Science (1) I Yamamoto
   Special topics, reports, discussion of basic concepts in food science.

630 Food Fermentation (3) I Nakayama
   Application of microbiological, biochemical, and engineering principles in the fermentation industry. Pre: consent of instructor. (Alt yrs: offered 1973-74)

640 Food Safety (2) II Yamamoto
   Discussion of potential food hazards (microbiological, parasitic, chemical, and natural, food laws and standards, and practical means for reducing or eliminating health hazards. Pre: microbiology and organic chemistry.

699 Directed Research (v) I, II SS
   Directed research in various aspects of food science. Pre: consent of instructor.

701 Seminar in Recent Advances in Food Research (1) II Moy
   Reports and discussions from current literature in food science and technology.

730 Biochemical Aspects of Food Science (3) I Yamamoto
   Properties of natural compounds of importance to food processing including application and control for selected enzyme systems. Pre: biochemistry. (Alt yrs: offered 1974-75)

800 Thesis Research (v) I, II, SS

Horticulture (Hort)

Department Office: St. John Lab 102

Professors: Akamine, Brewbaker, Gilbert, Hamilton, Kamemoto, Nakasone, Sagawa, Watson, Yee.
Associate Professor: Hartmann.
Assistant Professors: Cavaletto, Kunisaki, Murdoch, Nishimoto, Rauch, Tanaka.

101 Plants are for People (2) I (2L) Watson
   Impact of Hawaiian flowers, fruits, trees, shrubs, vegetables to life in tropics and subtropics. (Not open to agriculture majors.)

262 Principles of Horticulture (4) I, II, (3L, 1Lb) Criley, Nishimoto
   Relationships of plant structures, nutrients, environment, cultural methods to plant growth. Pre: Bot 101; credit or concurrent registration in Chem 114.
350 Tropical Landscape Horticulture (3) II (2L, 1Lb) Rauch
Concepts and techniques of landscape plant production, distribution, and utilization in the tropics. Pre: 262.

420 Plant Propagation & Seed Technology (3) I (2L, 1Lb) Rauch
Theoretical and applied aspects of vegetative propagation and seed technology involving fruits, flowers, vegetables and landscape plants. Pre: Hort 262.

450 Tropical Horticultural Crop Production (4) I (3L, 1Lb) Nakasone, Staff
Factors affecting the production of important horticultural crops in Hawaii. Pre: 262.

453 Plant Breeding (3) II (2L, 1Lb) Hartmann, Staff
Application of genetics to crop improvement, breeding methods, and breeding of plants in Hawaii. Pre: Genet 451.

460 Turfgrass Management (3) II (2L, 1Lb) Murdoch
Selection, establishment, and maintenance of grasses for various types of turf. Pre: 262 or equivalent.

471 Post-Harvest Handling (3) I (2L, 1Lb) Akamine
Handling and storage of horticultural crops. Pre: 262 or consent of instructor. (Alt yrs; offered 1973-74)

481 Weed Science (3) I (2L, 1Lb) Nishimoto
Weed classification and principles of control. Pre: 262 or Agron 201. (Alt yrs; not offered 1973-74)

499 Directed Study I, II
Supervised individual instruction in field, laboratory and library. May be repeated. Pre: 262. (Maximum hrs 6 credits.)

603 Experimental Design (3) I (2L, 1Lb) Brewbaker, Silva
Design of experiments and variance analyses in biological and agricultural research. Pre: Zool 631 or Ag Econ 434 or equivalent. Desirable: Zool 632.

611 Plant Improvement Systems and the Plant Breeding Profession (3) I (2L, 1Lb) Gilbert
Recent problems, methods, and organizations involved in the genetic improvement of crop varieties or cultivars. Breeding for disease resistance and other special effects. Pre: 453. (Alt yrs; offered 1973-74)

615 Advanced Plant Breeding (3) I (3L) Hartmann
Principles of population and quantitative genetics as applied to increased yield in crop plants. Pre: 453. (Alt yrs; not offered 1973-74)

618 Cytogenetics (3) II (2L, 1Lb) Sagawa
Correlation of genetic and cytological phenomena. Pre: Genet 451, Bot 618. (Alt yrs; offered 1973-74)

650 Advanced Vegetable Crops (3) I (2L, 1Lb) Gilbert
Recent developments in vegetable technology, crop physiology, cultural methods and vegetable systematics. Pre: 450. (Alt yrs; not offered 1973-74)

662 Advanced Tropical Fruit Science (3) II (2L, 1Lb) Hamilton
Origin, taxonomic relationships, genetics, breeding, technical aspects of culture of fruit and nut crops commercially important in Hawaii. Pre: 450.

664 Orchidology (3) II (2L, 1Lb) Kamemoto
Classification, culture, cytogenetics, breeding of orchids. Pre: Bot 101; Genet 451. (Alt yrs; not offered 1973-74)

666 Biochemical Genetics of Plants (3) II (2L, 1Lb) Brewbaker
Types and sources of radiation; effects of irradiation on living organisms; applications in agricultural research. Pre: consent of instructor. (Alt yrs; offered 1973-74)

667 Horticulture Seminar (1) I, II
Presentation of research reports; reviews of current literature in horticulture.

668 Growth Regulators in Horticulture (2) II (2L) Criley

669 Laboratory in Plant Growth Regulators (1) II (1Lb) Criley
Extraction, isolation, identification, and bioassay of endogenous plant growth substances; screening and field testing of chemical substances for growth regulator activity. Pre: Bot 470 and/or consent of instructor.

691 Crop Ecology (3) I (2L, 1Lb) Brewbaker
Climatic, edaphic, and biotic factors influencing tropical and subtropical crops; instrumentation and data interpretation. Pre: 450 or consent of instructor. (Alt yrs; offered 1973-74)

699 Directed Research (v) I, II
Pre: consent of instructor; maximum hrs. 8 credits.

711 Special Topics in Experimental Horticulture (v) I, II
Discussion of recent advances in horticultural research with detailed study of specific areas in this field. Pre: consent of instructor.

800 Thesis Research (v) I, II

Plant Pathology (PPath)

Department Office: St. John Lab 305

Professors: Aragaki, Buddenhagen, Holtzmann, Meredith.
Associate Professors: Ishii, Ko, Martinez, Patil, Trujillo.
Assistant Professor: Bergquist.

401 Principles of Plant Pathology (2) I, II (2L) Holtzmann
Diseases in plants, emphasis on infection and development in relation to environment, epidemiology, methods of appraisal, control. Pre: Bot 101.

403 Principles of Plant Pathology Laboratory (2) I, II (2-3 hr Lb) Trujillo
Studies of causal agents, host-parasite relationships, epidemiological factors, and control of plant disease, with emphasis on tropical crops. Pre: 401.

405 Clinical Plant Pathology (2) SS (2Lb) Martinez
Recognition and familiarization with broad spectrum of tropical plant diseases. Evaluation of disease problems in the field; diagnosis and identification of plant pathogens in the laboratory. Pre: 401 and 403 and consent of instructor.

499 Directed Research (v) I, II, SS
Limited to undergraduate students qualified to carry on research problem in plant pathology. Pre: consent of instructor.

601 Tropical Plant Pathology (3) I (2L, 1Lb) Buddenhagen
Diseases of tropical crops and their control, emphasis on phytopathological principles peculiar to plant diseases in the tropics. Includes fungi, bacteria, viruses, mycoplasma, and nematodes. (Alt yrs; offered 1973-74)

612 Principles of Plant Disease Control (3) II (2L, 1Lb) Aragaki
Methodology and application of plant disease control. Pre: 401 and 403. (Alt yrs; offered 1973-74)

616 Plant Nematology (3) II (2Lb) Holtzmann
Collection, classification, morphology, biology, control of nematodes which attack economic crops. Pre: 401 and 403, Zool 101, or consent of instructor. (Alt yrs; not offered 1973-74)

621 Plant Pathology Techniques (3) I (2Lb) Trujillo
Laboratory and greenhouse methods for study of plant diseases: isolation, culture, inoculation; pathological histology and physiology, photography. Pre: 401 and 403, Micro 351; or consent of instructor.

625 Advanced Plant Pathology (2) II
Buddenhagen
Analysis of basic concepts of plant diseases; emphasis on evolution and physiology of parasitism, etiology, epidemiological principles. Pre: 401 and 403, 612; or consent of instructor. (Alt yrs; offered 1973-74)

630 Plant Virology (3) II (2L, 1Lb) Ishii
Plant viruses: diseases caused in economic plants, biological and physical properties. Pre: 401 and 403, or consent of instructor. (Alt yrs; not offered 1973-74)

AGRICULTURE
HUMAN RESOURCES DEVELOPMENT

Human resources development is an applied field of study and service which concentrates on the problems of the family and its members as new directions for their lives emerge in response to social change. Our primary objective is to explore and communicate scientific and humanistic knowledge and experience relevant to the directing of social change toward the support of optimal human development.

The curriculum is built upon the knowledge of man and his relationship to the physical and social world and his role in problem solving, which involves decision making in relation to value priorities. This direction requires a sound knowledge of biological development coupled with essential elements of the physical and social sciences and the humanities.

The human resources development programs prepare individuals who will contribute to problem solving in response to issues and needs relevant to themselves, their families and the community at large. Some examples of these are: poor nutrition among selected age groups, inadequate day care and after school care of infants and children and need for a model delivery system for training child care and parent education personnel in Hawaii; unstable and impaired socialization of children; problems of unmet needs of youth and older members; widespread disadvantage to consumers; dehumanization in business and industry; and unawareness of the many possible dimensions of aesthetic involvement.

Behaviors and processes are studied as man adapts over his entire life cycle and, therefore, the division recommends as an education core for all majors in the division the life cycle of human development and decision making within the context of changing values. The cultural and behavioral aspects of each of the separate fields may be included as part of that core. The student, thereby, not only studies the art and science aspects of his specialized field per se, but has an opportunity to gain perspective on behavior in general and himself as a person in the process. In other words, we attempt to avoid the dehumanizing aspects of the models in education which compartmentalize the roles and activities people engage in, and thereby alienate them from the unity which is, in fact, our common humanity.

The interdisciplinary areas which represent the focal studies of this division are the following:

---

**Plant Physiology**

**Department Office:** St. John Lab 503-B

**Professors:** Akamine, Cool, Friend, Kefferd, Lamoureux, Mueller-Dombois, Siegel.

**Associate Professors:** Nakata, Putman.

**Instructor:** Gay.

*For course descriptions, see the following listings under the department of botany.*

**BOTANY**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Department Office</th>
<th>Professors</th>
</tr>
</thead>
<tbody>
<tr>
<td>640</td>
<td>Environmental and Space Biology II (v)</td>
<td>St. John Lab 503-B</td>
<td>Nakata, Putman.</td>
</tr>
<tr>
<td>650</td>
<td>Ecology Seminar (1) II</td>
<td>St. John Lab 503-B</td>
<td>Krauss.</td>
</tr>
<tr>
<td>671</td>
<td>Energetics and Biosynthesis in the Plant Kingdom (3) II (3L)</td>
<td>St. John Lab 503-B</td>
<td>Gay.</td>
</tr>
<tr>
<td>672</td>
<td>Techniques in Physiology (2)</td>
<td>St. John Lab 503-B</td>
<td>Professor Gay.</td>
</tr>
<tr>
<td>673</td>
<td>Techniques in Physiology-Biochemistry (2)</td>
<td>St. John Lab 503-B</td>
<td>Professor Gay.</td>
</tr>
<tr>
<td>675</td>
<td>Physiology Seminar (1) I, II</td>
<td>St. John Lab 503-B</td>
<td>Professor Gay.</td>
</tr>
<tr>
<td>699</td>
<td>Directed Research (v)</td>
<td>St. John Lab 503-B</td>
<td>Professor Gay.</td>
</tr>
<tr>
<td>799</td>
<td>Directed Research (v)</td>
<td>St. John Lab 503-B</td>
<td>Professor Gay.</td>
</tr>
<tr>
<td>800</td>
<td>Thesis Research (v)</td>
<td>St. John Lab 503-B</td>
<td>Professor Gay.</td>
</tr>
</tbody>
</table>

---

**CURRICULA IN HUMAN RESOURCES DEVELOPMENT**

Human resources development is an applied field of study and service which concentrates on the problems of the family and its members as new directions for their lives emerge in response to social change. Our primary objective is to explore and communicate scientific and humanistic knowledge and experience relevant to the directing of social change toward the support of optimal human development.

The curriculum is built upon the knowledge of man and his relationship to the physical and social world and his role in problem solving, which involves decision making in relation to value priorities. This direction requires a sound knowledge of biological development coupled with essential elements of the physical and social sciences and the humanities.

The human resources development programs prepare individuals who will contribute to problem solving in response to issues and needs relevant to themselves, their families and the community at large. Some examples of these are: poor nutrition among selected age groups, inadequate day care and after school care of infants and children and need for a model delivery system for training child care and parent education personnel in Hawaii; unstable and impaired socialization of children; problems of unmet needs of youth and older members; widespread disadvantage to consumers; dehumanization in business and industry; and unawareness of the many possible dimensions of aesthetic involvement.

Behaviors and processes are studied as man adapts over his entire life cycle and, therefore, the division recommends as an education core for all majors in the division the life cycle of human development and decision making within the context of changing values. The cultural and behavioral aspects of each of the separate fields may be included as part of that core. The student, thereby, not only studies the art and science aspects of his specialized field per se, but has an opportunity to gain perspective on behavior in general and himself as a person in the process. In other words, we attempt to avoid the dehumanizing aspects of the models in education which compartmentalize the roles and activities people engage in, and thereby alienate them from the unity which is, in fact, our common humanity.

The interdisciplinary areas which represent the focal studies of this division are the following:
Human Development. The analytical study of the adaptation process of the human person over the life cycle in real life situations relating to his more immediate social and physical environment.

Food and Nutritional Sciences. The study of the complex relationships of food to man's health, welfare and happiness, including the science of food, its components, the chemistry and physiology of their utilization and the nutrient needs of individuals; and in addition, the science of social and cultural behavior as it relates to dietary patterns and habits.

Aesthetic Aspect of the Near Environment. An interdisciplinary approach to the study of man's clothing and space arrangements with special reference to aesthetic needs of individuals in various physical and social surroundings.

Consumer Science and Family Decision Making. The study of individuals and families with special reference to their role competency in resource use and consumption as these functions apply to the individual, family and the household; and including the interrelationships of these functions with the resources of the wider community.

As services formerly performed within the family are extended to the larger community, new professional directions are emerging to deliver these services, i.e., family life education, dietetics and nutrition consulting, day care administration, housing and consumer counseling, child development consulting, and services in business and industry relating to foods, clothing and textiles, and household equipment and arrangements. The applied work in the interdisciplinary fields which are represented in human resources development programs relates to these directions in professional development.

Admission and Degree Requirements

Admission requirements are the same as those for the University. To be entitled to a bachelor's degree 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 one of the curricula in human resources development (may overlap 1 and 2);
4. Earn at least a 2.0 grade-point ratio (C average for all registered credits).

The four departments within this division are Fashion Design, Textiles & Merchandising, Food and Nutritional Sciences, Home Economics, Human Development.

Fashion Design, Textiles and Merchandising (FDM)

The curricula in fashion design and fashion merchandising lead to careers in business and industry.

The Fashion Design option offers qualified students the opportunity to prepare for positions as designers, assistant designers, stylists, or fashion executives. Starting positions are sample makers, graders, and pattern makers.

The Fashion Merchandising option offers qualified students the opportunity to prepare for fashion careers with retail and wholesale organizations in buying, merchandising, fashion coordination, publicity, sales or marketing.

Within the established curricula of both options there is an opportunity to participate in field experience in business and industry.

Arrangements may be made for students in both options to study at the Fashion Institute of Technology in New York City during the spring semester of their junior year.

**FASHION DESIGN (FDM)**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credits</td>
<td>Credits</td>
</tr>
<tr>
<td>Eng 100 or *Humanities ... 3</td>
<td>*Humanities or Eng 100 ... 3</td>
</tr>
<tr>
<td>Psy 100 ... 3</td>
<td>*Quantitative Reasoning ... 3</td>
</tr>
<tr>
<td>*Art 101 (Humanities) ... 3</td>
<td>*Art Studio ... 3</td>
</tr>
<tr>
<td>FDM 125 or 113 ... 3</td>
<td>FDM 113 or 125 ... 3</td>
</tr>
<tr>
<td>FDM 111 ... 3</td>
<td>Speech 145 ... 3</td>
</tr>
<tr>
<td></td>
<td>HPE ... 1</td>
</tr>
<tr>
<td>Total ... 15</td>
<td>Total ... 16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Year</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credits</td>
<td>Credits</td>
</tr>
<tr>
<td>*World Civilization ... 3</td>
<td>*World Civilization ... 3</td>
</tr>
<tr>
<td>Econ 120 ... 3</td>
<td>*Natural Science or</td>
</tr>
<tr>
<td>FDM 213 or 216 ... 3</td>
<td>FDM 213 ... 3 or 4</td>
</tr>
<tr>
<td>FDM 213 or *Natural Science ... 3 or 4</td>
<td>HPE 267 ... 3</td>
</tr>
<tr>
<td>Elective (Art Studio recommended) ... 3</td>
<td>Elective (Art Studio recommended) ... 3</td>
</tr>
<tr>
<td>Total ... 15 or 16</td>
<td>Total ... 15 or 16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Year</th>
<th>Fourth Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credits</td>
<td>Credits</td>
</tr>
<tr>
<td>*Natural Science ... 3 or 4</td>
<td>FDM 419 ... 4</td>
</tr>
<tr>
<td>FDM 315 ... 3</td>
<td>FDM 420 ... 4</td>
</tr>
<tr>
<td>FDM 416 or 417 ... 3</td>
<td>Soc Sci (FDM 401 recommended) ... 3</td>
</tr>
<tr>
<td>HD 345 ... 3</td>
<td>HRD Elective (Not</td>
</tr>
<tr>
<td>Elective (Art Studio recommended) ... 3</td>
<td>recommended) ... 3</td>
</tr>
<tr>
<td>Total ... 15 or 16</td>
<td>Total ... 16</td>
</tr>
</tbody>
</table>

*Courses may be taken credit/no credit. See University requirements.

60 credits in non introductory courses required for graduation.

125 credits required for graduation in Fashion Design.
### Fashion Merchandising (FDM)

#### First Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credits</th>
<th>Second Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eng 100 or *Humanities</td>
<td>3</td>
<td>*Humanities or Eng 100</td>
<td>3</td>
</tr>
<tr>
<td>Psy 100</td>
<td>3</td>
<td>*Quantitative Reasoning</td>
<td>3</td>
</tr>
<tr>
<td>*Art 101</td>
<td>3</td>
<td>Soc 100</td>
<td>3</td>
</tr>
<tr>
<td>FDM 125 or 113</td>
<td>3</td>
<td>FDM 125 or 113</td>
<td>3</td>
</tr>
<tr>
<td>Sp 145</td>
<td>3</td>
<td>FDM 111</td>
<td>3</td>
</tr>
<tr>
<td>HPE</td>
<td>3</td>
<td>Total</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>Total</td>
<td>16</td>
</tr>
</tbody>
</table>

#### Second Year

<table>
<thead>
<tr>
<th>Credits</th>
<th>credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Art History or Studio</td>
<td>3</td>
</tr>
<tr>
<td>*World Civilization</td>
<td>3</td>
</tr>
<tr>
<td>FDM 216</td>
<td>3</td>
</tr>
<tr>
<td>FDM 213 or Natural Science</td>
<td>3</td>
</tr>
<tr>
<td>Acct 201</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>15 or 16</td>
</tr>
</tbody>
</table>

#### Third Year

<table>
<thead>
<tr>
<th>Credits</th>
<th>credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electives</td>
<td>6</td>
</tr>
<tr>
<td>*Written Communications</td>
<td>3</td>
</tr>
<tr>
<td>FDM 327</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>16 or 17</td>
</tr>
</tbody>
</table>

#### Fourth Year

<table>
<thead>
<tr>
<th>Credits</th>
<th>credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDM 425</td>
<td>3</td>
</tr>
<tr>
<td>*HRD elective (Not FDM)</td>
<td>3</td>
</tr>
<tr>
<td>FDM 416 or 417</td>
<td>3</td>
</tr>
<tr>
<td>BA Elective</td>
<td>3</td>
</tr>
<tr>
<td>FDM 403 (Optional)</td>
<td>3</td>
</tr>
<tr>
<td>FDM 429 (Optional)</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
</tr>
</tbody>
</table>

*Courses may be taken credit/no credit. See University requirements.

60 credits in non-introductory courses required for graduation. 125 credits required for graduation.

#### Department Office: Miller Hall 202

**Professor:** Umbel.

**Associate Professors:** Furer, Herrick.

**Assistant Professors:** McOmber, Sankey, Walker.

**Lecturers:** Chung, Des Jarlais.

### Courses

#### 111 Esthetics of Clothing (3) I, II (2L, 1Lb)

**Herrick**

Factors involved in clothing selection. Principles of line, color, design for individual figures. Consumer buying of wardrobes.

#### 113 Basic Clothing Construction (3) I, II (1L, 1Lb, 1Lb)

**Des Jarlais**

Principles of basic clothing construction with emphasis on standards, techniques and related fabric testing.

#### 125 Fashion Analysis (3) I, II (2L, 1Lb)

**Herrick**

Dynamics of fashion; environmental factors influencing fashion demand; analysis of trends. History, structure and terminology of the fashion industry.

#### 213 Textiles (4) I, II (3L, 1Lb)

**Walker**

Physical and chemical properties, structures and nomenclature of textiles and other related materials used in apparel and home furnishings.

#### 215 Block Pattern Designing (3) I, II (3L)

**Umbel**

Principles of pattern making for women's apparel through manipulation of quarter size pattern blocks. Pre: 113.

#### 216 Fashion Design & Sketching (3) I, II (2L, 1Lb)

**Chung**

Development of apparel design through sketching the fashion figure. Pre: 111.

#### 315 Draping (3) I, II (2-3 Hr L-Lb)

**Umbel**

Principles of pattern making through draping muslin models on professional dress forms. Pre: 215 or consent of instructor.

#### 316 Advanced Pattern Designing (3) II (1 1-hr L., 2 2-hr Lb)

**Chung**


#### 324 Fashion Careers (I) II (1L)

**Sankey**

Preparation for fashion design and merchandising field work and career placement; analysis of personal qualifications, survey of job markets, preparation of resumes, directing of employment interviews, employment decision making. Minimum sophomore standing.

#### 327 Fashion Buying and Merchandising (4) I, II (3L, 1Lb)

**Sankey**

Major considerations involved in buying and selling fashion merchandise. Types of retail merchandising organizations, analyzing consumer demand, selecting merchandise for resale, resident buying offices, fashion coordination, building a fashion image. Pre: 125, Mkt 300 or concurrent registration.

#### 328 Merchandise Planning and Control (3) I, II (3L)

**Sankey**

Theories, problems and procedures relating to financial and assortment planning and control of retail inventories. Pre: 327, Acct 201.

#### 329 Field Experience (3) SS only

**Sankey**

Minimum of eight weeks' full time supervised internship in the fashion industry: comprehensive terminal report required. Pre: 327 and consent of instructor.

#### 330 Advanced Materials and Methods for Clothing Construction (3) I, II (2 3-hr L-Lb)

**Chung**

Principles of advanced techniques for garment construction with emphasis on new and difficult to handle fabrics. Pre: 113 or consent of instructor.

#### 401 Man and Clothing (3) I, II (3L)

**Walker**

Seminars in sociological and psychological implications of clothing and adornment for the individual and society, as seen in historic and contemporary perspective. Pre: 6 cr. Soc or Psy and consent of instructor.

#### 403 Case Studies in Merchandising (3) I (3L-Lb)

**Sankey**

Analysis of the decision making processes utilized in arriving at solutions to typical fashion merchandising problems. Student analyses and presentations of true cases involving the weighing of factual data, disciplined thinking, and arriving at rational conclusions. Pre: 327, 328 and consent of instructor.

#### 416 Costumes of East Asia (3) I (3L)

**Umbel**

Historical development and characteristic features of traditional and folk costumes and fabrics of China, Vietnam, Korea, Japan, Okinawa. Relation to customs and culture; impact of Western influence on contemporary dress. Pre: 6 credits World Civilization. (FDM 216—F.D. majors only.)

#### 417 Costumes of the Western World (3) I, II (3L)

**Furer**

Chronological study of costume as related to culture and customs in its historical and contemporary contexts. Pre: 6 credits World Civilization. (FDM 216—F.D. majors only.)

#### 418 Costumes of South and Southeast Asia (3) I, II (3L)

**Umbel**

Historical development and characteristic features of traditional and folk costumes and fabrics of India, Pakistan, Burma, Thailand, Cambodia, Malaysia, Indonesia, the Philippines. Relation to customs and culture; impact of Western influence on contemporary dress. Pre: 6 credits World Civilization. (FDM 216—F.D. majors only.)

#### 419 Apparel Design Studio (4) (1 1/2-hr L, 2 2-hr Lb)

**Chung**

Creative design including sketching, draping, blocking, and construction of muslin proofs and ready-to-wear collection. Pre: 310, 316, 330, 416 or 418.
420 Apparel Design Studio (4) II (1 2-hr L; 2 2-hr Lb) Furer
Creative design for portfolio development, apparel engineering, and advanced pattern grading. Pre: 419.

425 Fashion Sales Promotion (3) I (3L) Sankey
Principles and procedures in promoting the sale of fashion merchandising. Comprehensive analysis of fashion advertisements, displays, publicity and other sales presentations of retail and manufacturing firms. Pre: 125, 327.

429-430 Fashion Coordination Studio (v) Yr (arr)
Analysis and application of principles and procedures relating to coordination of fashion apparel. Supervised independent and group projects. Pre: 425 and consent of instructor.

499 Directed Reading and Research (v) I, II Herrick

5. Foods in Industry and Research. This option is designed for training technicians and scientists in areas such as research, product development and evaluation, and quality control. It includes a number of courses contained in the undergraduate curriculum minimum standards adopted by the Council of the Institute of Food Technologists (IFT). The option prepares the student for membership in the IFT and for graduate study in food science and technology.

6. Consumer Services in Foods. This option prepares the student for positions in commercial food companies, consumer relations, product promotion, and publicity. Persons with knowledge of the food industry and with skills in communication are sought by magazines, newspapers, radio, television, and other food-related businesses and government agencies.

Dietetics

First Year

Credits

First Semester

*Chem 113 3
*Chem 115 3
*Math 205 3
*Communications 3
*World Civilization 3
*Humanities 3

Second Semester

*Chem 114 3
*Chem 116 3
*Chem 117 3
*Chem 120 3
*Chem 121 3

Second Year

*Chem 241 3
*Chem 242 3
*Chem 243 3
*Biol 220 3

Third Year

*FNS 383 3
*FNS 384 3
*FNS 385 3
*FNS 386 3
*FNS 387 3

Fourth Year

*FNS 477 3
*FNS 485 3
*FNS 486 3
*FNS 487 3

Directed Reading and Research (v) I, II Herrick

Suggested electives: Biomed 302; Ag Eng 333; Mgt 341; PIR 351; FNS 482.
### COMMUNITY NUTRITION

#### First Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credits</th>
<th>Second Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Chem 113</td>
<td>3</td>
<td>*Chem 114</td>
<td>3</td>
</tr>
<tr>
<td>*Chem 115</td>
<td>1</td>
<td>*Chem 116</td>
<td>1</td>
</tr>
<tr>
<td>*Math 205</td>
<td>3</td>
<td>*FNS 181</td>
<td>3</td>
</tr>
<tr>
<td>*Communications</td>
<td>3</td>
<td>*Micro 130</td>
<td>3</td>
</tr>
<tr>
<td>*World Civilization</td>
<td>3</td>
<td>*Micro 140</td>
<td>1</td>
</tr>
<tr>
<td>*Humanities</td>
<td>3</td>
<td>*World Civilization</td>
<td>3</td>
</tr>
<tr>
<td>*Psy 100</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Second Year

<table>
<thead>
<tr>
<th>Credits</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td></td>
</tr>
</tbody>
</table>

#### Third Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>*FNS 383</td>
<td>6</td>
</tr>
<tr>
<td>*Biomd 301</td>
<td>4</td>
</tr>
<tr>
<td>*Mgt 301</td>
<td>3</td>
</tr>
<tr>
<td>*Acc 201</td>
<td>16</td>
</tr>
</tbody>
</table>

#### Fourth Year

<table>
<thead>
<tr>
<th>Credits</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>

---

#### NUTRITIONAL SCIENCE

#### First Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credits</th>
<th>Second Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Chem 113</td>
<td>3</td>
<td>*Chem 114</td>
<td>3</td>
</tr>
<tr>
<td>*Chem 115</td>
<td>1</td>
<td>*Chem 116</td>
<td>1</td>
</tr>
<tr>
<td>*Math 205</td>
<td>3</td>
<td>*FNS 181</td>
<td>3</td>
</tr>
<tr>
<td>*Communications</td>
<td>3</td>
<td>*Micro 130</td>
<td>3</td>
</tr>
<tr>
<td>*World Civilization</td>
<td>3</td>
<td>*Micro 140</td>
<td>1</td>
</tr>
<tr>
<td>*Humanities</td>
<td>3</td>
<td>*World Civilization</td>
<td>3</td>
</tr>
<tr>
<td>*Psy 100</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Second Year

<table>
<thead>
<tr>
<th>Credits</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>

#### Third Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credits</th>
<th>Second Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Physics 170</td>
<td>4</td>
<td>*Physics 272</td>
<td>3</td>
</tr>
<tr>
<td>*Physics 171</td>
<td>1</td>
<td>*Physics 273</td>
<td>1</td>
</tr>
<tr>
<td>*Biomd 301</td>
<td>4</td>
<td>*Biomd 302</td>
<td>3</td>
</tr>
<tr>
<td>*Chem 133</td>
<td>2</td>
<td>*Ag Bio 402</td>
<td>3</td>
</tr>
<tr>
<td>*Chem 134</td>
<td>2</td>
<td>*Bioch 441</td>
<td>1</td>
</tr>
<tr>
<td>*Ag Ec 434</td>
<td>3</td>
<td>*Ag Bio 403</td>
<td>3</td>
</tr>
<tr>
<td>*FNS 476 or 492</td>
<td>16</td>
<td>*Bioch 442</td>
<td>1</td>
</tr>
</tbody>
</table>

#### Fourth Year

<table>
<thead>
<tr>
<th>Credits</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>

---

#### FOOD SERVICE MANAGEMENT

#### First Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credits</th>
<th>Second Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Chem 113</td>
<td>3</td>
<td>*Chem 114</td>
<td>3</td>
</tr>
<tr>
<td>*Chem 115</td>
<td>1</td>
<td>*Chem 116</td>
<td>1</td>
</tr>
<tr>
<td>*Math 205</td>
<td>3</td>
<td>*FNS 181</td>
<td>3</td>
</tr>
<tr>
<td>*Communications</td>
<td>3</td>
<td>*Micro 130</td>
<td>3</td>
</tr>
<tr>
<td>*World Civilization</td>
<td>3</td>
<td>*Micro 140</td>
<td>1</td>
</tr>
<tr>
<td>*Humanities</td>
<td>3</td>
<td>*World Civilization</td>
<td>3</td>
</tr>
<tr>
<td>*Psy 100</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Second Year

<table>
<thead>
<tr>
<th>Credits</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>

#### Suggested electives:

- Biomd 302: Ag Eng 333; Mgt 341; PIR 351; HD 343, 345; FNS 482.
## Foods in Industry and Research

### First Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credits</th>
<th>Second Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>†Chem 113</td>
<td>3</td>
<td>†Chem 114</td>
<td>3</td>
</tr>
<tr>
<td>†Chem 115</td>
<td>1</td>
<td>†Chem 116</td>
<td>1</td>
</tr>
<tr>
<td>†Math 205</td>
<td>3</td>
<td>†Math 206</td>
<td>3</td>
</tr>
<tr>
<td>*Communications</td>
<td>3</td>
<td>*World Civilization</td>
<td>3</td>
</tr>
<tr>
<td>*World Civilization</td>
<td>3</td>
<td>†FNS 181</td>
<td>3</td>
</tr>
<tr>
<td>*Humanities</td>
<td>3</td>
<td>*Soc Sci</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*University core.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>†Required for this option. May be taken only for letter grade.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suggested electives: Chem 351-352, 353, 333; Math 231; Fd Sc 201, 411, 440; Biomd 301; FNS 475.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Second Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credits</th>
<th>Second Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>†Chem 243</td>
<td>3</td>
<td>†Chem 244</td>
<td>3</td>
</tr>
<tr>
<td>†Chem 245</td>
<td>1</td>
<td>†Chem 246</td>
<td>1</td>
</tr>
<tr>
<td>FNS 276</td>
<td>3</td>
<td>FNS 376</td>
<td>3</td>
</tr>
<tr>
<td>†FNS 285</td>
<td>3</td>
<td>*Humanities</td>
<td>3</td>
</tr>
<tr>
<td>*Humanities</td>
<td>3</td>
<td>*Soc Sci</td>
<td>3</td>
</tr>
<tr>
<td>†Ag Econ 434</td>
<td>3</td>
<td>*Soc Sci</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>16</td>
<td></td>
<td>16</td>
</tr>
</tbody>
</table>

### Third Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credits</th>
<th>Second Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>†Physics 170</td>
<td>4</td>
<td>†Physics 272</td>
<td>3</td>
</tr>
<tr>
<td>†Physics 171</td>
<td>1</td>
<td>†Physics 273</td>
<td>3</td>
</tr>
<tr>
<td>†Biol 220</td>
<td>5</td>
<td>†Micro 351</td>
<td>4</td>
</tr>
<tr>
<td>†Chem 133</td>
<td>2</td>
<td>†Ag Bio 402 or</td>
<td></td>
</tr>
<tr>
<td>†Chem 134</td>
<td>2</td>
<td>Bioch 441</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>†Ag Bio 403</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bioch 442</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>†Fd Sc 401</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>15</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Fourth Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credits</th>
<th>Second Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>†FNS 477 or 492</td>
<td>3</td>
<td>†FNS 476 or 497</td>
<td>3</td>
</tr>
<tr>
<td>†Fd Sc 403</td>
<td>3</td>
<td>†Fd Sc 430</td>
<td>3</td>
</tr>
<tr>
<td>†FNS 499</td>
<td>2</td>
<td>†Ag Eng 333</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>8</td>
<td>Electives</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>16</td>
<td></td>
<td>16</td>
</tr>
</tbody>
</table>

*University core.
†Required for this option. May be taken only for letter grade.
Suggested electives: Art 207; Jour 205; Ed EC 314; Ed EP 311; Mkt 300, 321, 331, 341, 381; HD 231, 232.

## ConSUMER SERVICES IN FOODS

### First Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credits</th>
<th>Second Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>†Chem 133</td>
<td>3</td>
<td>†Chem 114</td>
<td>3</td>
</tr>
<tr>
<td>†Chem 115</td>
<td>1</td>
<td>†Chem 116</td>
<td>1</td>
</tr>
<tr>
<td>†Chem 116</td>
<td>1</td>
<td>†Math 205</td>
<td>3</td>
</tr>
<tr>
<td>†Math 206</td>
<td>3</td>
<td>†FNS 181</td>
<td>3</td>
</tr>
<tr>
<td>*Communications</td>
<td>3</td>
<td>†Sp 145</td>
<td>3</td>
</tr>
<tr>
<td>*World Civilization</td>
<td>3</td>
<td>†World Civilization</td>
<td>3</td>
</tr>
<tr>
<td>†Art 101</td>
<td>3</td>
<td>†Psy 100</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>16</td>
<td></td>
<td>16</td>
</tr>
</tbody>
</table>

### Second Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credits</th>
<th>Second Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>†Chem 241</td>
<td>3</td>
<td>†Chem 133</td>
<td>2</td>
</tr>
<tr>
<td>†Chem 242</td>
<td>1</td>
<td>†Chem 134</td>
<td>2</td>
</tr>
<tr>
<td>†FNS 276</td>
<td>3</td>
<td>†FNS 285</td>
<td>3</td>
</tr>
<tr>
<td>†Ag Econ 434 or</td>
<td></td>
<td>†Art 107</td>
<td>3</td>
</tr>
<tr>
<td>Psy 113</td>
<td>3</td>
<td>*Humanities</td>
<td>3</td>
</tr>
<tr>
<td>*Humanities</td>
<td>3</td>
<td>*Soc Sci</td>
<td>3</td>
</tr>
<tr>
<td>*Soc Sci</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>16</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Food and Nutritional Sciences (FNS) Courses

### Department Office
Henke Hall 224

**Professors:** Lichton, Orr, Van Reen.
**Associate Professors:** Hikler, Standal, Weddle, Young.
**Assistant Professors:** Ching, Clagg, Maretzki, Wenkam.
**Instructor:** Helber.

181 **Principles of Food Preparation**
(3 I, II 2L, 2-3 hr Lb) Ching, Helber, Weddle
Scientific principles underlying preparation of foods to yield products of standard quality. Acquaintance and working knowledge of all types of foods and food groups; use and care of equipment and appliances. Prerequisite for all advanced foods courses.

276 **Meal Management**
(3 I, 2-3 hr Lb) Weddle
Planning and preparation of nutritious and aesthetic meals using a variety of food patterns. Selection and care of table accessories; use and care of equipment; table service and etiquette; management of time, energy and money. Pre: 181 or consent of instructor.

285 **Introduction to Human Nutrition**
(3 I, II 2 L, Lb) Maretzki
Introduction to the science of human nutrition and its practical application to the problems of food selection. Integration of behavioral and biological concepts as they relate to health and nutritional status emphasized.

376 **Advanced Foods**
(3 I, II 2L, 2-3 hr Lb) Weddle
Comparative food studies with emphasis on physical and chemical variables. Pre: 181, 276, Chem 113-114 or consent of instructor.

383 **Principles of Quantity Food Purchasing and Preparation**
(6 I, II 3L, 3-4 hr Lb) Clagg
Lectures, demonstrations, experimental and production laboratories to illustrate the principles of food purchasing, preparation techniques, menu planning, production control, work methods analysis, employee training, elementary food cost controls, quality analysis of food processed in quantity. Emphasis on meats, poultry, fish, egg and dairy products, fruits and vegetables, starch and bakery products. Pre: 181, 276.
384 Food Facilities System Planning (3) II (3L) Clagg
Analysis of work methods using time and motion study. Layout, design, procurement of furnishings for dining and kitchen facilities and auxiliary space. Pre: 383.

389 Food and Beverage Management (3) II (1L, 2 2-hr Lb) Clagg
Study of gourmet and international cookery with emphasis on the Pacific; study of beverages accompanying the various cuisines; table setting and service appropriate to the menus prepared. Laboratory experience and field trips. Pre: 181, 276.

475 Principles and Practices of Human Nutrition (3) I, II (3L) Young
Basic principles and practices of nutrition. Designed for nonmajors and students in nursing and other allied health professions. Includes topics such as effects of new developments in food production and processing on nutrients. Special nutritional needs of various age groups, and selection of foods for normal and therapeutic diets. Pre: Chem 113-114, one semester of biology or zoology, or consent of instructor.

476 Cultural Aspects of Food Habits (3) II (3L) Wenkam
Cultural, socio-psychological influences on food habits. Problems in changing food habits examined in terms of social and behavioral sciences.

477 Food Composition (3) I (1L, 2 3-hr Lb) Wenkam
Analytical determinations of the nutritive value of foods, and interpretation of results in light of natural variation; modifications introduced by man: metabolism of food. Pre: Math 134 and Chem 133, 134 or equivalents; consent of instructor.

481 Food Cost Accounting (2) I (2L) Clagg
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: 383: Acc 201.

482 Seminar in Food Service Operation Problems (3) II (3L) Clagg
Scientific methods of problem solving and decision making in analysis of case problems in public food service organizations. Pre: senior standing in major field or consent of instructor.

483 Field Experience (v) I, II (arr) Staff
Organized on-the-job learning experience in dietetics, institution management, foods in industry and research, consumer services in foods, community nutrition, or nutrition education programs supervised by employer and coordinating instructor.

484 Food Merchandising (3) I, II (2L, 1 3-hr Lb) Clagg
Principles of menu planning, interior lighting effects and atmosphere as they relate to food. Plate arrangement and size, garnishment, basic photographic principles, art skills as they relate to color combinations. Floral arrangement, draping, etc., and basic printing information for menu layout. Pre: 276, or 376, or 383.

485-486 Advanced Human Nutrition (3-3) I, II (Yr) (3L) Lichton
Biochemistry and physiology of nutrition. Fundamental concepts of human nutrition: behavioral aspects and applications to community health. Pre: 285: Biomd 301: AgBio 402 or Biochem 441: or equivalents, or consent of instructor.

490 Diet and Disease (3) II (2L, 1 2-hr Lb) Staff

492 Product Evaluation (3) I (2L, 1 4-hr Lb) Maretzki
Product evaluation as a tool in the development of food products from concept to consumer. Psycho-physical scaling, laboratory difference tests, descriptive analysis of food attributes of odor, flavor, color and texture, correlation of subjective and objective test methods, consumer testing, and market research techniques. Pre: basic psychology, statistics; consent of instructor.

497 Community Nutrition (3) II (2L, 1 2-hr Lb) Maretzki
Translation of nutrition research into informal education in the community. Consideration of community needs and politics, interagency coordination and training of para-professionals. Pre: 285.

499 Directed Reading and Research (v) I, II (arr) Van Reen

Graduate Courses in Nutrition (FNS)

676 Nutritional and Metabolic Diseases (2) II (2L) Lichton
Survey of disease mechanisms in undernutrition, overnutrition, malnutrition, fluid imbalances; selected examples of disorders, or inborn errors of metabolism. Pre: 485-486 or consent of instructor. (Alt yrs: offered 1973-74)

677 Nutrition in Reproduction, Growth, Development and Senescence (3) I (3L) Standal
Nutritional requirements as altered by physiological stresses of pregnancy, periods of growth and aging; emphasis on mechanisms. Pre: 485-486 or equivalent. (Alt yrs: offered 1973-74)

679 Mineral Metabolism (2) I (2L) Van Reen
Nutritional requirements for minerals during life cycle; functioning of minerals in biological systems; relationship to disease states. Pre: 485-486 or consent of instructor. (Alt yrs: offered 1973-74)

681 Seminar (1) I Van Reen
Student presentations of literature reviews and research. Pre: consent of instructor. May be repeated.

682 Nutritional Status (3) I (1L, 2Lb) Standal

684 Lipids in Health and Disease (2) I (2L) Young
Young lipid metabolism and nutrition with particular emphasis on cardiovascular disease. Pre: 485-486 or consent of instructor. (Alt yrs: offered 1973-74)

685-686 Advanced Human Nutrition (2-2) I, II (Yr) Staff
In depth discussion of selected topics in biochemistry and physiology of nutrition. Fundamental concepts and applications of nutrition. May be taken concurrently with 485-486.

687 Advanced Nutrition Laboratory (3) II (1L, 2Lb) Staff
Designing and execution of nutrition experiments. Evaluation and interpretation of the data. May be taken concurrently with 485-486.

688 Vitamins in Health and Disease (2) I (2L) Hilker
Vitamins: their properties, biochemical functions, interrelationships and disease conditions. Pre: consent of instructor. (Alt yrs: offered 1972-73)

699 Directed Reading and Research (v) I, II Staff

800 Thesis (v) I, II Staff

Home Economics (HE)

Students who select options within the department of home economics may choose an approach in which knowledge of family life in our society and a general home economics background prepares them to work in various people-serving capacities or teach persons of various age levels in different organizations and agencies.

OPTION I. Home Economics: Community Services. This option permits an individualized approach to preparation for positions in which family decision making and consumer competency are used to improve the quality of living for individuals and families in different socio-economic situations. A common core of home economics subject matter is supplemented with individually chosen additional courses in both human resources development and in areas giving understanding of various social conditions. This option is directed toward preparation for a variety of positions such as in Cooperative Extension Service, community service organizations and agencies, or those concerned with consumer services.
OPTION II. Home Economics Education: Secondary School Teaching. Students interested in home economics education apply for entrance to the College of Education at the end of their sophomore year. They complete the requirements for a Bachelor of Education degree and Professional Diploma (a five-year program) in the College of Education. The B.Ed. Home Economics Education program meets the home economics requirements for a vocational home economics teacher of Hawaii.

Option I

HOME ECONOMICS: COMMUNITY SERVICES

General Education Requirements .......... Credits
Communications .................................. 3
Quantitative and Logical Reasoning .......... 3
World Civilizations ..................................... 6
Humanities (Art 101 is required) ............. 9
Natural Sciences .................................. 9-12
Social Sciences (Econ 120 is required) .... 39-42

Cultural Pursuit
3 semester courses of coordinated or related subject matter which has on-going cultural significance for the student .......... 9

Professional Preparation
HD 231-232 .................................. 6
FNS 285 .................................. 3
FDM 213 .................................. 3
HE 260 .................................. 3
HE 357 .................................. 3
HE 359 .................................. 3
HE 475 .................................. 3
Additional courses in HRD selected for individual emphasis .................................. 18-24

Social Conditions or Environment
3 semester courses directed toward knowledge of social conditions .......... 9

Electives .................................. 20-26

Total Credits B.Ed. ............. 128

(Work to be completed in the fifth year)

I. Professional Education Core .................................. 24
   Ed EF 310 Foundations of American Educat. .... 3
   Ed EP 311 Psychological Foundations ............. 3
   Ed CI 312 Foundations in Curr. and Instr. .... 3
   Ed CI 371 Home Economics Education .......... 3
   Ed CI 390 Student Teaching ....................... 10
   Ed CI 391 Seminar for Student Teachers .... 2

II. Academic Major and related courses in a teaching field ................. 45
   FDM 113 Basic Clothing Construction .......... 3
   FDM 213 Textiles .................................. 4
   FDM — Elective .................................. 3
   FNS 275 Principles of Food Preparation .......... 3
   FNS 285 Introduction to Human Nutrition .... 3
   FNS 375 Meal Management ......................... 3
   HD 231 Intro. to Human Development .......... 3
   HD 341 Family Relationships ...................... 3
   HE 153 Mgt. of Family Resources .............. 3
   HE 260 Fam. Mgt. and Decision Making .......... 3
   HE 267 Home Furnishings ......................... 3
   HE 357 Consumer Economics ...................... 3
   HE 363 Housing and Society ...................... 3
   FDM, FNS, HD, and/or HE electives .......... 5

IV. Electives .................................. 3

Total Credits P.D. .................. 30
Credits for Program of Studies for Secondary Education Major in Home Economics .................. 158

Department Office: Miller Hall 7

Professor: Dale. Lecturer: Kimura.

153 Management of Family Resources (3) I Dale
Introduction to family management that includes identification and use of some family resources and the implications for family and societal welfare.

260 Family Management and Decision Making (3) I, II Dale
Integrated approach to management in the family, emphasizing values and goals of families and their relationships to family functioning and use of resources. Management and decision making concepts applied to family situations in different socioeconomic settings.

267 Home Furnishings (3) I, II Kimura
Selection, arrangement, and coordination of the various aspects of home furnishings to meet family needs. Development, general features, and design.

357 Consumer Economics (3) I, II Staff
Role of family as consumer unit in the economy. Pre: Econ 120.

359 Home Management Seminar (3) II Dale
Exploration of literature and research associated with family management and decision making. Pre: 260.
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.

Human development majors are prepared for entry-level positions in the human services, and for graduate work in such areas as education, social work, public health, personnel and guidance, and child development.

Admission to upper division major status requires a minimum grade-point average of 2.0. Successful completion of HD 231-232 and HD 300 or 345.

The junior program is made up of HD 396 (3), HD 393 (3), HD 349 (4), HD 390 (3), and HD 391 (3), taken concurrently. For seniors, HD 393 and HD 349 are required. Other upper-level courses can be selected in accordance with specific fields of interest. For seniors selecting HD 449, fieldwork placements are designed to meet individual needs and interests.

Those students planning to major in human development in conjunction with early childhood education should complete 9 hours of introductory human development work while in the lower division.

Students wishing to be considered for admission into the human development program should apply through the department chairman and complete the required forms. Those applying after the beginning of the fall semester in their junior year may need to attend an additional semester.

Department Office: Makai Campus 8

Associate Professors: Lenzer, Wittermans.
Assistant Professors: Fargo, Meredith, Schwitters.
Lecturers: Alailima, Larsen, Mendenhall.

196 Introductory Seminar in Student Development (2) I, II Robb Exploration of issues in higher education, both practical and philosophical. Emphasis on student development and student roles within a setting of higher education. Self-assessment of growth and perception is encouraged. Special attention given to problems of the disadvantaged and handicapped student. Pre: consent of instructor.

231 Introduction to Human Development (3) I, II Schwitters, Meredith Principles of development from conception to puberty. Focus on the interrelation of physical, cognitive, and social-emotional aspects of the individual during this period.

232 Introduction to Human Development (3) I, II Schwitters, Meredith, Lenzer Principles of development from puberty to death. Focus on the interrelation of physical, cognitive, and social-emotional aspects of the individual during this period. 231 and 232 need not be taken in sequence.

300 Interpersonal Relations (3) I, II

Multidisciplinary approach to interpersonal relations within a variety of human groups and settings within the social system.

Life Cycle Sequence:
The following courses explore in depth common themes in human development knowledge as they relate to specific stages of the life cycle. Within each course, students will consider growth and maturation processes in their social and cultural contexts; current research, theory and issues; and usefulness of human development knowledge in this phase of the life cycle. Any course can be taken separately. Pre: 231 and 232 or equivalent.

310 Infancy (3) I, II Meredith

315 Childhood (3) I, II Mendenhall

320 Adolescence and Young Adulthood (3) I, II Kraemer

325 Middle Age (3) I, II Lenzer/Allen

330 Old Age (3) I, II Lenzer

341 Family Relationships (3) I, II Lampard

Study of courtship, marriage, and family relationships in the modern setting. Role confusion and conflict, freedom and authority and value of the family to the individual explored.

343 Human Needs and Community Resources (3) I, II Alailima

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 equivalent.

345 Group Leadership (3) I, II Allen, Larsen

Sociological and psychological concepts pertaining to individual motivation and internal and external group forces. Emphasis on application of knowledge and group techniques in a variety of human development settings.

349 Field Experience in Human Development (v) I, II Allen

Application of human development principles emphasizing group participation and leadership development. Assignments made in a variety of organizations and agencies by departmental field work coordinator. Emphasis is on learning through experience in association with professionals in the community. Repeatable for credit.

350 Male/Female Identity and Relationships (3) I, II Niyekawa-Howard

Interdisciplinary approach to study of sex-role differentiation and convergence throughout the life cycle, masculine/feminine identity as part of the self concept, and male/female relationships in family, work and society. Pre: 231-232 or equivalent.

355 Parent-Child Relationships (3) I, II Fargo

Adult-child interaction and its implications for child and parent growth and development through the family life cycle. Pre: 231-232 or equivalent.

390 Survey of Human Development Theory (3) I, II Fargo, Mendenhall

Multidisciplinary concepts that provide insight into the complex process of human development; primary focus on critical issues: nature of human nature and development, motivation, socialization as a process, family, culture, race and class as variables in that process. Pre: 231-232, 300 or 345, or instructor's permission.
Cooperative Extension Service in Agriculture and Human Resources Development

This off-campus noncredit educational 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 and urban 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, Kealakekua, Honokaa, Kamuela; Maui: Wailuku, Kula; Molokai: Kaunakakai.

Improved farm and home practices are taught by means of practical demonstrations before University extension clubs, 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.

Hawaii Agricultural Experiment Station

The facilities of the station, including the research staff and the field laboratories, are an important part of 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 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, Hamakua and Waimea; the Maui Branch Station with farms at Haleakala and Kula; the Kauai Branch Station. Modern research facilities for poultry and animals are available at the Animal Sciences Research Center at Waialee, Oahu.
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, agronomy and soil science. American studies, anthropology, Asian languages (Japanese), astronomy, biochemistry, biophysics, botanical sciences, chemistry, drama and theatre, economics, educational psychology, electrical engineering, entomology, genetics, geography, geology and geophysics, history, horticulture, linguistics, mathematics, meteorology, microbiology, ocean engineering, oceanography, pharmacology, philosophy, Western, Asian, and comparative, physics, physiology, political science, psychology, sociology, and zoology.

(2) The master's degree in agricultural economics, agricultural engineering, agronomy and soil science. American studies, anatomy, animal sciences, anthropology, architecture, art, Asian languages (Japanese, Chinese), Asian studies, astronomy, biochemistry, biophysics, botanical sciences, business administration, chemistry, civil engineering, classics, drama and theatre, economics, educational administration, educational communications, educational foundations, educational psychology, electrical engineering, elementary education. English, English as a second language, entomology, food science, French, genetics, geography, geology and geophysics, German, history, horticulture, information and computer sciences, library studies, linguistics, mathematics, mechanical engineering, meteorology, microbiology, music, nursing, nutrition, ocean engineering, oceanography, Pacific islands studies, pharmacology, philosophy, physics, physiology, political science, psychology, public health. Russian, secondary education, social work, sociology, Spanish, speech-communication, speech pathology and audiology, urban and regional planning, and zoology.

Students may likewise earn graduate credit at the University for transfer to other institutions.

To obtain the 1973-74 issue of the Graduate Catalog send your order and payment in U.S. dollars or International Postal Money Order to the University of Hawaii Bookstore, 1760 Donaghho Road, Honolulu, Hawaii 96822. (U.S. $1.25 surface mail: $2.00 airmail. Foreign countries within these areas: Africa and Asia—$2.50; Europe and South America—$2.50; Canada. Central America and Caribbean—$2.00.) Available July 1973.

For these programs see the Graduate Catalog or bulletins of the respective schools.
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.

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, 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. 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. The normal basic curriculum includes the following courses, to be taken generally in the order given: 610, 601, 605, 678, 615, and 647 or 650. School librarians, in addition, will take four of the following courses: 607, 642, 681, 682, 683, 684, 685, 696.

Academic Advisory Service. The office of the dean provides academic advice and placement counseling.

*For application forms or for more information write to: The Graduate School of Library Studies, University of Hawaii, Honolulu, Hawaii 96822.

Library Studies (LS)

School Office: Sinclair Library 106

Professors: Ayrault, Harris, Schofield, Stevens, Suzuki, Vann.

Assistant Professors: Abrera, Haas, Lane.

Lecturers: Adams, Fristoe, Hurd, Kamida, Kane, Nunn, Saito, Taylor, West, Wheelwright.

601 Bibliography and Reference Sources (3) I, II

Staff

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) I, II

Harris, Saito

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) I, II

Abrera, Ayrault, 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) I, II

Abrera, 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.

607 Organization of Non-Book Materials (3) II

Ayrault

Study of the principles and practices currently evolving for the organization for use of films, filmstrips, recordings and related media in libraries. Pre: 605.

610 Social Functions of Libraries (3) I, II

Adams, Vann, West

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) I, II

Suzuki, Taylor

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.

618 Government Documents (3) I

Stevens

Sources, types, uses of government documents, both state and federal; their acquisition and organization for use.
641 Audio-Visual Services in Libraries (3) I, II  
School of Library Studies
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) I, II  
Abrera, Vann
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) I, II  
Fristoe, Suzuki
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) II  
Kane
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. Pre: 601.

662 Business and Economic Literature (3) I  
Kane
Bibliographical 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.

664 Abstracting and Indexing for Information Services (3) II  
Abrera, Vann
Principles, practices, and development of abstracting and indexing services. Integrating these into the complex of special library operations, with emphasis upon current awareness and the retrospective searching needs of clientele. Analyze various types of abstracts, their organization and uses, and develops skill in preparation of abstracts and indexes.

665 Special Libraries (3) II  
Wheelwright

670 Literature Searching and Documentation (3) I, II  
Abrera, Haas
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. Pre: 605.

678 Reader Services (3) I, II  
Haas, 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) I, II  
Staff
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) I, II  
Hurd

683 Service for Children and Young People (3) I, II  
School of Library Studies
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.

684 School Library-Media Center Problems (3) I  
School of Library Studies
Organization and administration of service to meet needs of the individual school media center program as well as larger units of service at district, county, regional, and state levels: impact of changes in curriculum and instruction on media centers; innovative and expanded collections of materials required to support changes surveyed and new or modified personnel requirements and new administrative approaches to service are analyzed and discussed. Pre: 642.

685 Traditional Literature and Oral Narration (3) I, II  
Staff
Analysis and evaluation of traditional literature of various countries emphasizing the Pacific Ocean area and Asia with attention to values and use as source material for storytelling. Instruction and practice in the selection, adaptation, and presentation of stories.

689 Special Topics in Librarianship (3) II  
Staff
Course will reflect interests of visiting and permanent faculty and will concentrate on one major topic of current interest such as library service to disadvantaged, library and information networks or organization on non-book materials.

696 Field Seminar (3) Yr I, II  
Staff
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) I, II  
School of Library Studies
Governmental and fiscal policies and programs, personnel administration, policy making, buildings and equipment for libraries in Asian countries.

705 Asian Reference Sources (3) I, II  
School of Library Studies
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) I  
Suzuki

715 Seminar in Library Development (3) I  
Nunn
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.

716 International Publishing and Bibliography (3)  
Vann
Survey of the problems of selecting and acquiring foreign materials for the collections of American and Asian libraries. Covers publishing programs of international organizations, such as the United Nations, international agreements affecting the acquisitions programs of libraries. Surveys the publishing and bookselling programs of various countries (excluding Britain, Canada, and the U.S.). Examines selected representative bibliographic sources of various countries.
The College of Continuing Education and Community Service, 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, formal and informal courses, lyceums, lectures, and educational experiences designed for particular purposes or groups. These continuing education programs are available to all interested adults.

For students who cannot, because of time or distance, attend courses regularly scheduled on campuses, the college provides educational opportunities at various other places and times on Oahu and the other islands. Such courses are open to all high school graduates.

In addition the College administers the academic affairs of students who have been admitted to the University, but who 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 course they choose.

The activities of the College are organized under five major programs.

**Courses and Curricula**

To serve groups of students with varying needs and backgrounds; times, schedules, and formats of courses are similarly varied.

**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, including sufficient courses to complete all requirements for bachelor’s degrees in accounting, management, history, mathematics, psychology or sociology. 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 Hickam Air Force Base, Pearl Harbor, Wheeler Air Force Base, and other off-campus locations. With longer class periods, semester-length courses are completed in ten weeks.

To serve the needs of teachers, another program of courses is scheduled each fall and spring at public schools on Oahu, Maui, Kauai, Molokai, and Lanai. With the cooperation of the State Department of Education, advanced education courses and in-service courses designed to upgrade the teachers’ subject-area competence are offered. On Oahu these classes usually meet in the late afternoon; on other islands, they often meet on weekends with faculty members commuting from the Manoa campus.

In addition to its program within the state, the College operates overseas centers at Samoa, Kwajalein and Midway islands. Selected courses—credit and noncredit—are given in an effort to meet the needs of personnel, both military and civilian, stationed in these areas.

**Noncredit 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 occupational areas, to prepare candidates for professional licensing examinations or to assist with special local problems. Noncredit courses are generally scheduled in the evening.

Any person with the equivalent of a high school education who can profit from these courses may enroll. Students who attend regularly receive certificates upon completion of their course of study.

The Hawaii English Language Program (HELP) offers intensive English language training for nonnative speakers, with basic, intermediate, and advanced classes in listening, speaking, reading and writing.

Under federal contracts the College schedules credit courses in the Navy’s PACE program for shipboard personnel.

Individual course offerings at times and places suited to special groups of students can be arranged, either on a credit or noncredit basis.

**Community Service Programs**

A variety of informal presentations in different media respond to cultural interests throughout the state.

**Lyceum Program** provides informal ongoing education through cultural presentations, including a touring subscription series of dance, drama, literary and musical events presented annually throughout the state, and unique performing arts presentations on the Manoa campus.

**Speakers Bureau** provides single speakers for organizations upon request (a $10 fee for each engagement is charged), and plans and presents appropriate lecture series, film-discussion series, and other cultural program series in cooperation with military services, community colleges, Hilo College, libraries and community centers, and in culturally-deprived areas of the Pacific (Kwajalein).
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 Aerial Radiological Monitoring, Radiological Defense Officer, Civil Defense Management, Plans and Operations, and Emergency Operating Center Simulation Workshops. The program is also responsible for conducting conferences in civil defense for government, business and industry. Courses and conferences are offered on all islands.

Conference Program serves community groups and University departments by providing planning and administrative services for conferences, institutes, and workshop programs. Services include assistance in planning, preparation and administration of budgets, procurement of resource persons, arrangements of travel, living accommodations and facilities, preparation of final financial and proceeding reports.

Manuscript Criticism Service. Writers of fiction, nonfiction, poetry, and drama may submit manuscripts for professional opinion and advice of qualified faculty members. Reading fees are available on request.

Mass Media Programming develops television programs, films, slide presentations and all related media areas for broadcast or other educational distribution.

Kapaa Community Service Project is a pilot program for small communities which lack the advantage of having resources readily available from the University. This project tries to evaluate the needs and interests of the community and provides a comprehensive program which includes the cultural and performing arts as well as focusing on identified economic-social issues.

Center for Governmental Development

The center was authorized by the state legislature to provide in-service training, scholarships, internships, and other means to aid in the development of government officers and employees. The center presents and coordinates courses, workshops, seminars and programs in public administration and serves as a clearinghouse for information and training in government-management practices, techniques and new technologies.

Center for Labor-Management Education

The center, instituted in 1965, provides 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 weekend institutes, conference and staff training programs, as well as research into areas of specific concern to labor and management.

Special Programs

These programs develop and facilitate continuing education opportunities directed to target groups in the community with unusual needs for advising or administrative services.

Continuing Education for Women offers academic and career planning services to women entering or re-entering the University. CEW works through the University system and seeks to facilitate a successful academic experience for mature women. Each semester, CEW conducts a twelve-week seminar, "You and the University," to assist women in their return to school. Individual counseling is also available at Suite 301, 931 University Avenue.

Study Abroad Office is responsible for coordinating all study abroad opportunities in the University system as a service for the University Study Abroad Committee. It sponsors a variety of programs ranging from short-term study tours to academic-year programs at cooperating mainland and foreign institutions. While primary emphasis is placed on undergraduate and graduate needs, special programs may be designed to assist the training of various professional groups. While not overlooking other areas, primary planning has stressed Hawaii's long-term concerns with Asia and the Pacific.

Announcements and other information concerning these varied programs are available from the College upon request.
The East-West Center is an international educational institution established in Hawaii by the United States Congress in 1960. Formally known as the "Center for Cultural and Technical Interchange Between East and West," the institution brings men and women together from Asia, the Pacific area and the United States to exchange ideas in a variety of cooperative programs of study, professional development and research.

The federally-funded East-West Center is administered by the University of Hawaii Board of Regents to further the broad national goal of fostering better relations and mutual understanding among the peoples of the area. Each year nearly 2,000 degree students, mid-career professionals seeking further knowledge and skills in short-term projects, and research-oriented senior fellows and fellows study, work and confer together in East-West Center programs. They are supported by annual grant appropriations from the Congress, supplemented in some fields by cost-sharing contributions from Asian/Pacific governments, regional agencies and private foundations. Student scholarships and fellow grants are awarded on the basis of two Asian/Pacific participants for each American grantee.

Academic instruction is provided for degree students, predominantly at the graduate level, by the University of Hawaii at Manoa. Degrees are awarded by the University. Some East-West Center program staff members hold joint faculty appointments with the University. Professional study and training programs and research are directed by Center staff members. Fundamental to Center goals is the interchange of information, ideas and beliefs in an atmosphere of academic freedom. The Center's multinational staff, in association with the University of Hawaii, provides the basis for growing cooperative arrangements with universities and other institutions in Asia, the Pacific area and the United States mainland. Center programs combine theory and practice in providing present and future leaders the opportunity for dealing with mutual problems. The Center offers other opportunities, including field education, which extend beyond formal course work. Academic degree study, research and professional study and training are integrated in problem-oriented institutes whose programs foster deeper intercultural understanding.
Problem-Oriented Programs

East-West Communication Institute provides graduate students, scholars and professionals in various fields of communication with the opportunity to work together in programs of education, research and training. Broadly seeking insights into the processes of sharing knowledge across cultural frontiers, the institute is directly concerned with helping build and strengthen mass media and other communication systems essential to social and economic change and development in the United States, Asia and the Pacific area. In addition to those with prime interest in communication studies, more generalized students and scholars in the social sciences and humanities can find appropriate areas for study and research emphasizing cross-cultural communication. Scholarships for M.A. and Ph.D. studies are awarded through the institute in such disciplines as Asian studies, American studies, anthropology, design, educational communications, educational psychology, library studies, Pacific islands studies, political science, psychology, sociology, speech communication and related fields.

In addition to their degree work, students are expected to become knowledgeable in communication research and theory, and to develop media skills in the use of communication in development programs. Students also participate with senior scholars and professional practitioners in institute-directed research, seminars, workshops and training projects. Jefferson Fellowships are awarded annually to midcareer Asian/Pacific and American journalists in print and broadcast media for a semester of noncredit study at the University of Hawaii in fields relating to developmental communication. They also participate in a wide range of professionally-related activities, including an observation tour of the U.S. mainland.

The institute, under a grant from the Agency for International Development, is carrying out a three-year inventory/analysis study of information, education and communication support for family and population planning programs, as well as training and research in these fields. Other communication resource material is collected for use of students and scholars, as well as for dissemination to other institutions through such means as a newsletter, microfiche, bibliographies, abstracts, summary translations, etc.

East-West Culture Learning Institute activities are based on the premise that a culture is a society's way of life which expresses certain meanings and values in humanistic achievements, institutions and forms of behavior. Through multinational, multi-disciplinary programs of research, education and training, the institute is observing and analyzing the relationships between elements (or patterns) in and across particular cultures. Its aim in carrying out such analyses and in making such observations is to help people to become aware of and to understand previously unobserved patterns of their own cultures and cultures other than their own.

A program of research has been developed which calls for interaction between staff researchers, fellows and graduate students. This program, to avoid scattered effort, is concentrated on four main areas: cultures in contact, language in culture, cultural and national identity, and thought and expression in culture learning. Investigations in the first three areas are being carried out into the positive and negative transfer of learning that members of one culture may have when studying about or interacting in another culture; into the socio-cultural and social-psychological aspects of varieties of Asian and Pacific languages in comparison with those of varieties of English and the same aspects of language learning and teaching in Asia, the Pacific Basin and the United States and into factors of social change which inhibit or encourage the growth of cultural identity.

Starting with a project in socioliterature and in the belief that one of the ways in which a culture reveals itself most fully is in the thinking which guides it, shapes its values and gives rise to its various creative expressions, the fourth area of interest is concerned with what persons from different Asian, Pacific and American cultural backgrounds think and how they express themselves in the humanities and the arts.

Scholarships are awarded to graduate students who will participate in institute programs and study for M.A. and Ph.D. degrees in such departments as psychology, linguistics and English as a second language. Other disciplines represented include American studies, anthropology, art, drama and theater, East Asian languages, educational administration, educational foundations, educational psychology, English, geography, history, music, Pacific islands studies, philosophy, political science, public health, social work, sociology and speech communications.

East-West Food Institute deals with an integrated interpretation of the human, technical and economic concerns with food. Research, education and training programs are related to the efficient and profitable production of commodities from land and sea resources; the evaluation and improvement of nutritional quality; techniques of processing, preservation and distribution; and preparation for effective utilization. Programs also deal with economic, social and political policies, cultural values, institutions, and population characteristics related to food from production to consumption.

Scholarships for post-graduate study at the master's and doctoral degree levels are awarded through the institute for students in the field of agriculture, fisheries, nutrition, food technology and economic analysis, as well as the humanities and other natural and social sciences that touch on food-related problems. Institute students, in addition to their primary course requirements, are expected to take at least one course in the tropical application of a food-related discipline; take a course in "Agriculture and Rural Development Administration"; and participate in at least one semester of the institute's seminar "The Food Systems of Asia and the Pacific," a four-semester cycle focusing, in turn, on Southeast Asia, East Asia, South Asia and the Pacific.

Students also have the opportunity to join with staff, fellows and professional study participants in "task force" groups dealing with specific problems, insofar as is appropriate to their degree program and career objectives. Research areas given priority include agricultural diversification and multiple cropping, systems of crop protection, food quality, planning and implementation of food-related programs and policies, and application of the "systems" concepts to modernization problems in fields related to food.

East-West Population Institute, in aiming to contribute to the understanding and solution of population problems, conducts a broad research program, promotes graduate study in its field, organizes a variety of professional study and training
projects, and engages in technical cooperation with sister institutions in Asia, the Pacific area and the U.S. mainland.

The institute awards East-West Center scholarships to students seeking advanced degrees from the University of Hawaii in various disciplines closely related to population studies. A certificate in population studies is offered in the College of Arts and Sciences, which may be taken in conjunction with graduate degrees (M.A., M.S., M.P.H., Ph.D.) in population-related disciplines. The aim is to provide opportunities for graduate students to acquire an understanding of demographic structures and processes, and a competence in aspects of population related to their particular discipline and professional orientation. Course offerings include demographic analysis, ecological anthropology, communication, manpower economics, economics of population growth, population geography and rural and urban sociology. M.P.H. and M.S. degree study awards are offered in the School of Public Health involving population and family planning studies, biostatistics, maternal and child health, world population problems, fertility and reproduction, vital and health statistics, techniques of demographic analysis.

The institute complements formal graduate training in three ways: by providing more intensive advisory and technical services to students, by involving them in research seminars, and guiding them in field education. For more advanced students, particularly at the Ph.D. level, field work outside Hawaii is arranged and supported by the institute on a team or individual basis. A close day-to-day contact is maintained between the institute and the teaching departments by faculty holding joint appointments.

The institute’s geographic focus is the Asian and Pacific area, reflecting Hawaii’s unique position at the crossroads of the Pacific and utilizing the University’s extensive library and research facilities in Asian and Pacific studies. Research directed by institute staff focuses on two main areas: analyses of the causes and consequences of population change, and on the field of demography proper, with emphasis on studies of population change and composition in Asia and Pacific. The institute maintains a specialized collection of books and reference materials, and engages in certain service-related activities.

**East-West Technology and Development Institute** programs seek to increase understanding of development as a whole, with special emphasis on the interaction and respective roles of men, institutions and technology as economic growth and national development proceeds in both East and West. An added dimension to conventional university education and technical training is provided by involving graduate students, senior scholars, technologists and administrators in integrated development planning on a multi-national, multi-disciplinary level. Special interest is given to fostering the entrepreneurial role in development by working on problems of organization and management of private and public organizations.

The institute is concerned not only with engineering research to adapt existing technologies and to create new technologies more appropriate to the requirements of both East and West, but also with economic, political, cultural and psychological factors which affect the adoption of new ideas, and with the impact of rapid technical change on the development process as a whole.

Advanced degree scholarships are awarded not only in technically-oriented engineering studies, but also in such development-oriented fields as economics, business administration, sociology, political science, urban and rural planning, and the ocean and geo-sciences. Graduate students are offered the opportunity to become involved in various research and training programs. In an effort to increase the sensitivity of technologists to socio-cultural factors, engineering students are encouraged to enroll in at least one social science course in development or development planning.

TDI sponsors a continuing seminar which—because of the multi-disciplinary, multi-national composition of its staff, senior fellows and students—exposes all participants to a wide variety of approaches and perspectives relating to the problems of technology and development.

**Open Grants**

A limited number of grants are offered each year for degree study, as well as awards for senior fellows and fellows, in academic fields not directly related to the problem-oriented programs. The open grants provide the East-West Center with flexibility for accomplishing its goals and meeting requirements for equitable geographic distribution of participants. Students are selected in a wide range of disciplines, primarily at the graduate level. A few grants are made for undergraduates from countries in Asia and the Pacific to meet specific level. A few grants are made for undergraduates from countries in Asia and the Pacific to meet specific objectives. Open grants students meet the high standards required of all Center participants, including a demonstrated interest in cross-cultural study.
While formal course work and degrees are taken at the University of Hawaii, students are provided the opportunity for participation in various Center activities and informal seminars with senior fellows on open grants. Study themes are selected from year to year for these informal seminars designed to involve fellows and students more deeply in the search for mutual understanding than is normally afforded in formal course work. The general theme for 1973-74 is "The Urban Environment in the Contemporary Spirit."

Scholarships and Grants

Degree scholarships for study at the University of Hawaii and participation in Center-sponsored programs generally include round-trip air fare from the student's home, housing in Center residence halls, tuition and books, medical insurance and a modest stipend for food and incidental expenses. The Center is not able to provide transportation or support for dependents. If the student meets Center requirements, a grant may provide for field education in Asia, the Pacific area or the United States mainland for periods ranging up to eight months for M.A. students and fifteen months for Ph.D. students. Candidates for degrees must provide evidence of professional interest in the Center program of their choice, meet the high academic standards of the University of Hawaii, and at the same time demonstrate interest and potential for contributing to intercultural communication. The Center grantee assumes an obligation to help advance the broader cultural aims of the Center, not only in its academic aspects but also in its day-to-day programs of interchange, both formal and informal.

Scholarships for study at the master's degree level are generally awarded for 17 months, if the student begins in September, and for 19 months for those beginning in June. A small number of doctoral study grants are made for 36 months to highly promising individuals who normally must hold an M.A. degree. All degree programs for Americans are at the graduate level. Some undergraduate scholarships are awarded for students from some areas in Asia and the Pacific to meet specific objectives.

Senior Fellows and Fellows are scholars and authorities in fields relevant to institute programs and Center goals who are invited to the Center for participation in research and intercultural activities. Grants are usually awarded for periods ranging from four to twelve months. Senior fellows are scholars and officials who are distinguished and recognized for past professional contributions in their fields. Fellows are outstanding individuals still in early phases of their careers.

Professional Development study grants are made for non-degree participants in a wide variety of projects directed by the institutes, usually on a cost-sharing basis with cooperating institutions or agencies. Ordinarily participants are nominated by the co-sponsoring agency and selections made by the East-West Center. Project periods generally vary in length from one month to one year. Housing, living expenses and training costs are provided on the same general basis as provided for academic student grants. Transportation to and from Hawaii is usually provided by the co-sponsoring organization or the Center, depending upon the terms of the project.

Language Requirements. Competence in English is essential because Center program activities and University instruction are conducted in English. Applicants whose first language is not English must take the Test of English as a Foreign Language (TOEFL) as part of the selection requirement. On arrival, students may be assigned special course work at the University's English Language Institute. In some cases, foreign students may spend their entire first summer session or first semester exclusively on the study of English so that they may attain the proficiency needed to pursue their chosen fields of study. Foreign applicants who are exempt from the TOEFL examination are: (a) native speakers of English from Australia, Britain, Canada or New Zealand; (b) students who have received a bachelor's degree from an accredited American, Australian, British, Canadian or New Zealand university/college. All native speakers of English are required to take an Asian or Pacific language appropriate to their areas of interest and must maintain a 3.0 or "B" level of performance throughout the grant period.

Supporting Services

The office of Publications and Public Affairs supervises publication of East-West Center Books by the University Press of Hawaii, coordinates other Center publications such as bulletins, newsletters and working papers, and disseminates information on Center programs and activities. The office of Participant Services coordinates intercultural activities, admissions, liaison with former participants, and community relations, including cooperation with the Friends of the East-West Center, a voluntary organization of Hawaii residents which links Center participants with community activities. The office of Administration is responsible for fiscal management, housing, conference logistics and such central services as data processing and duplicating.

General Information

The East-West Center complex on the Manoa campus of the University includes Thomas Jefferson Hall, the administration building which houses 50 offices, a lounge, cafeteria conference rooms and the exhibition gallery; Abraham Lincoln Hall, which houses the problem-oriented institutes; John F. Kennedy Hall, a theater-auditorium; Hale Manoa and Hale Kuahine, residence halls for men and women participants. East-West Center funds were used for the construction of Edmondson Hall and a wing of Moore Hall, University classroom buildings. 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 chancellor of the East-West Center, through a grant-in-aid agreement which channels federal funds to the University, is responsible to the board of regents through the president of the University. The National Review Board, appointed by the U.S. Secretary of State and headed by the governor of Hawaii, represents the national interest in the Center and advises the Secretary of State.

Further information concerning scholarships and grants may be obtained by writing to: Office of Admissions, East-West Center, 1777 East-West Road, Honolulu, Hawaii 96822.
Hilo College is a four-year college within the University of Hawaii at Hilo. The College provides quality education in liberal arts subjects, as well as in programs specifically suited to the needs and resources of the Big Island and the state of Hawaii.

The course of studies at Hilo College leads to the fulfillment of requirements for the associate of arts degree and the bachelor of arts degree, both of which are granted by the University of Hawaii at Hilo.

The basic curriculum of the College is a four-year course of studies with academic majors in American studies, anthropology, biology, elementary biology education, chemistry, economics/business, English, geography, history, liberal studies, linguistics, mathematics, philosophy, physics, political science, psychology, social science, sociology, speech, and speech-English. In addition, those students who have satisfactorily completed the education course sequence qualify for a provisional teaching certificate upon acceptance for employment by the department of education of the state.

Students pursuing programs in engineering, nursing, and tropical agriculture may profitably spend their first two years at Hilo College before transferring to the University of Hawaii at Manoa at the end of their sophomore year. Home economics majors should plan to transfer to the Manoa campus after taking certain basic courses in their freshman year.
Location

The Hilo College campus, which consists of 58 hillside acres, is green and semi-rural. The campus commands a view of Hilo Bay and the Pacific Ocean to the east, and of the majestic snow-capped peak of Mauna Kea (13,796 feet high) to the west. Nearby is the quiet city of Hilo. The magnificent and unspoiled environment of the Big Island of Hawaii beckons on every side.

Hilo is an ideal place for the study of many of the things that are special to Hawaii. Anthropology, biology, and geography classes, for instance, frequently do field studies at varied places on the Big Island. Archaeology students participate in investigations of ancient Hawaiian sites and artifacts, while the ethnic studies program focuses on the peoples of Hawaii. Several of the vigorous instrumental groups on campus emphasize ethnic as well as classical and modern music. The research personnel of the Cloud Physics Observatory and the Beaumont Agricultural Research Center, both of which are located on the campus, teach college science courses. A newly launched environmental studies program concentrates on ecological issues on the island of Hawaii.

Although the University of Hawaii at Hilo is isolated from the tensions of the metropolitan environment, the College is not isolated from the world. Many courses at Hilo have a strong international accent. Both the Eastern and Western traditions are studied in courses in philosophy, religion, and history. Languages taught at Hilo College include Japanese, Hawaiian, French, Spanish, Portuguese, and German. Summer study programs in Japan, Sweden and Spain are conducted annually by faculty of the University of Hawaii at Hilo.

Facilities

Although much building remains to be done, the facilities of the University of Hawaii at Hilo have expanded steadily over the past few years. The most recent additions include dormitories, a theatre-auditorium, an addition to the library, an administration building, and a life sciences building. In the planning stage are buildings for fine arts, social science, a campus center, and more dormitories.

Hale Kanilehua and Hale Kauanoe dormitories provide accommodations for 180 students. Additional apartment-style student housing on or near the campus will accommodate another 400 students. The dorm rate for a semi-private furnished room is $185 per semester in Hale Kanilehua and $205 in Hale Kauanoe and is payable at the beginning of each semester. Christmas and Easter recesses are not included in the rental fee. Meals, costing an average of $2.50 per day, are provided five days per week in the cafetorium.

Activities

Several extracurricular activities at the College center on the enjoyment and preservation of the cultures of Hawaii. The Ni-chi-Bei Yuujoo Club sponsors Japanese cultural events, while the Ahahui O Na Pua O Hawaii sponsors many activities for the study, appreciation and perpetuation of Hawaiian culture.

Through the Cultural Patron Program organized by the Associated Students of the University of Hawaii, Hilo College, an outstanding series of foreign and domestic films are shown on the campus. Dramatic and musical events are frequent. Student journalists cover the local scene and voice their concerns through Ka Leo, the weekly student newspaper.

Athletically, the Vulcans basketball team, which plays throughout the islands and on the mainland, is the pride of Hilo College. Soccer and volleyball are gaining in popularity. The martial arts, such as aikido, are stressed in the physical education program.

Educational Costs

For an in-state student, the cost of one academic year at Hilo College is approximately $1,758 for a commuter living at home, $2,657 for a resident in one of the dormitories, and $3,167 for an out-of-state student renting off-campus accommodations. Tuition and fees, which are included in the above figures, are $228 per year for full time in-state students. The tuition and fees for out-of-state students amount to $738. Since a system-wide tuition increase is being considered by the University of Hawaii, the above figures should all be considered as subject to change.

Students requiring financial assistance may apply for aid through the Hilo College Office of Student Services, which makes every effort to meet the complete financial needs of each student. The major forms of student aid include student employment, National Defense Student Loans, Educational Opportunity Grants, State of Hawaii Education Loans, tuition waivers, and State of Hawaii Scholarships.

Applications

Application for attending Hilo College should be made on the Common Application Form of the University of Hawaii. The form is available in high schools throughout the state, and by writing to:

Office of Student Services
Hilo College
P. O. Box 1357
Hilo, Hawaii 96720

A copy of the catalog can be ordered from the Hilo College bookstore (same address) for one dollar.
Hawaii's community colleges are administered by the University of Hawaii. Authorized by the state legislature in 1964 and commencing operation in 1965, the seven public community colleges are as follows:

**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 620 Pensacola Street, Honolulu, Hawaii 96814.

**Leeward Community College**, established in 1968, occupying a newly developed campus at 96-045 Aiea Lii, Pearl City, Hawaii 96782.

**Hawaii Community College**, established in 1941 as Hawaii Technical School, located at 1175 Manono Street, Hilo, Hawaii 96720.

**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 Kauai Vocational School, mailing address R. R. 1, Box 216, Lihue, Kauai, Hawaii 96766.

**Windward Community College**, established in 1972, located at 45-720 Keahala Road, Kaneohe, Hawaii 96744.

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 1972, the colleges enrolled 13,541 credit and 3,168 apprenticeship and noncredit students.

The programs available at the various colleges are listed below. Inquiries should be directed to the registrars of the colleges.

**Honolulu Community College:** aircraft mechanics technology, applied arts, architectural drafting technology, auto body repair and painting, automotive mechanics technology, carpentry, commercial baking, cosmetology, electronics technology, engineering technology, fashion arts, fire science, general education, heavy equipment maintenance and repair, industrial education, industrial electricity, metalworking technology, new careers, police science, refrigeration and air conditioning technology, sheet metal technology, transfer, welding technology.

**Kapiolani Community College:** accounting, commercial food service, data processing, dental assisting, food service management, general clerical, general education, inhalation therapy, medical assisting, hotel and merchandising mid-management, practical nursing, radiologic technician, secretarial science, transfer.

**Leeward Community College:** accounting, architectural drafting, automotive mechanics, computer science, general education, hospitality education, library technology, management, marine technology, maintenance technology, recreational instruction, secretarial science, transfer.

**Hawaii Community College:** accounting, agriculture, auto body repair and painting, automotive mechanics, carpentry, clerk-typist, data processing, diesel mechanics, drafting and engineering aid, electricity, electronics technology, fashion arts, fire science, front office hotel training, general education, machine technology, practical nursing, police science, restaurant and hotel trade, sales and mid-management, salesmanship, secretarial science, welding and sheet metal.

**Maui Community College:** accounting, apparel design, architectural drafting, automotive technology, building maintenance, carpentry technology, general education, general office training, hotel mid-management, human services, industrial maintenance, machine technology, police science, secretarial science, sheet metal, technical nursing, transfer, welding.

**Kauai Community College:** accounting, apparel design, architectural drafting, automotive technology, building maintenance, carpentry technology, general education, general office training, hotel mid-management, human services, industrial maintenance, machine technology, police science, secretarial science, sheet metal, technical nursing, transfer, welding.

**Windward Community College:** business training, transfer.
Faculty and Staff
(March 1, 1973)

BOARD OF REGENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Term Expires</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stuart T. K. Ho</td>
<td>1974</td>
</tr>
<tr>
<td>Herbert M. Richards, Jr.</td>
<td>1974</td>
</tr>
<tr>
<td>Clarence F. Chang</td>
<td>1972</td>
</tr>
<tr>
<td>Robert L. Cushing</td>
<td>1972</td>
</tr>
<tr>
<td>Harold C Eichelberger</td>
<td>1974</td>
</tr>
<tr>
<td>Harriet Mizuguchi</td>
<td>1975</td>
</tr>
<tr>
<td>Charles S. Ota</td>
<td>1973</td>
</tr>
<tr>
<td>Brian L. Sakamaki</td>
<td>1972</td>
</tr>
<tr>
<td>Kiyoshi Sasaki</td>
<td>1975</td>
</tr>
</tbody>
</table>

Note: two vacancies to be filled.

Former Presidents

Willis T. Pope, 1907-1908 (Acting) (Deceased); B.S. 1898, Kansas State; M.S. 1916, California; D.Sc. 1926, Hawaii
John W. Gilmore, 1908-1913 (Deceased); B.S.A. 1898, M.S.A. 1906, Cornell
John S. Donagho, 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 U. Law School; M.S. 1916, M.I.T.
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 C.; M.A. 1930, Columbia; Ph.D. 1939, Southern California
Robert W. Hiatt, 1968-1969 (Acting); B.A. 1936, San Jose State; Ph.D. 1941, California
Richard S. Takasaki, 1969 (Acting); B.S. 1940, Hawaii; M.A. 1949, Columbia; M.P.A. 1960, Harvard

An asterisk (*) before a name indicates dates of degrees and granting institutions listed under "Faculty."
Graduate Division and Research Administration
*Howard P. McKaughan, B.A., M.Th., M.A., Ph.D. ................... Dean of Graduate Division and Director of Research
*Hilmer A. Frank, B.A., M.S., Ph.D. ................ Associate Dean, Programs and Personnel
*Arthur N.L. Chiu, B.A., B.S., S.M., Ph.D. ................ Associate Dean, Research, Fellowships, and Special Training Programs

Academic Administration

Arts and Sciences
*David E. Contois, B.A., M.S., Ph.D. .......................... Dean
*Alfred J. Levy, B.A., M.A., Ph.D. .................. Associate Dean
Phillip B. Olsen, Associate Dean
B.A. 1953, Wesleyan; M.S. 1959, UCLA
*Roger L. Hadlich, B.A., M.A., Ph.D. .................. Associate Dean
*James R. Linn, B.A., M.A., Ph.D. .................. Associate Dean

Business Administration
*Ralph C. Hook, Jr., B.A., M.A., Ph.D. .................. Dean
*Howard D. Lowe, B.S., M.S., D.B.A. .................. Associate Dean
*Robert E. Baird, B.S., M.B.A., Ph.D. .................. Associate Dean & Fiscal Officer
*David Bess, B.S., M.B.A., Ph.D. .................. Assistant Dean
Kenneth West, Executive Director, AMP, and Assistant to Dean: B.S. 1935, U.S. Naval Academy
*Edward M. Barnet, S.B., M.B.A., Ph.D. .......... Dean, TIM
*Chuck Gee, A.A., B.S., B.A., M.A., Associate Dean

Continuing Education and Community Service
Frederick R. Mayer, B.S.Ed., M.S.Ed., D.Ed. ........... Acting Dean
Betsy Sakata, B.Ed., M.Ed., Assistant Dean

Student Affairs
*Robert D. Stevens, A.B., B.S., M.A., Ph.D. ............ Dean

Library Studies

*Terence A. Rogers, B.S., Ph.D. .................. Associate Dean
Kenneth D. Gardner, Jr., B.M.S. M.D. .................. Associate Dean
*Charles B. Odom, B.S., M.D. .................. Associate Dean
Patricia K. Putman, J.D. .................. Associate Dean
DeVer Pollock, B.B.A., Assistant Dean

Medicine

*Shosuke Gollo, B.S., M.S., Ph.D. .................. Dean
*Kenneth D. Gardner, Jr., B.M.S. M.D. .................. Associate Dean

Nursing

*Edith Anderson, B.S., M.A., Ph.D. .................. Dean
*Cynthia Aiu, B.S., M.S., Assistant Dean
Ann M. Budy, B.S., Ph.D. ....... Assistant to Dean
Eleanor A. Judd, B.A., Administrative Asst. to Dean

Public Health

*Robin M. Michael, B.C.E., M.S., M.P.H. ...... Acting Dean
James E. Banta, M.D., M.P.H. ....... Acting Associate Dean

Social Work

*Hazel V. Kraemer, A.B., M.A., Ph.D., \( M.S \)., Assistant to Dean

Marine Programs

*Jerold W. Braven, M.S., B.S., D.S.W. .................. Dean
B.S. 1946, Cornell; M.S. 1947, California Institute of Technology; Ph.D. 1951, Iowa; J.D. 1958, George Washington
Jack R. Davidson, Director of Sea Grant Programs and Associate Dean: B.S. 1953, Wyoming; M.S. 1956, Montana State; Ph.D. 1960, California (Berkeley)
Barry H. Hill, Director of Marine Option Program: A.B. 1965, San Diego State; M.S. 1971, Hawaii

Summer Session
*Takeshi Moriwaki, B.A., M.A., Ph.D. ............ Acting Dean

Tropical Agriculture

*C. Peairs Wilson, B.S., M.S., Ph.D. .................. Dean
*Leslie D. Swindale, B.S., M.S., Ph.D., Associate Director, HAES and CES
Dale Goodell, B.S., M.S., Associate Director, CES
*Shosuke Goto, B.S., M.S., Ph.D., Assistant Dean, Agriculture
*Hazel V. Kraemer, A.B., M.A., Ph.D., Assistant Dean, Human Resources Development

Ellingson, A. L. ....... Dean of Students
B.A. 1943, B.S. 1948, Oregon
Fukuda, Donald, Assoc. Dean of Students
B.Ed. 1956, M.A. 1963, Hawaii
Amjadi, Hormoz, Spec. (Psychiatrist), Counseling & Testing: M.D. 1959, Tehran
Araman, Bonnie D., Head Resident, Freshman
B.A. 1965, Colorado; M.A. 1966, Michigan
Barnes, Bruce E., Jr., Spec. Innl.
Student Office: B.Sc. 1966, Oregon
State: M.Ed. 1970, Hawaii
Blaser, Donald C., Asst. Spec., Housing
B.A. 1954, Nebraska State; M.A. 1959, Nebraska
Burgoine, James M., Director, Housing
B.S. 1948, M.B.A. 1949, Wisconsin
Chalmers, Randolph L., Spec. 2, Housing
B.A. 1965, Linfield C.
*Char. Donald F.B., Director, Student Health Service

Cross, John A., Director, Student Activities

Denny, James M., Assoc. Spec., Counseling & Testing: A.B. 1951, Oberlin; Ph.D. 1958, Western Reserve
Dunne, Willis E., Jr. Spec., Student Activities: B.A. 1959, M.Ed.
1970, Hawaii
Francoise, Gertrude. Head Resident, Gateway: B.A. 1969, Hawaii
Igawa, Fay, Head Resident, Johnson Hall: B.Ed. 1968, Hawaii
Kitamura, Jill, Head Resident, Hale Kahuwaii: B.S. 1968, Hawaii
Koch, Noni, Spec., Student Health Service: M.D. 1952, Panjab
Lundsgaard, David, Spec. 4, Admissions & Records: M.A. 1967, Minnesota
Morisato, Diane, Jr. Spec., Student Activities: B.A. 1968, Hawaii
Nakamura, Dorothy, Asst. Spec., Housing: B.Ed. 1956, Hawaii
Naughton, June, Asst Spec., Int'l. Student Office: B.A. 1959, San Jose: M.A. 1960, Columbia
Oikihara, Burt, Spec. 3, Student Affairs B.B.A. 1962, Hawaii
Simmons, Alan, Asst. Spec., Counseling & Testing: B.Ed. 1959, Omaha: M.Ed. 1968, Hawaii
Tamura, Raymond, University Physician M.D. 1957, Illinois
Taniguchi, Shirley, Jr. Spec., Housing B.B.A. 1949, Hawaii
Ushijima, Earl, Spec. 3, Special Housing: B.B.A. 1964, Hawaii
Wang, Cynthia, Spec. 2, Housing B.B.A. 1966, Hawaii
Wang, Farouk, Head Resident, Hale Aloha: B.A. 1967, Hawaii
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

Business Affairs
Matsuda, Fujio ............ Vice-President for Business Affairs
Chapman, William B., Asst. Vice-President for Business Affairs
Prablow, Robert H., Acting Director of Personnel: B.A. 1962, Maryland
Smith, Esther M., Personnel Officer B.A. 1948, M.A. 1962, Hawaii
Bleede, V. Carl, Contracts Officer A.B. 1940, Dartmouth: J.D. 1950, Baltimore: LL.M. 1967, Georgetown
Izumi, Takaaki, Special Assistant to V-P for Business Affairs: B.A. 1957, M.A. 1960, Hawaii
Moriyasu, Henry M., Director of Auxiliary Services: B.A. 1947, Hawaii
Muraoka, Walter K., Director of Physical Planning and Construction B.S. 1955, Detroit
Koehler, Philip W., Director of Facilities Management: B.A. 1942, Northwestern C.
Hee, Annette H., Head Fiscal Section B.B.A. 1953, Hawaii: M.B.A. 1956, Indiana
Nakasone, Carole T., Space Manager B.A. 1964, Hawaii
Wong, Philip K.C., Head Design Section
Horii, Ralph T., Director of Budget B.A. 1962, M.A. 1964, Hawaii
Ohta, Kenneth H., Director of Analytical Studies: B.A. 1942, Hawaii

Snyder, Keith S., Comptroller B.A. 1942, Carleton C.
Alexander, Woodrow E., Director of Procurement & Property Mgmt: B.S. 1957, M.B.A. 1959, Maryland
Balones, Jose D., Treasury Officer B.S. 1951, Ohio State
Cason, Alan R., General Manager, Book Store: B.A. 1941, Carleton C.
Katahira, Jack H., Director, Fiscal Operations: B.B.A. 1963, Hawaii
Morihara, Morio, Director, Central Accounting: CPA
Tanabe, George K., Comptroller, Contracts & Grants: B.B.A. 1941, Armstrong: CPA
THE FACULTY

Updating of this section is the responsibility of each academic department. Promotions and new degrees effective after March 1 will not be reflected in this listing.

Academic Chairs

The Citizens' Chair in English Literature, funded by the Hawaii State Legislature—Leon Edel.*

The Captain James Cook Chair in Oceanography, funded by the Honolulu Advertiser—Robert M. Garrels.*

The Pacific Islands Chair in Anthropology, funded by the Hawaii State Legislature—Douglas L. Oliver.*

The Gerrit Parme Wilder Chair in Botany, established by the will of the late Lilian Kimball Wilder in memory of her husband.

A

Abbott, Agatina T., Professor of Geology: B.A. 1939, Minnesota; Ph.D. 1952, Washington

Abramson, Joan, Lecturer in New College: B.A. 1954, M.S. 1955, UCLA

Abramson, Norman, Professor of Information & Computer Sciences and Electrical Engineering: A.B. 1953, Harvard; M.A. 1955, UCLA; Ph.D. 1958, Stanford

Abrera, Josefa B., Assistant Professor of Library Studies: B.S.E. 1953, Philippines; A.M. 1958, Ph.D. 1970, Indiana


Adams, Bruce G., Assistant Professor of Microbiology: B.A. 1964, Whitman C.; Ph.D. 1968, Oregon State

Adams, Carl W., Associate 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. 1931, Ph.D. 1937, Ohio


Adler, Jacob, Professor of Accounting and Finance: B.S. 1933, Chicago; M.S. 1936, Ph.D. 1959, Columbia; CPA 1959

Afendras, Evangelos, Assistant Professor of English as Second Language: B.A. 1965, M.A. 1966, Ph.D. 1968, Johns Hopkins

Affonso, Dianne D., Instructor of Nursing: B.S. 1966, Hawaii; M.S. 1967, Washington

Agar, Michael H., Assistant Professor of Anthropology: B.A. 1967, Stanford; Ph.D. 1971, California (Berkeley)


Aiu, Cynthia B., Associate Professor of Nursing: B.S. 1956, M.S. 1961, UCLA

Akaike, Hirotugu, Visiting Professor of Information Sciences: B.S. 1952, D.S. 1961, Tokyo

Akamine, Ernest K., Professor of Plant Physiology: B.S. 1935, M.S. 1941, Hawaii

Akita, George, Professor of History: B.A. 1951, Hawaii; M.A. 1953, Ph.D. 1961, Harvard


Alexander, John, Associate Professor of Public Health: B.A. 1934, North Carolina; M.S. 1936, LL.B. 1941, Columbia

Allday, Christopher J., Assistant Professor of Mathematics: B.A. 1965, M.A. 1969, Christ's C.; Ph.D. 1970, California (Berkeley)

Allen, James G., Professor of Human Development: B.S. 1949, Wisconsin; M.S. 1954, Ph.D. 1960, Iowa State

Allen, Leslie R., Associate Professor of Education: B.Sc. 1946, M.Sc. 1947, New Zealand; Ph.D. 1967, California (Berkeley)

Allen, Richard D., Associate Professor of Microbiology: B.A. 1957, Greeneville C.; M.S. 1960, Illinois; Ph.D. 1964, Iowa State

Allton, Donald W., Lecturer in Music: B.M. 1936, M.M. 1938, Eastman School of Music (Rochester)

Alm, Julia N., Associate 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

Alscher, Lawrence R., Assistant Professor of Political Science: B.A. 1963, Wesleyan; M.A. 1965, Ph.D. 1967, Northwestern


Amioka, Shiro, Professor of Education B.Ed. 1949, M.Ed. 1952, Hawaii; Ph.D. 1959, Illinois


Andermann, George, Associate Professor of Chemistry: B.S. 1949, UCLA; M.S. 1961, Ph.D. 1963, Southern California

Anderson, C. Webster, Professor of Art: B.A. 1933, California; M.A. 1953, UCLA

Anderson, Edith H., Professor of Nursing: B.S. 1951, Manhattan; M.A. 1958, Ph.D. 1968, New York


Anderson, Robert N., Assistant Professor of Agricultural Economics B.S. 1965, M.A. 1966, Adams State; Ph.D. 1969, Colorado State

Anderson, Ronald S., Professor of Education: B.A. 1929, M.A. 1946, Stanford; Ph.D. 1956, California (Berkeley)

Andrews, James E., Associate Professor of Oceanography: B.A. 1963, Amherst; Ph.D. 1967, Miami


Aoki, Mitsuo, Professor of Religion B.A. 1940, Drury; B.D. 1943, Chicago Theological Seminary; D.D. (Hon) 1968, Pacific School of Religion


Aptekar, Herbert H., Professor of Social Work: B.S. 1937, Columbia; M.S.W. 1939, D.S.W. 1955, Pennsylvania

Arakagi, Minoru, Professor of Plant Pathology: B.S. 1950, M.S. 1954, Ph.D. 1963, Hawaii

Arai, Sueko, Lecturer in Music Natori Diploma 1949, Hanayagi (Japan)

Arai, Teruo, Lecturer in Music Natori Diploma 1955, Nishikawa (Japan)

Arakaki, David T., Assistant Professor of Genetics: B.S. 1958, M.S. 1961, Hawaii; D.Sc. 1969, Hokkaido


Araki, James T., Professor of Japanese Literature: B.A. 1954, UCLA; M.A. 1958, Ph.D. 1961, California (Berkeley)

Arensdorf, Alfred M., Assistant Professor of Psychiatry: B.S. 1962, Loyola; M.D. 1966, UCLA
Burns, Alfred, Associate Professor of Classics: B.A. 1952, M.A. 1958, Ph.D. 1964, Washington
Bury, Douglas C., Assistant Professor of Business 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
Butler, Betty R., Instructor of Dental Hygiene: B.S. 1949, Southern California
Bwy, Douglas, Associate Professor of Political Science: B.A. 1960, San Diego State; M.A. 1965, Ph.D. 1968, Northwestern
Byers, Burton H., Associate Professor of Communication: B.A. 1934, Northern Iowa; M.A. 1940, Iowa; Ed.D. 1957, Columbia
Bystron, John W., Professor of Communication: B.A. 1943, M.A. 1948, Ph.D. 1961, Minnesota
C
Cahill, Robert S., Associate Professor of Political Science: B.A. 1954, Reed; M.A. 1961, Ph.D. 1962, Oregon
Cambra, Zaneta, Lecturer in Music B.Ed. 1954, Hawaii; M. Mus. 1958, Eastman School of Music
Campbell, Burnham O., 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
Cannon, Glenn, Assistant Professor of Drama and Theatre: B.A. 1954, Temple
Caperon, John, Associate Professor of Oceanography: B.S. 1952, Utah; Ph.D. 1965, California (San Diego)
Carlson, John Gregory, Associate Professor of Psychology: B.A. 1963, Ph.D. 1967, Minnesota
Carroll, W. Dennis, Assistant Professor of Drama and Theatre B.A. 1962, Sidney; M.F.A. 1964, Hawaii; M.A. 1966, Sidney; Ph.D. 1969, Northwestern
Carson, Hampton L., Professor of Genetics: A.B. 1936, Ph.D. 1943, Pennsylvania
Caulfield, Marilyn W., Assistant Professor of Social Work: B.A. 1949, Ohio; M.S.W. 1963, Hawaii
Cavaletto, Catherine G., Assistant Professor of Food Science: B.S. 1959, California (Davis); M.S. 1968, Hawaii
Cence, Robert J., Professor of Physics and Astronomy: A.B. 1952, Ph.D. 1959, California (Berkeley)
Cha, Peggy, Instructor in English B.A. 1968, Stanford; M.A. 1969, Hawaii
Chadwick, Richard W., Associate Professor of Political Science B.S. 1962, Illinois Institute of Technology; Ph.D. 1966, Northwestern
Chadwick-Cullen, Charlene J., Associate Professor of Music: B.M. 1955, Eastman School of Music; M.M. 1961, Rochester
Chai, Hi Chang, Professor of Mechanical Engineering: B.S. 1953, Texas; M.S. 1954, Ph.D. 1957, Ohio State
Chamberlin, Belle S., Instructor in Social Work: B.S. 1932, North Dakota: M.S.S. 1937, Smith
Chandler, David B., Assistant Professor of Sociology: B.A. 1960, M.A. 1964, McMaster, Ph.D. 1970, Cornell
Chang, Chung-Yuan, Professor of Philosophy: B.A. 1934, National Central; M.A. 1937, Michigan; Ph.D. 1943, Columbia
Chang, Franklin, Assistant Professor of Entomology: B.S. 1963, Maryland; Ph.D. 1969, Illinois
Chang, Jen-hu, Professor of Geography B.A. 1949, Chekiang; M.A. 1952, Ph.D. 1954, Clark
Chang, Pauline, Instructor in Asian and Pacific Languages: B.S. 1940, National Tsing Hwa
Chang, Sen-dou, Professor of Geography B.A. 1949, Chin-nan (Shanghai); M.A. 1953, 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
Chao, Dennis N.W., Assistant Professor of Economics: B.A. 1965, National Taiwan U.; Ph.D. 1972, California (Santa Barbara)
Chappell, David W., Acting Assistant Professor of Religion: B.A. 1961, Mt. Allison; B.D. 1965, McGill
Char, Donald F.B., Professor of Public Health and Pediatrics M.D. 1950, Temple
Char, Walter F., Professor of Psychiatry: M.D. 1945, Temple
Chase, Lida, Assistant Professor of Nursing: B.S. 1960, California (Berkeley); B.S. M.S. 1966, California (San Francisco)
Chattopadhyay, Rahul, Associate Professor of Electrical Engineering B.E. 1962, Jadapur U.; D.I.C. 1964, Imperial C.; M.S. 1966, Ph.D. 1968, UCLA
Chattopadhyay, Virgie O., Assistant Professor of Education: B.S. 1960, St. Theresa's C. (Philippines); M.A. 1966, Ed.D. 1969, UCLA
Chau, Laurence, Assistant Professor of Economics: B.A. 1959, Chung Chi; M.A. 1964, Ph.D. 1968, Wisconsin
Chave, Keith E., Professor of Oceanography: Ph.B. 1948, M.S. 1951, Ph.D. 1952, Chicago
Cheng, Ching-Ying, Associate Professor of Philosophy: B.A. 1956, National Taiwan; M.A. 1958, Washington; Ph.D. 1964, Harvard
Cheng, Edmond D.H., Assistant Professor of Civil Engineering B.S. 1961, National Taiwan; Ph.D. 1969, Utah State
Cheng, Ping, Associate Professor of Mechanical Engineering: B.S. 1958, Oklahoma State; M.S. 1960, M.I.T.; Ph.D. 1967, Stanford
Cheng, Robert L., Associate Professor of Chinese and Japanese: B.A. 1960, M.A. 1963, Taiwan Normal U.; Ph.D. 1966, Indiana
Cheng, Ronald Y.L., Assistant Professor of Sociology: B.S. 1960, London; M.A. 1963, Hong Kong; Ph.D. 1969, California
Chesney, Lee R., Jr., Professor of Art: B.F.A. 1946, Colorado; M.F.A. 1948, Iowa
Ching, Doris M., Instructor in Education: B.Ed. 1963, M.Ed. 1971, Hawaii
Ching, Gilbert A., Assistant Professor of Medicine: B.A. 1944, Oregon; M.D. 1951, Boston
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.Ed. 1961, Taiwan Normal; M.A. 1969, Hawaii
Chirila, Marilce, Instructor in English: B.A. 1969, California State C. (LA); M.A. 1971, Hawaii
Chiu, Wan-Cheng, Professor of Meteorology: B.S. 1941, National Central; M.S. 1947, Ph.D. 1951, New York

Choe, Yong-ho, Assistant Professor of History: B.A. 1961, Arizona; M.A. 1963, Ph.D. 1971, Chicago.


Chou, James C.S., Professor of Mechanical Engineering: B.S. 1941, National Inst. of Tech. (China); M.S. 1949, Georgia Inst. of Tech.; Ph.D. 1968, Oklahoma State.

Chou, Shao-Chia, Associate Professor of Pharmacology: B.S. 1943, West China Union; M.S. 1950, Nebraska, Ph.D. 1958, Stanford.

Chow, Joyce S.Y., Instructor in Tropical Medicine & Medical Microbiology: B.S. 1965, UCLA; M.A. 1966, California (Berkeley).


Chun, Michael J., Assistant Professor of Public Health: B.S. 1966, Kansas; M.S. 1968, Hawaii; Ph.D. 1970, Kansas.

Chung, Chint S., Professor of Public Health and Genetics: B.S. 1951, Oregon State; M.S. 1953, Ph.D. 1957, Wisconsin.

Chung, Mary N., Assistant Professor of Social Work: B.A. 1952, Michigan; M.S. 1954, Columbia.

Chung, N.H. Paul, Associate Professor of Business Economics & Quantitative Methods: B.A. 1952, Chungang; M.A. 1956, Ball S.; Ph.D. 1963, Michigan S.


Ciborowski, Thomas J., Assistant Professor of Psychology: B.S. 1961, California State C. (Long Beach); Ph.D. 1971, California (Irvine).

Clagg, Elizabeth A., Assistant Professor of Food and Nutritional Sciences: B.S. 1943, M.S. 1970, Iowa.

Clark, Elizabeth W., Associate Professor of Public Health: B.S. 1950, Northwestern; M.P.H. 1954, Dr. P.H. 1969, California (Berkeley).

Clark, Renee, Instructor in English B.A. 1967, California (Santa Barbara); M.A. 1970, San Francisco State.

Clark, Richard H., Assistant Professor of Mathematics: B.S. 1940, Yale; M.A. 1949, Michigan.

Clarke, Thomas A., Assistant Professor of Oceanography: B.S. 1962, Chicago; Ph.D. 1968, California (San Diego).


Cody, William J.T., Assistant Professor of Psychiatry: M.D. 1951, Tufts.


Cole, Elizabeth, Lecturer in Music: B.A. 1946, Vassar C.

Collier, Roy W., Assistant Professor of English as Second Language: B.S. 1950, Ohio State; M.A. 1958, Pacific.

Collins, Dwane R., Professor of Education: B.A. 1930, State C. (Iowa); M.S. 1938, Iowa State; Ed.D. 1941, Columbia.


Comitini, Salvatore, Associate Professor of Economics: B.S. 1951, M.S. 1955, Alabama; Ph.D. 1960, Washington.


Congdon, Charles F., Associate Professor of Business Economics & Quantitative Methods: B.S. 1934, Pa. State Teachers C. (W. Chester); M.Ed. 1940, Hawaii; M.B.A. 1953, Columbia.


Contois, David E., Professor of Microbiology: B.A. 1930, UCLA; M.S. 1952, Hawaii; Ph.D. 1958, California.

Conway, Dorothy F., Assistant Professor of Public Health: B.S. 1954, Idaho; M.P.H. 1957, California (Berkeley).

Conway, Ralph H., Associate Professor of Public Health: B.A., B.S. 1954, Georgia Institute of Technology: M.P.H. 1962, UCLA; Dr.P.H. 1968, California (Berkeley).

Coon, Bruce J., Professor of Plant Physiology: B.S. 1936, Washington; State; M.S. 1939, Hawaii; Ph.D. 1947, California.


Coraggio, Peter A., Assistant Professor of Music: B.S. 1962, M.S. 1963, Juilliard.

Corba, Nicholas B., Associate Professor of Engineering Graphics: B.S. 1940, California State C. (Pennsylvania); M.Ed. 1952, Pittsburgh.

Cotlar, Donald A., Associate Professor of Accounting and Business Economics: B.S. 1942, M.B.A. 1943, Ph.D. 1954, California (Berkeley); C.P.A. 1947.

Cotler, Morton, Associate Professor of Management: B.S.M.E. 1950, Drexel; M.S.AeroE. 1955, Drexel; Ph.D. 1969, Georgia.


Cowing, Cedric B., Professor of History: B.A. 1948, M.A. 1950, Stanford; Ph.D. 1956, Wisconsin.

Cox, Dook C., Professor of Geology: B.S. 1938, Hawaii; M.A. 1941, Ph.D. 1965, Harvard.


Cramer, Nancy, Assistant Professor of English as Second Language: B.A. 1952, California (Santa Barbara), M.A. 1963, Hawaii.

Craner, Roger E., Assistant Professor of Chemistry: B.S. 1965, Bowling Green; Ph.D. 1969, Illinois.

Crampton, J.J., Professor of Travel Industry Management: B.A. 1939, Drake; M.B.A. 1941, Washington State.

Craven, Dorothy D., Assistant Professor of Speech Pathology and Audiology: B.S. 1945, S.E. Missouri State; M.A. 1948, Iowa.


Crawford, S. Cromwell, Associate Professor of Religion: B.D. 1952, Serampore; M.A.T. 1939, Indiana; Th.D. 1965, Pacific School of Religion.


Creekmore, J. Wayne, Assistant Professor of Art; B.F.A. 1967, Kansas City Art Institute; M.F.A. 1969, Yale

Criley, Richard A., Assistant Professor of Horticulture; B.S. 1962, M.S. 1964, Pennsylvania; Ph.D. 1968, California

Crooker, Peter P., Assistant Professor of Physics and Astronomy; B.S. 1959, Oregon State; Ph.D. 1967, Naval Postgraduate School

Crowell, David H., Professor of Psychology; B.S. 1946, Drew; Ph.D. 1950, Iowa

Crymes, Ruth H., Professor of English as a Second Language; B.A. 1945, M.A. 1948, Oregon; Ph.D. 1965, Columbia

Csordas, George L. E., Assistant Professor of Mathematics; B.A. 1964, Toronto; M.S. 1966, Ph.D. 1969, Case Western Reserve

Cubberly, Ray E., Assistant Professor of History; B.A. 1958, Whittier; M.A. 1960, Ph.D. 1967, Wisconsin (Madison)

Cunningham, Lillian, Instructor in English; B.A. 1958, Hastings C.; M.A. 1961, Arkansas

Currie, Edward, Associate Professor of Accounting; B.Sc. 1948, Iowa; M.S. 1965, Ph.D. 1967, Minnesota

Curtis, Delores M., Associate Professor of Education; B.S. 1951, Indiana State Teachers; M.S. 1957, Ed.D. 1963, Illinois

D

Dae, Dorothea W., Professor of German; Diploma 1937, Sorbonne; Ph.D. 1953, Texas

Daugherty, Kenneth l., Associate Professor of Anthropology; B.S. 1957, Morehead; M.S. 1964, Ohio

Dav, Richard D., Instructor in Obstetrics & Gynecology; B.B.A. 1952, Portland

Davidson, Jack R., Professor of Agricultural Economics; B.S. 1953, Wyoming; M.S. 1956, Montana State; Ph.D. 1960, California

Davidson, Russell, Instructor in Architecture; M.F.A. 1968, Ohio

Davis, Carl S., Assistant Professor of Mathematics; A.B. 1967, Occidental C.; M.A. 1970, Ph.D. 1972, Wisconsin

Davis, Chester H., Capt., Assistant Director of Military Science; B.S. 1965, Colorado State

Daws, A. Gavan, Professor of History; B.A. 1955, Melbourne; M.A. 1960, Ph.D. 1966, Hawaii

Dawson, Steven M., Assistant Professor of Finance; B.A. 1964, C. of Wooster; M.B.A. 1965, Ph.D. 1972, Michigan


DeFeo, Vincent J., Professor of Anatomy and Reproductive Biology; 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

DeHeer, Gerrit K., Lecturer in Indonesian; B.A. 1953, M.A. 1961, California (Berkeley)

DeMello, Wayne, Lecturer in Music; B.M. 1957, Northwestern

DeMoss, John E., Instructor in English; B.A. 1965, M.A. 1968, Kansas

Denney, Reuel N., Professor of American Studies; B.A. 1932, Dartmouth

Desowitz, Robert S., Professor of Tropical Medicine, Medical Microbiology and Public Health; B.A. 1948, Buffalo; Ph.D. 1951, D.Sc. 1960, London

Des Jarlais, Mary Ellen, Lecturer in Fashion Design & Merchandising; B.S. 1940, M.S. 1953, Wisconsin

Deutsch, Elliot, Professor of Philosophy; B.S. 1952, Wisconsin; Ph.D. 1960, Columbia

Dewey, Alice G., Professor of Anthropology; B.A. 1950, M.A. 1954, Ph.D. 1959, Radcliffe

Diamond, Michael J., Assistant Professor of Psychology; B.A. 1966, UCLA; Ph.D. 1970, Stanford

Diamond, Milton, Professor of Anatomies & Reproductive Biology; B.S. 1935, City C. of New York; Ph.D. 1962, Kansas

Dias, Austin, Assistant Professor of Spanish; B.A. 1963, M.A. 1965, California (Santa Barbara); Ph.D. 1971, Wisconsin

Dick, William H., Jr., Instructor in English; B.A. 1967, U. of Pacific; M.A. 1969, San Francisco State


Digman, John M., Professor of Psychology; B.A. 1948, Ph.D. 1951, Ohio State


Diwan, Arwind R., Assistant Professor of Tropical Medicine, Medical Microbiology and Public Health; B.S. 1952, Bombay; Ph.D. 1965, London

Dobson, Peter N., Jr., Associate Professor of Physics and Astronomy; Ph.D. 1965, Maryland

Doty, Maxwell S., Professor of Botany; B.S. 1939, M.S. 1941, Oregon State; Ph.D. 1945, Stanford

Drinkard, Stephen, Instructor in English; B.A. 1967, M.A. 1968, UCLA

Dubanski, Richard A., Associate Professor of Psychology; B.A. 1962, Wesleyan; M.A. 1966, Minnesota

Dugan, Gordon L., Associate Professor of Civil Engineering; B.S. 1959, M.S. 1964, Washington State; Ph.D. 1970, California (Berkeley)

Dukore, Bernard P., Professor of Drama and Theatre; B.A. 1952, Brooklyn; M.A. 1953, Ohio State; Ph.D. 1957, Illinois

Dunn, Jeffrey B., Assistant Professor of Art; B.S. 1963, Tampa; M.F.A. 1969, Florida

Dunn, Lloyd M., Professor of Education; B.Ed. 1949, M.Ed. 1950, Saskatchewan; Ph.D. 1953, Illinois

Dunn-Rankin, Peter, Associate Professor of Education; B.S. 1953, M.S. 1954, Florida State; M.A. 1963, Louisiana State; Ed.D. 1965, Florida

Dunwell, Jeannine, Instructor in Nursing; B.S. 1953, Kansas; M.A. 1967, Colorado State

Dunwell, Robert R., Professor of Education; B.S.Ed. 1952, M.S.Ed. 1956, Ed.D. 1961, Kansas (Lawrence)

Dupont, Henry J., Professor of Education; B.S. 1949, Lawrence C.; M.S. 1950, Delaware; Ph.D. 1959, George Peabody C.

Dupré, Maurice J., Assistant Professor of Mathematics; B.S. 1965, Florida; M.A. 1969, Miami; Ph.D. 1972, Pennsylvania

Dykstra, Gerald, Professor of Communication: B.A. 1948, M.A. 1948, Ph.D. 1955, Michigan

E

Ebel, Robert D., Assistant Professor of Economics; B.A. 1964, Miami; M.S. 1966, Ph.D. 1971, Purdue

Ecke, Betty, Associate Professor of Art: M.A. 1966, Hawaii; Ph.D. 1972, New York

Edel, Leon, Professor of English

Edelstein, Arnold S., Assistant Professor of English: A.B. 1959, Columbia C.: M.A. 1962, Columbia; Ph.D. 1969, California (Berkeley)

Edge, Alfred, Assistant Professor of Management: B.S. 1958, Rider C.; M.B.A. 1962, Denver; Ph.D. 1972, Arkansas


Ekern, Paul C., Jr., Professor of Agriculture and Soil Science: B.A. 1942, Westminster C.; Ph.D. 1950, Wisconsin

Ekroth, Lauren E., Assistant Professor of Speech: B.S. 1956, M.A. 1958, Ph.D. 1967, Minnesota

Ellingsworth, Huber W., Professor of Communication: B.A. 1949, Pacific (Oregon); M.A. 1950, Washington State; Ph.D. 1955, Florida State

Elliot, Donald F., Assistant Professor of Spanish: B.A. 1931, Monmouth; M.A. 1936, Florida

Ellis, Dean S., Associate Professor of Management & Marketing: B.S. 1960, M.S. 1963, Utah; Ph.D. 1965, Purdue


El-Swaify, Samir A., Associate Professor of Soil Science: B.Sc. 1957, Faculty of Agriculture, Alexandria U., Egypt; Ph.D. 1964, California (Davis)

Endo, Calvin M., Assistant Professor of Sociology: B.A. 1965, M.A. 1967, Ph.D. 1970, Oregon

Frhart, Betty, Instructor in Social Work: B.S. 1940, M.S.W. 1960, California

Ernest, Welden A., Associate Professor of History: B.A. 1953, Buffalo; M.A. 1954, Ph.D. 1967, Harvard


Etherington, A. Bruce, Professor of Architecture: B.Arch. 1947, Cornell

Evans, John R., Professor of Engineering: B.S. 1941, M.S. 1947, Michigan State


Everly, Hubert V., Professor of Education: B.Ed. 1941, M.Ed. 1938, Hawaii; Ph.D. 1946, Ohio State

Everson, Marion, Assistant Professor of Art: B.S. 1945, M.S. 1952, Wisconsin; M.F.A. 1959, Cranbrook Academy of Art

Ezer, Melvin, Professor of Education: A.B. 1930, California (Berkeley); Ed.M. 1951, Tufts; Ed.D. 1961, Harvard

F

Fadley, Charles S., Assistant Professor of Ornithology: S.B. 1963, MIT; M.S. 1965, Ph.D. 1971, California (Berkeley)

Fairbanks, Gordon H., Professor of Linguistics: B.A. 1937, M.A. 1938, Alberta; Ph.D. 1947, Wisconsin


Faison, Edmund W.J., Associate Professor of Marketing: A.B. 1948, M.A. 1950, Ph.D. 1956, George Washington

Fakruddin, Syed M., Assistant Professor of Mathematics: B.A. 1960, M.S. 1961, India (Madras); M.S. 1964, Canada (Windsor); Ph.D. 1969, Canada (Queen's)

Falkner, William A. Jr., Assistant Professor of Tropical Medicine & Medical Microbiology: B.A. 1966, W. Maryland C.; Ph.D. 1969, Maryland

Fan, Poo-Foong, Associate Professor of Geosciences: B.S. 1955, Wheaton C.; M.A. 1963, Ph.D. 1965, California

Fand, Richard M., Professor of Mechanical Engineering: B.S. 1946, Rensselaer Polytechnic Institute; M.S. 1949, Columbia; Ph.D. 1959, Cornell

Fang, Gautier T., Associate Professor of Electrical Engineering: B.S. 1955, National Taiwan; M.S. 1962, Ph.D. 1966, Minnesota

Fargo, George A., Associate Professor of Education: B.A. 1948, M.A. 1959, U.C.L.A.; Ph.D. 1964, Claremont Graduate School

Fargo, Jean M., Assistant Professor of Human Development: B.J. 1947, Missouri; M.S.W. 1959, U.C.L.A.


Fawcett, James T., Associate Professor of Psychology: B.S. 1960, Pennsylvania State; M.S. 1961, Yale; Ph.D. 1965, California (Berkeley)

Feeley, Griffith M., Assistant Professor of Population Studies: B.S. 1968, Antioch; M.A., Ph.D., California (Berkeley)


Fellmeth, Jane B., Assistant Professor of English: B.A. 1939, B.A. 1941, Akron; M.A. 1943, Ohio State

Fellows, David P., Assistant Professor of General Science: B.S. 1963, M.S. 1966, Hawaii; Ph.D. 1970, Arizona

Ferguson, John B., Professor of Personnel Management and Industrial Relations: B.A. 1933, M.B.A. 1935, Stanford; Ph.D. 1960, Cornell

Finley, Barbara, Instructor in English: B.A. 1967, Santa Clara; M.F.A. 1972, Iowa

Finney, Ben R., Associate Professor of Anthropology: B.A. 1955, California (Berkeley); M.A. 1959, Hawaii; Ph.D. 1964, Harvard

Finney, Sandra K., Assistant Professor of Drama and Theatre: B.A. 1967, M.A. 1969, San Francisco State

Fischer, Joel, Associate Professor of Social Work: B.A. 1961, M.S.W. 1964, Illinois; D.S.W. 1970, California

Fleming, Robert H., Lecturer in Music: A.A., Los Angeles City C.

Fletcher, Sally, Lecturer in Art: B.A. 1955, U.C.L.A.; M.A. 1966, Hawaii

Fok, Yu-Si, Associate Professor of Civil Engineering: B.S. 1955, National Taiwan; M.S. 1959, Ph.D. 1964, Utah State

Folsome, Clair E., Professor of Microbiology: B.A. 1956, M.A. 1959, Ph.D. 1960, Harvard

Fong, Margaret L., Assistant Professor of Nursing: B.S. 1956, M.A. 1969, California (San Francisco)

Forman, Michael L., Assistant Professor of Linguistics: A.B. 1961, John Carroll; Ph.D. 1972, Cornell


Fox, Joel S., Associate Professor of Mechanical Engineering: B.S. 1959, M.S. 1961, Ph.D. 1966, Polytechnic Institute of Brooklyn

Fox, Robert L., Professor of Soil Science: B.S. 1948, M.A. 1950, Ph.D. 1954, Missouri
Glick, Doris L., Assistant Professor of English; B.A. 1929, M.A. 1930, Ph.D. 1932, Iowa

Go, Mateo L.P., Professor of Engineering; B.C.E. 1942, Cornell; S.M.C.E. 1943, MIT; Ph.D. 1946, Cornell

Golden, William P., Jr., Professor of Public Health; A.B. 1937, San Francisco; M.A. 1941, Ph.D. 1951, California (Berkeley)

Goo, Frances, Instructor in Medical Technology; B.S. 1969, Hawaii

Goo, Genedina B., B.A. 1961, Fresno: Associate Professor of English; B.S. 1965, California (Berkeley)

Goodfriend, Arthur, Lecturer in New College; B.S. 1928, New York City C.

Goodman, Lenn Evan, Assistant Professor of Philosophy; B.A. 1965, Harvard; D. Phil. 1968, Oxford

Goos, Roger D., Associate Professor of Botany; B.A. 1950, M.S. 1955, Ph.D. 1958, State U. of Iowa

Gopalakrishnan, Chennat. A.B. 1961. Geneva; Associate Professor of Economics; Ph.D. 1969, Hawaii

Grace, George W., Professor of English; B.A. 1959, Carleton; M.A. 1960, Yale; Ph.D. 1964, Stanford

Grace, Richard A., Professor of English; B.A. 1941, Harvard; D. Phil. 1948, Oxford

Goto, Shosuke, Associate Professor of Botany; B.A. 1950, Ph.D. 1955, Osaka, Japan; Assistant Professor of Biology; B.S. 1955

Gould, Richard A., Associate Professor of Anthropology; B.A. 1961, Harvard; Ph.D. 1965, California (Berkeley)

Gott, Wythe, Professor of Economics A.A. 1933, Marin Jr. C.: A.B. 1936, Ph.D. 1948, Stanford

Goto, Shosuke, Associate Professor of Plant Pathology; B.S. 1941, M.S. 1943, Alberta: Ph.D. 1953, Minnesota

Goud, Richard A., Associate Professor of Anthropology; B.A. 1961, Harvard; Ph.D. 1965, California (Berkeley)

Grace, George W., Professor of Linguistics; Lic. 1948, Geneva; Ph.D. 1958, Columbia

Grace, Robert A., Associate Professor of Civil Engineering; B.E.Sc. 1960, Western Ontario; S.M. 1962, Ph.D. 1966, MIT

Granborg, Bertil S.M., Associate Professor of Electrical Engineering; Civing. E.E. 1953, R. Inst. of Techn. (Stockholm); Ph.D. 1951, Wisconsin

Grant, Marcia L., Assistant Professor of Nursing; B.S.N. 1963, M.S.N. 1964, Wayne

Gray, James M., Associate Professor of English; B.A. 1959, Carleton; M.A. 1961, Ph.D. 1966, Southern California

Gray, Wendell, Lecturer in Music B.M. 1952, Syracuse

Grayson, Henry W., Professor of Business Economics & Quantitative Methods; B.A. 1937, Saskatchewan; M.A. 1947, Ph.D. 1950, Toronto

Green, Richard E., Associate Professor of Soil Science; B.S. 1953, Colorado State; M.S. 1957, Nebraska; Ph.D. 1962, Iowa State

Greenberg, Marvin, Associate Professor of Education; B.S. 1957, New York; M.A. 1958, Ed. D. 1962, Columbia


Gregory, Christopher, Professor of Mathematics; B.S. 1938, M.S. 1939, Ph.D. 1941, California Institute of Technology

Griffin, P. Bion, Assistant Professor of Anthropology; B.A. 1963, Maine: Ph.D. 1969, Arizona

Gruss, Yukie T., Associate Professor of Nursing; B.A. 1947, Wells C.; M.N. 1950, M.S. (M.H.H.N.) 1954, Yale

Gross, Jeremiah, Professor of Health; B.A. 1945, M.P.H. 1946, Ph.D. 1954, California (Berkeley)

Groves, Gordon W., Professor of Oceanography; A.B. 1949, UCLA: M.S. 1951, Ph.D. 1955, California (La Jolla)

Gubler, Duane J., Assistant Professor of Tropical Medicine & Medical Microbiology; B.S. 1983, Utah State; M.S. 1985, Hawaii; Sc.D. 1969, Johns Hopkins

Guil-lory, Richard J., Professor of Biochemistry; B.A. 1953, Reed C.; Ph.D. 1962, UCLA

Gulbrandsen, Christian L., Assistant Professor of Medicine; B.S. 1960, M.D. 1963, Wisconsin

Gundersen, Kaare R., Professor of Microbiology; Ph.D. 1962, Gothenburg (Sweden)

Gurian, Jay P., Associate Professor of American Studies; B.A. 1951, Syracuse; M.A. 1957, Hawaii; Ph.D. 1962, Minnesota

Guth, Timothy C., Associate Professor of Education; B.S. 1960, M.Ed. 1962, Ph.D. 1964, North Dakota

H

Haas, Joyce H., Assistant Professor of Library Studies; B.A. 1953, Beloit; M.S. 1957, Illinois; Ph.D. 1970, Rutgers

Haas, Michael, Professor of Political Science; B.A. 1959, Stanford; M.A. 1960, Yale; Ph.D. 1964, Stanford

Hacker, Lorraine G., Director of Overseas Career Program; B.A. 1937, M.A. 1938, Northwestern


Hadlich, Roger L., Professor of Spanish; B.A. 1951, Yale; M.A. 1957, Middlebury; Ph.D. 1961, Michigan

Haehnlen, Frederick P., Jr., Professor of Entomology; B.A. 1949, Gettysburg; M.Ed. 1955, Western Maryland; Ph.D. 1965, Northern Colorado

Haines, John S., Assistant Professor of Economics; B.A. 1961, California (Berkeley): Ph.D. 1970, Wisconsin

Hale, Ralph W., Associate Professor of Obstetrics & Gynecology; B.S. 1956, M.D. 1960, Illinois

Haley, Samuel R., Associate Professor of Zoology; B.A. 1962, M.A. 1964, Ph.D. 1967, Texas

Hall, John B., Associate Professor of Microbiology; A.B. 1957, Kansas; Ph.D. 1960, California

Halstead, Scott B., Professor of Tropical Medicine, Medical Microbiology and Public Health; 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

Hamilton, Richard A., Professor of Horticulture; B.S. 1937, N. Dakota Agricultural; M.A. 1940, Ohio State; Ph.D. 1953, Minnesota

Hammar, Sherrel L., Associate Professor of Pediatrics; B.A. 1953, Idaho: M.D. 1957, Washington

Hammond, Dale A., Instructor in Chemistry; B.A. 1958, Brigham Young

Hanf, William P., Professor of Mathematics; B.A. 1955, Ph.D. 1963, California (Berkeley)

Hankin, Jean H., Associate Professor of Public Health; B.S. 1945, Milwaukee-Dowwer C.; M.S. 1954, Tennessee: M.P.H. 1963, Dr.P.H. 1966, California (Berkeley)

Hanna, Joel M., Assistant Professor of Anthropology & Physiology; B.S. 1961, M.A. 1965, Pennsylvania; Ph.D. 1968, Arizona

Hansen, Margaret J., Instructor of Psychology; A.B. 1961, Fresno: M.S.W. 1963, Pittsburg

Hanson, Sue K., Instructor in Health & Physical Education; B.S. 1957, M.S. 1961, Wisconsin

Haramoto, Frank H., Associate Professor of Entomology; B.S. 1949, M.S. 1953, Ph.D. 1964, Hawaii

Haraway, Donna J., Acting Assistant Professor of General Science; B.A. 1966, Colorado: M.Phil. 1969, Yale

Harding, Gladys D., Associate Professor of General Science; B.A. 1957, Stanford; M.A. 1958, California (Berkeley)

Hardy, Elmo, Associate Professor of Electrical Engineering; B.E. 1953, R. Inst. of Techn. (Stockholm); Ph.D. 1951, Wisconsin

Grant, Marcia L., Assistant Professor of Nursing; B.S.N. 1963, M.S.N. 1964, Wayne

Gray, James M., Associate Professor of English; B.A. 1959, Carleton; M.A. 1961, Ph.D. 1966, Southern California

Gray, Wendell, Lecturer in Music B.M. 1952, Syracuse

Grayson, Henry W., Professor of Business Economics & Quantitative Methods; B.A. 1937, Saskatchewan; M.A. 1947, Ph.D. 1950, Toronto

Green, Richard E., Associate Professor of Soil Science; B.S. 1953, Colorado State; M.S. 1957, Nebraska; Ph.D. 1962, Iowa State
Harrenstien, Howard P., Associate Professor of Civil Engineering; B.S. 1953, Kansas State; M.S. 1956, Ph.D. 1959, Iowa State

Harris, Ira W., Professor of Library Studies; B.L.I.S. 1952, Pratt; M.L.S. 1957, Ph.D. 1967, Rutgers

Harrison, Cynthia, Instructor of Nursing; B.S. 1967, M.N. 1971, Washington

Hart, Jayne L., Assistant Professor of Pharmacology & Physiology; B.A. 1964, North Central C.; M.S. 1966, Ph.D. 1969, Wisconsin


Hartmann, Richard W., Associate Professor of Horticulture; B.A. 1956, Rutgers; M.S. 1957, Virginia Polytechnic Institute; Ph.D. 1962, UCLA

Hartrock, W. Stanley, Professor of Pathology; B.S. 1941, M.D. 1941, Alberta; Ph.D. 1950, Toronto

Hasegawa, Nobuko, Instructor in Japanese; B.A. 1956, Rikkyo

Hass, Bruce M., Assistant Professor of Finance and Real Estate; B.S. 1963, California (Berkeley); M.B.A. 1965, UCLA; D.B.A. 1972, Colorado

Hatano, Kazuo, Instructor in Japanese; B.A. 1953, Toyo U.

Hayakawa, John M., Associate Professor of Public Health; B.S. 1951, M.P.H. 1954, California

Hayes, Charles F., Associate Professor of Physics and Astronomy A.B. 1963, Wheaton C.; M.S. 1965, Ph.D. 1967, Virginia

Hayes, Eloise D., Professor of Education; B.Ed. 1939, Minn. State Teachers C. (St. Cloud); M.A. 1951, Ph.D. 1953, North Carolina

Hazama, Dorothy O., Associate Professor of Education; B.Ed. 1952, Hawaii; M.A. 1955, New York


Heinberg, Paul J., Professor of Communication; B.S. 1949, M.A. 1950, Columbia; Ph.D. 1956, Iowa

Helber, Deanna, Instructor in Food and Nutritional Sciences; B.S. 1962, Oregon; M.S. 1964, Washington

Helber, Larry E., Lecturer in Real Estate; B.S. 1961, Oregon State; M.A. 1968, Washington

Helbling, Mark, Assistant Professor of American Studies; B.A. 1961, California (Berkeley); M.A. 1964, San Francisco; Ph.D. 1972, Minnesota

Heller, H. Robert, Professor of Economics; B.A. 1961, Parsons C.; M.A. 1962, Minnesota; Ph.D. 1965, California (Berkeley)

Henke, Burton L., Professor of Physics and Astronomy; A.B. 1944, Miami (Ohio); M.S. 1946, Ph.D. 1953, California Institute of Technology

Henningsen, Manfred, Associate Professor of Political Science Ph.D. 1967, Munich

Henry, Mary Ellen, Instructor in English; A.B. 1969, Colby C.; M.A. 1971, Hawaii

Herman, Louis M., Professor of Psychology; B.S.S. 1951, M.A. 1952, City C. of N. Y.; Ph.D. 1961, Pennsylvania State

Herman, Nori, Instructor in Japanese B.A. 1935, Washington

Herrick, Orpha E., Associate 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

Herzberg, Mendel, Professor of Microbiology; B.S. 1948, M.A. 1950, Ph.D. 1953, California

Higa, Harold T., Assistant Professor of Education; B.M. 1949, M.M. 1950, Cincinnati

Higa, Masanori, Associate Professor of English as Second Language; B.A. 1953, M.A. 1958, Boston; Ed.D. 1962, Harvard

Hight, Joseph E., Assistant Professor of Economics; B.A. 1965, New Hampshire; Ph.D. 1971, Brown

Hijirida, Kyoko, Instructor in Japanese; B.A. 1964, Keio; M.A. 1970, Hawaii

Hilden, Hugh M., Assistant Professor of Mathematics; B.S. 1958, Rutgers; M.S. 1966, Ph.D. 1968, Stevens Inst. of Tech.

Hilker, Doris M., Associate Professor of Food & Nutritional Sciences B.S. 1949, Chicago; M.S. 1955, Loyola; Ph.D. 1958, Tulane


Hillman, Serrell L., Associate Professor of English and Journalism B.A. 1941, Harvard C.

Hindle, William H., Assistant Professor of Obstetrics & Gynecology B.A. 1952, Stanford; M.D. 1956, Yale

Hines, Robert S., Professor of Music M.M. 1956, Michigan

Hing, Francisco S., Associate Professor of Food Science and Technology; B.S. 1956, National U. (Manila); M.S. 1959, Ph.D. 1963, Wisconsin

Hirano, Robert T., Lecturer in Botany; B.S. 1962, M.S. 1967, Hawaii

Hirayama, Genkyu, Instructor in Japanese; B.L.L. 1953, Chuo U.

Hisaka, Lloyd I., Instructor in Health & Physical Education; B.S. 1965, M.Ed. 1969, Oregon State

Ho, Peter H.P., Assistant Professor of Civil Engineering; B.S. 1965, M.S. 1966, Carnegie Institute of Technology; Ph.D. 1973, C. Mellon

Ho, Shang-Hsien, Instructor in Chinese; M.A. 1968, Texas

Hoffmann, Joan C., Associate Professor of Anatomy and Reproductive Biology B.S. 1959, Wisconsin; Ph.D. 1965, Illinois

Hokama, Yoshitsugu, Professor of Pathology; A.B. 1951, M.A. 1953, Ph.D. 1957, UCLA

Holderness, James S., Associate Professor of Agricultural Economics B.S. 1950, Idaho; M.S. 1952, Cornell

Hollingshead, Virginia, Associate Professor of English; B.S. 1949, Pittsburgh; M.S. 1951, Hawaii; Ph.D. 1960, Washington

Holmes, John R., Professor of Physics and Astronomy; A.B. 1938, M.A. 1941, Ph.D. 1942, UC (Berkeley)

Holmstrom, John C., Acting Assistant Professor of Planning Studies and Economics; B.S. 1964, Stanford

Holton, James S., Professor of Spanish; B.A. 1948, San Diego State; M.A. 1951, Ph.D. 1956, California (Berkeley)

Holtzmann, Oliver V., Professor of Plant Pathology; B.S. 1930, M.S. 1932, Colorado State; Ph.D. 1955, Washington State

Hong, Pill-Whoon, Professor of Surgery M.D. 1942, Severance Union, Seoul, Korea

Hong, Suk Ki, Professor of Physiology M.D. 1949, Yonsei; Ph.D. 1956, Rochester

Hook, Ralph C., Professor of Marketing; B.A. 1947, M.A. 1948, Missouri; Ph.D. 1954, Texas

Hoover, Thomas B., Assistant Professor of Mathematics; B.S. 1964, Redlands; M.S. 1966, San Diego; Ph.D. 1970, Michigan

Hopkins, Mary E., Associate Professor of Management; B.A. 1940, Pittsburgh; M.A. 1958, Ph.D. 1963, Western Reserve

Horan, Claude F., Professor of Art B.A. 1942, San Jose State; M.A. 1946, Ohio State

Horton, Shelley L., Instructor of Nursing; B.S. 1960, Oregon; M.S. 1965, California (San Francisco)

Howard, Irwin, Assistant Professor of Linguistics; B.A. 1963, Hawaii; Ph.D. 1972, MIT

Howard, Stuart A., Professor of Anthropology; B.A. 1955, M.A. 1958, Ph.D. 1962, Stanford

Hsieh, Hsin-I, Assistant Professor of Chinese; B.A. 1963, M.A. 1966, Taiwan; Ph.D. 1971, California (Berkeley)
Ibrahim, Ibrahim, Assistant Professor of Business Economics and Quantitative Methods; B.A. 1961, Damascus; Ph.D. 1969, New York

Ibrahim, Nilufer, Instructor in Social Work; M.S.W. 1957, Wisconsin

Ike, Thomas H., Professor of Business Economics & Quantitative Methods; B.A. 1940, Hawaii; M.A. 1942, Ph.D. 1950, Wisconsin

Ignatius, Mary Ann, Assistant Professor of French; B.A. 1959, Miami; M.A. 1963, Ph.D. 1970, Stanford

Iha, Franklin T., Assistant Professor of Mathematics; B.A. 1961, M.A. 1963, Hawaii; Ph.D. 1969, UCLA

Ihara, Teruo, Professor of Education B.S. 1940, Hawaii; M.A. 1949, Ph.D. 1959, Ohio State

Ihrig, Judson L., Professor of Chemistry; B.S. 1949, Haverford; M.A. 1951, Ph.D. 1952, Princeton

Ikawa, Haruyoshi, Associate Professor of Soil Science; B.S. 1951, M.S. 1956, Hawaii; Ph.D. 1968, Pennsylvania State

Ikeda, Hiroko, Professor of Japanese Literature; B.A. 1936, Tokyo Joshi Daigaku; Ph.D. 1956, Indiana

Immisch, George B., Instructor in Geography; B.A. 1962, M.A. 1964, Hawaii

In, Andrew W.S., Professor of Education; B.Ed. 1941, Hawaii; M.A. 1949, Ph.D. 1951, New York

Ingils, Chester R., Professor of Education; B.A. 1947, Pomona; M.A. 1956, Claremont; Ed.D. 1958, Stanford

Inn, Agnes M.S., 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

Ishida, Jack T., Professor of Agricultural Economics; B.A. 1942, M.A. 1947, Hawaii; Ph.D. 1960, Purdue

Ishigami, Yukiyasu, Instructor in Japanese; B.A. 1962, Keio U.

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

J

Jacang, Amelia R., Instructor of Pediatrics; M.D. 1963, U. of the East (Manila)

Jackson, Ernest A., Professor of European Languages; B.A. 1948, Boston; M.A. 1951, Yale; Ph.D. 1962, Michigan

Jackson, Kenneth L., Assistant Professor of English as Second Language; B.A. 1956, Hendrix; M.A. 1960, Ed.D. 1967, Columbia

Jackstadt, Stephen L., Instructor in Education, Director of Economic Education; A.B. 1965, M.A. 1967, UCLA

Jacob, Philip E., Professor of Political Science; B.A. 1935, Yale; M.A. 1939, Pennsylvania; Ph.D. 1941, Princeton

Jacobs, Laurence W., Associate Professor of Marketing; B.S. 1961, Pennsylvania; M.A. 1963, Ph.D. 1966, Ohio State


Jacobs, Virgil L., Associate Professor of Anatomy & Reproductive Biology B.S. 1957, St. Benedict's; M.S. 1959, St. Louis; Ph.D. 1965, Kansas

Jacobson, Lyle E., Professor of Accounting; B.Sc. 1931, Dana C.; M.A. 1955, Nebraska; Ph.D. 1958, Illinois; C.P.A. 1955

Jaeckel, Solomon P., Associate Professor of Education; B.S. 1935, Wayne State; M.A. 1963, Ed.D. 1965, UCLA

Jakobovits, Leon A., Professor of Psychology; B.A. 1959, M.A. 1960, Ph.D. 1962, McGill

Jeffries, John T., Professor of Physics and Astronomy; B.Sc. 1947, Western Australia; M.A. 1949, Cambridge; D.S. 1962, W. Australia

Jenkins, Esther C., Professor of Education; B.A. 1931, Alderson-Broadus; M.A. 1947, Ph.D. 1962, Ohio State

Jenner, Philip N., Assistant Professor of Cambodian and SE Asian Literatures; B.A. 1946, Washington; Ph.D. 1969, Hawaii

Johnston, Donald D., Professor of History; B.A. 1938, UCLA; M.A. 1941, Ph.D. 1946, S. California

Johnson, Jacqueline B., Assistant Professor of Nursing; B.S. 1949, Adelphi; M.S. 1962, St. John's

Johnson, James S., Associate Professor of Mathematics; B.A. 1964, California (Berkeley); Ph.D. 1967, Colorado (Boulder)

Johnson, Jerry M., Associate Professor of Public Health; B.A. 1965, M.A. 1966, Ph.D. 1969, Minnesota

Johnson, Robert C., Assistant Professor of Speech; B.A. 1960, Pepperdine C.; M.A. 1969, Sacramento State C.

Johnson, Ronald C., Professor of Psychology; B.A. 1949, Minnesota (Duluth); M.A. 1950, Denver; Ph.D. 1959, Minnesota

Johnson, Rubellite K., Assistant Professor of Hawaiian; B.A. 1954, Hawaii

Johnson, Walter, Professor of History B.A. 1937, Dartmouth; M.A. 1938, Ph.D. 1941, Chicago
K


Kagawa, Grace, Instructor in Medical Technology; B.A. 1941, Kansas

Kaina, Lorraine M., Assistant Professor of Health and Physical Education; B.S. 1951, M.Ed. 1965, Hawaii

Kalupahanah, David J., Associate Professor of Philosophy; B.A. 1959, M.A. 1961, Ceylon; Ph.D. 1967, London

Kamemoto, Fred I., 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 K., Instructor in English; B.A. 1960, M.A. 1965, Hawaii

Kane, Rita, Lecturer in Library Studies; B.S. 1953, Boston; M.L.S. 1967, Hawaii

Kane, Robert E., Associate Professor of Anatomy; B.S. 1953, MIT; Ph.D. 1957, Johns Hopkins

Kanehiro, Yoshinori, Professor of Soil Science; B.S. 1942, M.S. 1948, Ph.D. 1964, Hawaii

Kang, Hugh H.W., Associate Professor of History; B.A. 1956, Berea C.; M.A. 1958, Chicago; Ph.D. 1964, Washington

Kanno, Jerry K., Instructor in Mathematics; B.A. 1963, Hawaii; M.A. 1965, Missouri

Kariel, Henry S., Professor of Political Science; B.A. 1948, Washington; M.A. 1950, Stanford; Ph.D. 1954, California (Berkeley)

Kassebaum, Gene, Professor of Sociology; A.B. 1951, Missouri; M.A. 1956, Ph.D. 1958, Harvard

Kau, James B., Assistant Professor of Business Economics and Quantitative Methods; B.A. 1965, M.A. 1967, Ph.D. 1971, Washington

Kau, Joseph L., Assistant Professor of English; B.A. 1958, Hawaii; M.A. 1963, Harvard; Ph.D. 1968, Tufts

Kauka, Anne, Instructor in American Studies; B.S.N. 1956, Northwestern; M.A. 1970, Hawaii

Kawamura, Noreen K., Instructor in Medical Technology; B.S. 1965, Hawaii; M.S. 1971, Northwestern

Kay, E. Alison, Professor of General Science; B.A. 1950, Mills; B.A. 1952, M.A. 1956, Cambridge; Ph.D. 1957, Hawaii

Keeler, Joseph T., Associate Professor of Agricultural Economics; B.S. 1951, California; M.S. 1953, Illinois

Keffer, Noel P., Professor of Botany; B.Sc. 1948, M.Sc. 1950, Melbourne; Ph.D. 1954, London


Kennedy, Virginia N., Assistant Professor of English; B.A. 1935, San Diego State; M.S. 1938, Western Reserve

Kent, George, Associate Professor of Political Science; B.E.E. 1960, Rensselaer; M.A. 1961, Boston; Ph.D. 1965, Illinois

Keppe1, Ann M., Professor of Education M.S. 1943, La Crosse; M.S. 1954, Ph.D. 1960, Wisconsin

Kesling, George D., Assistant Professor of Business Economics and Quantitative Methods; B.S. 1964, M.B.A. 1966, Washington; Ph.D. 1970, Oregon

Kessner, Robert H., Associate Professor of Management; B.A. 1942, Marietta; M.A. 1947, Ed.D. 1952, Columbia

Khan, Mohammad A., Associate Professor of Geodesy; B.S. 1957, M.S. 1963, Punjab; Ph.D. 1967, Hawaii


Kiefer, Edgar F., Professor of Chemistry; B.S. 1957, Stanford; Ph.D. 1960, California Institute of Technology

Kiehm, Ruth S., Instructor in Education; B.A. 1950, UCLA; M.Ed. 1966, Hawaii

Kihara, Deane H., Assistant Professor of Mechanical Engineering; B.S. 1957, M.S. 1958, MIT; Ph.D. 1968, Ohio State

Kim, Chin-Wu, Visiting Professor of Linguistics; B.A. 1958, Yonsei (Korea); B.A. 1962, Washington State; M.A. 1964, Ph.D. 1966, UCLA

Kim, Chung-Won, Lecturer in Music B. 1963, Ehwa U.

Kim, Hazel T., Assistant Professor of Nursing; B.S.N.Ed. 1950, Catholic; M.Ed. 1962, Hawaii

Kim, Ok-kyoung, Assistant Professor & Medical Specialist in Pathology M.D. 1966, Ehwa U. (Korea)

Kim, Shinkyoung, Associate Professor of Business Economics and Quantitative Methods; B.A. 1957, Westmar; M.A. 1960, Wichita State; Ph.D. 1964, Wayne State

Kim, Sun Jai, Associate Professor of Korean and Japanese; B.A. 1943, Meiji Gakuin (Japan); A.B. 1948, Seoul National U.; M.Ed. 1950, Boston; D.Lit. 1968, Kyunghee U. (Korea)

Kim, Tae O.K., Instructor in Korean B.A. 1955, Ehwa Women's U.; M.A. 1959, Hawaii

Kimball, Thomas F., Assistant Professor of Business Law; B.B.A. 1949, Golden Gate C.; J.D. 1959, Santa Clara; C.P.A. 1952

Kimura, Larry L., Instructor in Hawaiian; B.A. 1969, Hawaii

Kimura, Pamela S., Lecturer in Home Economics; B.S. 1968, Hawaii; M.S. 1970, Purdue

Kimura, Sueko, Professor of Art B.A. 1936, M.F.A. 1959, Hawaii

Kimiriwala, Bharat, Professor of Electrical Engineering; B.S. 1950, Benares Hindu U.; 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. 1953, Michigan State


King, Irving L., Assistant Professor of Education; B.A. 1960, California (Riverside); M.A. 1963, South Carolina; Ph.D. 1969, Wisconsin

Kingrey, Kenneth G., Professor of Art; B.Ed. 1940, M.A. 1942, UCLA

Kinoshita, Karl, Instructor in Japanese; B.A. 1962, Koyasan U.; M.A. 1968, Hawaii
Kinzie, J. David, Assistant Professor of Psychiatry; B.A. 1959, M.D. 1963, Washington
Kinzie, Robert A., Assistant Professor of Zoology; B.S. 1963, Santa Clara; M.S. 1966, Hawaii; Ph.D. 1970, Yale
Kirk, Stuart A., Assistant Professor of Social Work; A.B. 1967, California (Berkeley); M.S.W. 1969, Illinois (Urbana)
Kirkpatrick, Arthur L., Assistant Professor of Business Economics and Quantitative Methods; B.A. 1935, M.A. 1937, Illinois
Kirtley, Basil F., Professor of English; B.A. 1949, M.A. 1951, Texas; Ph.D. 1955, Indiana
Kleinfield, Ruth G., Professor of Anatomy & Reproductive Biology B.S. 1949, Brooklyn C.; M.A. 1951, Wisconsin; M.S. 1953, Chicago
Klimenko, Michael, Associate Professor of European Languages B.D. 1955, Zurich; Dr. Phil. 1957, Erlangen
Klopf, Donald W., Associate Professor of Speech; B.A. 1953, M.A. 1955, Hawaii; Ph.D. 1958, Washington
Knapp, Terence, Associate Professor of Drama and Theatre; Dipl. of Distinction 1954, Royal Academy of Dramatic Art, London
Kowalke, Ronald, Associate Professor of Art; B.A. 1959, Rockford C.; M.F.A. 1960, Cranbrook Academy of Art
Kozuma, Harold K., Associate Professor of Education; B.A. 1951, Hawaii; M.S. 1958, D.Ed. 1963, Oregon
Kraemer, Hazel V., Professor of Human Development; A.B. 1934, M.A. 1938, Ph.D. 1945, California (Berkeley)
Krahenbuhl, Gary S., Assistant Professor of Health and Physical Education; B.S. 1965, M.S. 1966, Northern Illinois; Ed.D. 1969, Colorado State C.
Kramer, Hugh E., Associate Professor of Marketing; Arbitur 1949, Goslar; Diplom Kaufman 1952, J. Wolf. Goethe U.; Dr. rer. pol. 1960. Karl Franzen
Krantz, La Var., Assistant Professor of Music; B.A. 1955, M.M. 1964, Utah
Kranzler, Stanley K., Assistant Professor of Mathematics; B.S. 1963, M.A. 1965, Kansas; Ph.D. 1969, California (Santa Barbara)
Krause, Loretta, Associate Professor of Speech & Administration, University Lab Schools; B.A. 1948, Minnesota; M.A. 1961, Nebraska; Ed.D. 1969, South Dakota
Krieger, John A., Associate Professor of Obstetrics: M.D. 1951, New York
Krisberg, Jane, Associate Professor of Social Work; B.A. 1937, Grinnell; M.A.S.A. 1948, Ohio
Krohn, Robert, Assistant Professor of English as Second Language; B.A. 1961, M.A. 1964, Ph.D. 1969, Michigan
Kroppnick, Peter M., Assistant Professor of Oceano- (B.S. 1963, Wayne State; M.S. 1965, California (Berkeley); Ph.D. 1971, California (San Diego)
Kubo, Winifred R., Assistant Professor of Nursing; B.S. 1961, Northwestern; M.S. 1964, California (San Francisco)
Kucera, Geoffrey Z., Associate Professor of Education; B.S. 1959, M.A. 1960, Florida; Ph.D. 1968, Michigan State
Kumabe, Kazuie T., Associate Professor of Social Work; A.B. 1943, Utah; M.S.W. 1960, Hawaii
Kunimoto, Elizabeth N., Assistant Professor of Communication; B.A. 1951, Michigan; M.A. 1965, Hawaii
Kunioka, Miyono, Assistant Professor of Social Work; B.A. 1947, M.S.W. 1966, Hawaii
Kunisaki, John T., Assistant Professor of Horticulture; B.S. 1960, M.S. 1964, Hawaii
Kuo, Franklin F., Professor of Electrical Engineering; B.S. 1955, M.S. 1956, Ph.D. 1958, Illinois
Kuroda, June C.N., Instructor in Medical Technology; B.A. 1963, Hawaii
Kuroda, Yasumasa, Professor of Political Science; B.A. 1956, M.A. 1959, Ph.D. 1962, Oregon
Kurokawa, Shozo, Assistant Professor of Japanese; B.A. 1954, Waseda; M.A. 1970, Hawaii
Kurren, Oscar, Professor of Social Work; B.A. 1943, M.S.W. 1948, Pittsburgh; Ph.D. 1967, Brandeis
Kusanagi, Yutaka, Assistant Professor of Japanese; B.A. 1960, Sophia; Ph.D. 1970, Georgetown
Kutchins, Herbert, Associate Professor of Social Work; A.B. 1955, Chicago; M.S.W. 1970, California (Berkeley)
Kuzminski, Adrian, Assistant Professor of History; B.A. 1966, Amherst C.: Ph.D. 1972, Rochester
Kwok, D. Wynn-Ye, Professor of History; B.A. 1954, Brown; M.A. 1956, Ph.D. 1959, Yale
Kyselka, Will, Associate Professor of Education; B.A. 1947, M.S. 1949, M.A. 1951, Michigan
L
Ladd, Doris M., Assistant Professor of History; A.B. 1955, M.A. 1956, 1964, Ph.D. 1972, Stanford
Lafferty, Mary Lou, Assistant Professor of English; B.A. 1963, Bowling Green; M.A. 1965, Ph.D. 1970, Wisconsin
Lam, Truong Buu, Associate Professor of History; B.A. 1954, M.A. 1955, Ph.D. 1957, U. Catholique de Louvain Belgium
Lamley, Harry J., Associate Professor of History; B.A. 1953, Reed; M.A. 1960, Ph.D. 1964, Washington
Lamoureux, Charles H., Professor of Botany; B.S. 1953, Rhode Island; M.S. 1955, Hawaii; Ph.D. 1961, California
Lampard, William D., Professor of Mathematics; B.A. 1944, Lafayette; Ph.D. 1969, Pennsylvania
Landers, James, Assistant Professor of Chinese; B.A. 1965, Ph.D. 1971, Indiana

Lane, Nancy D., Assistant Professor of Library Studies; B.A. 1966, Oregon; M.S. 1968, UCLA

Lang, Melvin, Professor of Education; B.S. 1953, State U. of New Palz; M.A. 1956, Columbia; Ed.D. 1962, New York

Langford, Stephen A., Instructor in General Science; A.B. 1963, Amherst; M.S. 1969, Hawaii

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-Basse, Jorn, Professor of Mechanical Engineering; M.S. 1958, Ph.D. 1961, Royal Danish Technical U.

Larson, Harold O., Professor of Chemistry; B.S. 1943, Wisconsin; M.S. 1947, Purdue; Ph.D. 1950, Harvard


Larson, Valentine K., Assistant Professor of Speech; B.A. 1935, Fresno State; M.A. 1942, S. California

Lau, Joseph S. M., Associate Professor of Chinese & Comparative Literature; B.A. 1960, National U. of Taiwan; M.A. 1964, Ph.D. 1966, Indiana

Lau, kenneth k., Professor of Business; B.A. 1938, Hawaii; J.D. 1941, Michigan; LL.M. 1951, Harvard

Lau, L. Stephen, Professor of Civil Engineering; B.S. 1953, M.S. 1955, Ph.D. 1959, California

Laurila, Simo L., Professor of Geochemistry; B.Sc. 1946, M.Sc. 1948, Ph.D. 1953, Finland’s Institute of Technology

Layton, Carolyn, Instructor of Nursing; B.S. 1959, Pacific Lutheran; M.N. 1967, Washington

LeBeck, Beverly, Lecturer in Music

Lebra, Takie, Associate Professor of Anthropology; B.A. 1954, Gakushuin U. (Japan); M.A. 1960, Ph.D. 1967, Pittsburgh

Lebra, William P., Professor of Anthropology and Asian Studies; B.A. 1948, M.A. 1949, Minnesota; Ph.D. 1958, Harvard


Lee, Jae R., Associate Professor of Medicine (Okinawa); M.D. 1954, Seoul National U.

Lee, Matthew C.Y., Assistant Professor of Mathematics; B.S. 1961, Taiwan; M.A. 1967, Ph.D. 1969, California (Berkeley)

Lee, Oliver M., Assistant Professor of Political Science; B.A. 1951, Harvard; M.A. 1955, Ph.D. 1962, Chicago


Lee, Peter H., Professor of Korean and Comparative Literature; B.A. 1951, C. of St. Thomas; M.A. 1953, Yale; Ph.D. 1958, Munich

Lee, Samuel S.O., Professor of Accounting; B.B.A. 1952, M.B.A. 1959, Hawaii; Ph.D. 1964, Columbia

Lee, W.C., Assistant Professor of Mathematics; B.A. 1967, Hong Kong; Ph.D. 1972, Southern California

Lefforge, Orland S., Associate Professor of Speech; B.A. 1936, Manchester C.; M.A. 1940, Ph.D. 1953, Wisconsin


Leib, Amos P., Professor of English B.S. 1938, Haverford; M.A. 1947, Harvard; Ph.D. 1963, Tulane

Leib, Edna Lee, Associate Professor of Education; B.A. 1936, Meredith; M.A. 1940, Iowa

Lenney, James F., Associate Professor of Pharmacology; A.B. 1939, Washington; Ph.D. 1947, MIT

Lenzer, Anthony M., Associate Professor of Public Health and Human Development; A.B. 1952, Antioch; Ph.D. 1970, Michigan

Lessa, Richard, Instructor in English B.A. 1964, Rutgers; M.A. 1972, Hawaii

Lessin, Alex, Lecturer, New College B.A. 1961, M.A. 1963, Ph.C. 1967, UCLA

Lester, Mark P., Associate Professor of English as a Second Language B.A. 1956, Pomona; M.A. 1961, Ph.D. 1964, California (Berkeley)

Letton, Donald A., Professor of Education; B.S. 1947, Central State; M.A. 1949, Ph.D. 1955, Minnesota

Levy, Don D., Assistant Professor of Drama and Theatre; B.A. 1949, San Jose; M.A. 1960, Oregon; M.A. 1966, Hawaii

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., Professor of English B.A. 1949, Clark; M.A. 1950, Ph.D. 1957, Wisconsin

Lew, Art, Assistant Professor of Information and Computer Sciences B.S.E.E. 1965, M.S. 1967, Ph.D. 1969, Southern California

Li, Ying-che, Assistant Professor of Chinese; B.A. 1959, Tunghai; M.A. 1964, Ph.D. 1970, Michigan

Liang, Tung, Associate Professor of Agricultural Engineering; B.S. 1956, Taiwan; M.S. 1963, Michigan; Ph.D. 1967, North Carolina State


Lichton, Ira J., Professor of Food and Nutritional Sciences; Ph.B. 1949, Chicago; B.S. 1950, M.S. 1951, Ph.D. 1954, Illinois

Lichty, Lenna G., Assistant Professor of English; B.S. in Ed. 1931, M.A. 1936, S. California

Lieban, Richard W., Professor of Anthropology; B.J. 1943, Missouri; M.A. 1951, Ph.D. 1956, Columbia

Lie, Kwan H., Associate Professor of Business Economics & Quantitative Methods; B.A. 1950, Kongu National Teachers C. (Korea); B.Econ. 1953, Yonsei U.; B.S., B.A. 1955, M.A. 1955, Missouri State; Ph.D. 1969, Chuo U.

Liem, Nguyen-Dang, Associate Professor of SE Asian Languages Bae. 1954, Paris; M.A. 1961, Michigan; Licence en Lettres 1962, Saigon; Ph.D. 1966, Australian National U.

Lim, Maggie, Associate Professor of Public Health; M.R.C.S., L.R.C.P. 1939, London School of Medicine; D.P.H. 1936, Malaya (Singapore)

Lim, Youngil, Associate Professor of Economics; B.A. 1958, Harvard; M.A. 1963, Ph.D. 1965, UCLA

Lin, Shu, Associate Professor of Electrical Engineering; B.S. 1959, National Taiwan; M.S. 1964, Ph.D. 1965, Rice

Lin, T.K., Associate Professor of Medicine; M.D. 1947, National Central, China

Lin, Yu-Chong, Assistant Professor of Physiology; B.S. 1939, Taiwan Normal; M.S. 1964, N. Mexico; Ph.D. 1968, Rutgers

Lind, James D., Assistant Professor of History; B.A. 1964, M.A. 1966, Ph.D. 1971, Minnesota

Linn, James R., Professor of Speech B.A. 1949, M.A. 1950, Alberta; M.F.A. 1953, Hawaii; Ph.D. 1964, Southern California

Lipparelli, Michael A., Assistant Professor of General Science; B.S. 1965, Nevada; M.S. 1967, New Mexico State; Ph.D. 1970, Oregon State

Lister, Lawrence H., Associate Professor of Social Work; B.A. 1957, Willamette; M.S.W. 1959, Washington; D.S.W. 1971, Columbia

Little, James R., Associate Professor of Health and Physical Education; B.S. 1958, Arizona State; M.Ed. 1960, Missouri; Ph.D. 1968, Iowa

Liu, Robert S.H., Professor of Chemistry; B.S. 1961, Howard Payne; Ph.D. 1965, California Institute of Technology.


Lo, Mei-Li, Assistant Professor of Nursing; B.S. 1954, Hawaii; M.A. 1965, Teachers C., Columbia.

Loh, Philip C.S., Professor of Microbiology; B.S. 1950, Morningside; M.S. 1953, Iowa State; M.P.H. 1954, Ph.D. 1958, Michigan.


Losey, George S., Jr., Assistant Professor of Zoology; B.S. 1964, Miami; Ph.D. 1968, Scripps Institution of Oceanography.


Love, Lucile L., Assistant Professor of Nursing; B.S.N.E. 1955, M.S.N. 1961, Catholic U.

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.

Lum, Bert K.B., Professor of Pharmacology; B.S. 1951, Ph.D. 1956, Michigan; M.D. 1960, Kansas.

Lum, Cheong, Assistant Professor of Education; B.Ed. 1952, Hawaii; M.A. 1958, New York.

Lum, Jean L., Associate Professor of Nursing; B.S. 1960, Hawaii; M.S. 1961, California (San Francisco); M.A. 1969, Ph.D. 1972, Washington.

Lum, Lillian A., Associate Professor of Education; B.A. 1935, M.Ed. 1960, Hawaii.

Lum, Richard S., Associate Professor of Music; B.Ed. 1951, Hawaii; M.Mus.Ed. 1953, Northwestern.

Lumeng, James, Associate Professor of Pathology; B.S. 1958, Illinois; M.D. 1962, Southern California.

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.S. 1948, Ph.D. 1951, Iowa.

Luykx, Nicolaas G.M. II, Professor of Agricultural Economics; B.S. 1953, M.S. 1958, Ph.D. 1962, Cornell.

Lyovin, Anatole V., Assistant Professor of Linguistics; A.B. 1964, Princeton; Ph.D. 1972, California (Berkeley).

M.

Ma, Yau-woon, Assistant Professor of Chinese Literature; B.A. 1965, Hong Kong; Ph.D. 1971, Yale.

MacDonald, Gordon A., Senior Professor of Geology and Geophysics; B.A. 1933, M.A. 1934, UCLA; Ph.D. 1938, California.


MacDonald, W. Scott, Associate Professor of Psychology; B.A. 1956, Ph.D. 1960, UCLA.

MacGregor, Beatriz B., Assistant Professor of Education; B.S. 1945, M.S. 1952, Trenton State C.

Macleod, John A., Professor of Zoology; B.S. 1950, Oregon State; M.S. 1953, California; Ph.D. 1961, Cornell.


Mader, Adolf G., Associate Professor of Mathematics; M.S. 1961, Tubingen (Germany); Ph.D. 1964, New Mexico State.

Mak, James, Assistant Professor of Economics; B.S. 1964, Miami (Ohio); Ph.D. 1969, Purdue.

Malahoff, Alexander, Associate Professor of Geophysics; B.Sc. 1961, New Zealand; M.Sc. 1962, Wellington; Ph.D. 1965, Hawaii.

Malecha, Spencer R., Assistant Professor of Genetics; B.S. 1965, Loyola; M.S. 1968, Ph.D. 1971, Hawaii.

Malby, Joseph, Associate Professor of English; B.A. 1952, M.A. 1957, Stanford; Ph.D. 1963, Wisconsin.

Mamiya, Richard T., Professor of Surgery; B.S. 1950, Hawaii; M.D. 1954, St. Louis.

Mandel, Morton, Professor of Biophysics; B.C.E. 1944, City C. of N.Y.; M.S. 1949, Ph.D. 1957, Columbia.

Manghanni, Murli, Associate Professor of Geophysics; B.Sc. 1957, M.Sc. 1958, Indian School of Mines and Applied Geology (India); A.I.S.M. 1958, Ph.D. 1962, Montana State.

Mann, J. Adin, Associate Professor of Chemistry and Biophysics; B.S. 1954, Ph.D. 1962, Iowa State.

Mann, Judith K., Visiting Assistant Professor of Economics; B.A. 1962, Ph.D. 1966, UCLA.

Mansson, Helge H., Associate Professor of Psychology; B.A. 1960, California (Los Angeles); Ph.D. 1965, New York.

Mapes, Marion O., Assistant Professor of Agronomy; B.S. 1934, Hawaii; M.S. 1943, Cornell.

Marchette, Nyven J., Associate Professor of Tropical Medicine & Medical Microbiology; B.S. 1950, M.S. 1953, California (Berkeley); Ph.D. 1960, Utah.


Maretzki, Audrey, Assistant Professor of Food and Nutritional Sciences; B.S. 1957, M.S. 1960, Pennsylvania State.

Maretzki, Thomas W., Professor of Psychiatry and Anthropology; B.A. 1951, Hawaii; Ph.D. 1957, Yale.

Margolis, Stanley V., Assistant Professor of Oceanography; B.S. 1964, Miami; M.S. 1966, Florida State; Ph.D. 1971, UC (Riverside).

Margulies, Herbert F., Professor of History; B.A. 1950, Reed; M.A. 1951, Ph.D. 1953, Wisconsin.

Markoff, Richard A., Assistant Professor of Psychiatry; M.D. 1939, New York.

Marsella, Anthony, Assistant Professor of Psychology; B.A. 1962, Baldwin-Wallace C.; M.A. 1964, Kent State; Ph.D. 1968, Pennsylvania State.


Martin, John C., Assistant Professor of Mathematics; B.A. 1966, Ph.D. 1971, Rice.


Martin, Stephen L., Assistant Professor of Health & Physical Education; B.A. 1964, Denver; M.A. 1965, Minnesota; Ph.D. 1969, Southern California.

Martinez, Albert P., Associate Professor of Plant Pathology; B.S. 1955, Florida.

Marvit, Robert C., Associate Professor of Public Health; B.S. 1960, Massachusetts C. of Pharmacy; M.D. 1964, Tufts; M.S. 1970, Harvard.

Mason, Charles W., Assistant Professor of English as Second Language; B.A. 1949, Roosevelt; M.Ed. 1951, Colorado; Ph.D. 1968, Southern Illinois.

Mason, Richard G., Assistant Professor of Drama and Theatre; B.A. 1950, Swarthmore; M.F.A. 1953, Yale.

Masterson, Lawrence J., Assistant Professor of Geography; B.A. 1967, M.A. 1969, Michigan State.
FACULTY

Minke, Karl A., Jr., Associate Professor of Psychology; B.S. 1961, Arizona State; Ph.D. 1968, Wisconsin

Mitchell, Wallace C., Professor of Entomology; B.S. 1942, M.S. 1949, Ph.D. 1955, Iowa State

Mitsuda, Tetsuichi, Professor of Civil Engineering; B.S. 1949, Rose Polytechnic Institute; M.S. 1952, Ph.D. 1965, Illinois

Miyahara, Allen, Associate Professor in Animal Science; D.V.M. 1954, M.S. 1960, Iowa State

Miyahara, James T., Associate Professor of Pharmacology; B.S. 1960, Ph.D. 1966, Utah

Miyamura, Henry, Lecturer in Music B.M. 1960, Eastman School of Music

Moberly, Ralph M., Jr., Professor of Geology; B.A. 1950, Ph.D. 1956, Princeton

Mock, G. Wesley, Assistant Professor of Health & Physical Education B.S. 1963, West Chester State C.; M.S. 1966, Ph.D. 1972, Purdue

Mockridge, Susan, Instructor in English; B.A. 1965, Iowa; M.A. 1969, Wisconsin

Moncur, James E.T., Assistant Professor of Economics; B.A. 1964, M.A. 1965, Wyoming; Ph.D. 1971, Washington State

Montalvo, Francisco E., Assistant Professor of Agricultural Biochemistry B.S. 1965, Texas; M.S. 1967, Ph.D. 1970, Louisiana State

Montes, Matias, Professor of Spanish B.A. 1948, Havana Institute; Dr. in Philosophy 1952, Havana

Montes, Yara, Assistant Professor of Spanish; Dr. in Philosophy and Letters 1952, Havana

Moody, Raymond A., Associate Professor of Spanish; B.A. 1958, Stanford; Ph.D. 1967, UCLA

Mookini, Edwin H., Professor of Mathematics; B.S. 1947, M.S. 1948, Chicago; Ph.D. 1964, UCLA

Moore, Anneliese W., Associate Professor of European Languages B.A. 1958, Hawaii; M.A. 1959, California (Berkeley)

Moore, Cornelia N., Assistant Professor of German; B.A., M.A. 1966, Colorado; Ph.D. 1971, Indiana

Moore, Richard D., Assistant Professor of Radiology; B.A. 1940, Virginia; M.D. 1944, Jefferson Medical C.

Moore, Richard E., Associate Professor of Chemistry; B.S. 1957, San Francisco; M.S. 1959, Ph.D. 1962, California (Berkeley)

Moore, Ronald M., Assistant Professor of Philosophy; A.B. 1964, Stanford; Ph.D. 1971, Columbia

Moore, Terence O., Associate Professor of Physiology; A.B. 1961, A.M. 1963, Ph.D. 1966, Missouri

Moriwaki, Takeshi, Associate Professor of Education; B.A. 1951, M.A. 1952, Ph.D. 1962, Indiana

Morris, James D., Professor of Education; B.S. 1955, Northern State C.; M.A. 1957, Ed.D. 1961, North Dakota

Morris, Marjorie G., Assistant Professor of Social Work; A.B. 1934, Ohio; M.S.W. 1947, George Warren Brown

Morris, V. Dixon, Associate Professor of History; B.A. 1958, Centenary C. of Louisiana; Ph.D. 1970, Washington

Morton, Bruce E., Assistant Professor of Biochemistry; B.A. 1960, La Sierra C.; M.S. 1963, Ph.D. 1965, Washington

Moscott, Albert D., Associate Director of Overseas Career Program B.A. 1942, New Jersey State Teachers C.; M.A. 1947, Michigan; Ph.D. 1950, Yale

Moscove, Stephen A., Assistant Professor of Accounting; B.S. 1965, M.S. 1966, Illinois; Ph.D. 1971, Oklahoma State

Moser, Roy E., Professor of Food Science and Technology; B.S. 1944, M.S. 1947, Massachusetts

Mower, Howard F., Professor of Biochemistry; B.S. 1951, Ph.D. 1955, California Institute of Technology

Moy, James H., Associate Professor of Food Technology; B.S. 1957, M.S. 1958, Wisconsin; Ph.D. 1965, Rutgers

Mucklo, Margaret, Instructor in English; B.A. 1968, M.A. 1970, M.F.A. 1971, Bowling Green State

Mueller-Dombois, Dieter, Professor of Botany; Diplom Landwirt 1951, Stuttgart-Hohenheim; B.Sc.F. 1955, Ph.D. 1960, British Columbia

Muenow, David W., Assistant Professor of Chemistry; B.A. 1961, Carleton; Ph.D. 1967, Purdue

Munckhmeier, Frederick C., Associate Professor of Mechanical Engineering B.S. 1942, Coast Guard Academy; M.S. 1948, MIT

Murakami, Takio, Professor of Meteorology; D.Sc. 1960, Tokyo

Murdoch, Charles L., Assistant Professor of Horticulture; B.S. 1959, M.S. 1960, Arkansas; Ph.D. 1966, Illinois

Murphy, Garth I., Professor of Oceanography; B.A. 1943, M.A. 1948, California (Berkeley); Ph.D. 1965, California (San Diego)

Muray, Marjorie, Instructor in English; B.A. 1963, Notre Dame; M.A. 1966, Calif. (Berkeley); Second. Cred. 1967, Calif.

Murray, Michael D., Assistant Professor of Psychology; B.A. 1966, Ph.D. 1969, Washington

Murton, Brian J., Assistant Professor of Geography; B.A. 1961, M.A. 1962, Canterbury; Ph.D. 1970, Minnesota

Myers, Dale W., Assistant Professor of Mathematics; B.A. 1963, M.A. 1966, Ph.D. 1972, California

Mytinger, Robert E., Professor of Public Health; B.S. 1948, UCLA; M.P.H. 1950, California (Berkeley); Dr.P.H. 1965, UCLA

N

Nader, Fareed W., Acting Assistant Professor of Civil Engineering B.S.C.E. 1961, Arizona; M.S.E. 1966, Arizona State

Nader, Helen, Assistant Professor of History; B.A. 1958, Arizona; M.A. 1959, Smith C.; Ph.D. 1972, California (Berkeley)

Nagata, Kenneth M., Lecturer in Botany; B.A. 1968, Hawaii

Nagley, Winfield E., Professor of Philosophy; B.A. 1940, Southern California; B.D. 1943, SF Theological Sem.; Ph.D. 1947, S. California

Nagoshi, Jack T., Associate Professor of Social Work; B.A. 1951, M.S.W. 1953, Hawaii

Najita, Kazutoshi, Associate Professor of Electrical Engineering B.S. 1953, Illinois Institute of Technology; M.S. 1955, Brown; Ph.D. 1969, Hawaii

Najita, Shuku, Assistant Professor of Nursing; B.S. 1954, M.A. 1954, Tokyo

Nakaguma, Capt. Fred E. (USAF), Assistant Director of Aerospace Studies; B.A. 1963, Hawaii; M.A. 1968, S. California

Nakamura, Gladys T., Instructor in Medical Technology; B.S. 1970, Hawaii

Nakamura, Robert, Associate Professor of Animal Science; D.V.M. 1939, Washington State; M.S. 1966, Ph.D. 1967, Wisconsin

Nakasone, Harry, Lecturer in Music

Nakasone, Henry Y., Professor of Agriculture B.A. 1943, M.S. 1952, Ph.D. 1960, Hawaii

Nakasone, Yoshio, Lecturer in Music

Nakayama, Tommi, Professor of Food Science; B.S. 1951, Ph.D. 1957, California (Berkeley)

Nam, Sunwoo, Assistant Professor of Journalism; B.A. 1961, Hankuk U. of Foreign Studies; M.A. 1965, 1967, Stanford; Ph.D. 1969, Wisconsin

Namba, Ryoji, Professor of Entomology B.S. 1948, M.S. 1950, Michigan State; Ph.D. 1953, Minnesota

Namjoo, Iqbal M., Assistant Professor of Electrical Engineering; B.S. 1958, Panjab; B.E. 1960, Youngstown; M.S. 1961, Pennsylvania; Ph.D. 1969, Cornell
Naughton, John J., Professor of Chemistry; B.S. 1936, City C. of N.Y.; M.S. 1940, Ph.D. 1942, NYU

Naya, Seiji, Professor of Economics B.A. 1958, Hawaii; M.A. 1962, Ph.D. 1965, Wisconsin

Nell, J. Meredith, Assistant Professor of American Studies; B.A. 1959, Yale; M.S. 1963, Wisconsin; Ph.D. 1966, Washington State

Nelson, Peter E., Instructor in English; B.A. 1964, Occidental C.; M.F.A. 1968, California (Irvine)

Nelson, Torlef, Professor of Education; B.S. 1942, M.S. 1947, Oregon; Ed.D. 1952, Washington

Neogy, Prithwish, Associate Professor of Oceanography; B.A. 1965, Antioch; Ph.D. 1971, McGill

Newby, Idus A., Professor of History B.S. 1951, Georgia Southern C.; M.A. 1957, South Carolina; Ph.D. 1962, UCLA

Newhouse, W. Jan, Associate Professor of General Science; B.S. 1949, Dartmouth; M.S. 1952, New Hampshire; Ph.D. 1967, Hawaii

Newton, Olive C., Assistant Professor of English; B.A. 1931, Adrian C.; M.A. 1942, Ohio State

Nicholas, Terence C., Assistant Professor of Physiology; B.S. 1965, Ph.D. 1970, Western Australia

Nicol, Elizabeth A.H., Assistant Professor of Education; B.A. 1964, Stanford; M.Ed. 1969, Hawaii; Ph.D. 1972, Stanford

Niedzielski, Henri, Professor of French; B.A. 1959, M.A. 1963, Ph.D. 1964, Connecticut

Nelson, N. Norby, Professor of Civil Engineering; M.S. 1954, Technical U. of Denmark; Ph.D. 1964, California Institute of Tech.

Nishida, Toshiyuki, Professor of Entomology; B.S. 1941, M.S. 1947, Hawaii; Ph.D. 1953, California

Nishimoto, Karen M., Instructor in General Science; B.Ed. 1968, Hawaii; M.S. 1970, Purdue

Nishimoto, Roy K., Assistant Professor of Horticulture; B.S. 1966, M.S. 1967, Oregon; Ph.D. 1970, Purdue

Nishimura, Edwin T., Professor of Pathology; A.B. 1940, M.D. 1945, Wayne State

Nishiyama, Kazuo, Assistant Professor of Speech; B.A. 1965, M.A. 1968, Hawaii; Ph.D. 1970, Minnesota

Nitz, Lawrence H., Assistant Professor of Political Science; B.A. 1963, Michigan; M.A. 1965, Ph.D. 1969, Michigan State

Niyekawa-Howard, Agnes, Professor of Human Development; B.A. 1945, Tokyo Joshi Daigaku; B.A. 1952, Hawaii; M.A. 1954, Bryn Mawr C.; Ph.D. 1960, New York

Nozukura, Walter S., Associate Professor of Dental Hygiene; D.D.S. 1958, Michigan

Nobusawa, Nobuo, Professor of Mathematics; B.S. 1953, M.Sc. 1955, Ph.D. 1958, Osaka

Noda, Daniel S., Professor of Education; B.Ed. 1941, Hawaii; Ph.D. 1952, Ohio State

Norby, Ronald, Assistant Professor of Nursing; B.S. 1965, Baylor; M.S. 1970, Washington

Norris, Ben, Professor of Art B.A. 1931, Pomona

Norton, Ted R., Professor of Pharmacology (Medicinal Chemistry) A.B. 1940, C. of Pacific; Ph.D. 1943, Northwestern

Nose, Katashi, Associate Professor of Physics and Astronomy; B.S. 1937, Hawaii; Ed.M. 1961, C.A.S. 1969, Harvard

Nunn, G. Raymond, Professor of History and Lecturer in Library Studies B.A. 1930, London; M.A. 1945, Ph.D. 1957, Michigan

Nunokawa, Walter, Professor of Education; B.S. 1930, M.S. 1932, Washington State; Ph.D. 1960, Oregon

O'Brien, Ethel M., Associate Professor of Health and Physical Education; B.A. 1937, California; M.Ed. 1950, Hawaii; Ed.D. 1958, Oregon

O'Brien, John T., Researcher in Ocean Engineering; B.S. 1935, Minnesota

Oda, June, Assistant Professor of Social Work; B.S. 1952, 5 Yr. Cert. 1953, Hawaii; M.S.S. 1960, Smith

Odom, Charles B., Associate Professor of Obstetrics & Gynecology; B.S. 1959, M.D. 1962, Tulane

O'Donnell, Clifford R., Assistant Professor of Psychology; B.A. 1964, Fairleigh Dickinson; M.S. 1966, Oklahoma State; Ph.D. 1970, Kentucky

Ogawa, Dennis M., Assistant Professor of American Studies; A.B. 1966, M.A. 1967, Ph.D. 1969, UCLA

O'Harrow, Stephen D., Assistant Professor of Vietnamese; B.A. 1962, Michigan; M.A. 1965, London; Doctorat-es-Etudes Orientales 1972, Sorbonne

Ohno, Mary, Instructor in Nursing B.S. 1967, M.N. 1969, UCLA

Okamoto, Nancy, Instructor of Nursing; B.S. 1968, M.S. 1970, California (San Francisco)

Okazaki, George K., Instructor in Social Work; B.A. 1960, M.S.W. 1962, Hawaii

Oliver, Douglas, Pacific Islands Chair in Anthropology; B.A. 1934, Harvard; Ph.D. 1935, U. of Vienna, Austria

Olsen, Robert F, Associate Professor of Religion; A.B. 1958, George Washington; Ph.D. 1967, Columbia & Union Theological Seminary


Omps, James R., Professor of Accounting; B.S. 1951, Brigham Young; M.Litt. 1957, Ph.D. 1961, Pittsburgh; C.P.A. 1958

Orrall, Frank Q., Professor of Physics and Astronomy; B.S. 1950, Massachusetts; A.M. 1954, Ph.D. 1956, Harvard

Oshima, Harry T., Professor of Economics; B.A. 1940, Hawaii; Ph.D. 1955, Columbia

Otuki, Toshiyuki, Assistant Professor of Business Economics and Quantitative Methods; B.A. 1960, M.A. 1962, Washington State; M.A. 1967, Wisconsin

Overbeek, Johannes, Assistant Professor of Economics; B.A. 1956, Nijenrode, Breukelen; M.A. 1961, Ph.D. 1970, Geneva

Overmeyer, Karan L., Instructor of Nursing; B.S. 1966, M.Ed. 1968, Columbia

Ownbey, Ray, Instructor in English B.S. 1960, Oregon; M.A. 1965, Reed C.; Ph.D. 1972, Utah

Oxford, Wayne H., Assistant Professor of Speech; B.A. 1954, M.A. 1960, Ph.D. 1969, UCLA

P

Pager, David, Professor of Information and Computer Sciences; B.Sc. 1956, Cape Town; Ph.D. 1967, London

Paige, Glenn D., Professor of Political Science; B.A. 1935, Princeton; M.A. 1937, Harvard; Ph.D. 1959, Northwestern

Paik, Yong Kyun, Professor of Genetics B.S. 1950, Seoul National U.; D.Sc. 1959, Osaka U.

Paik, Young K., Assistant Professor of Pathology; M.D. 1956, Seoul National U.

Pak, Tae-Yong, Assistant Professor of English; LL.B. 1961, Seoul National; M.A. 1966, Ph.D. 1969, Bowling Green State

Pakvasa, sandip, Associate Professor of Physics and Astronomy; B.S. 1954, M.S. 1957, Baroda (India); Ph.D. 1965, Purdue

Palafax, Anastacio L., Associate Professor of Poultry Science; B.S. 1940, M.S. 1941, Washington State; Ph.D. 1970, Michigan State
Q

Reeser, H. Clayton, Assistant Professor of French; B.A. 1951, Willamette; M.A. 1963, Washington; Ph.D. 1971, Oregon
Quong, Ted Lee, Assistant Professor of Dental Hygiene; B.A. 1955, Wittenburg; D.D.S. 1960, Western Reserve

R

Rajapur, Gayathri, Lecturer in Music; B.A. 1963, Karnataka U. (India)
Ramage, Colin S., Professor of Meteorology; B.S. 1940, Victoria U. C. (New Zealand); Sc.D. 1961, New Zealand
Ramanathan, S., Assistant Professor of Pharmacology; B.S. 1954, Am. Col., India; M.A. 1957, Presidency Col., India; Ph.D. 1964, Indian Inst. of Sc., India
Rashad, Mohamed Nabil, Associate Professor of Genetics; M.B., B.Ch. 1958, Cairo U., U.A.R.; Ph.D. 1968, Stanford
Raps, Richard L., Professor of Management; B.A. 1937, Nebraska; M.F.A. 1947, Yale; Ph.D. 1951, Illinois
Riggs, Fred W., Professor of Political Science; B.A. 1938, Illinois; M.A. 1941, Fletcher School; Ph.D. 1948, Columbia
Rockey, Harry A., Professor of Music; A.B. 1932, DePauw; M.A. 1936, Northwestern; Ph.D. 1942, Harvard
Riddle, David B., Associate Professor of Economics; B.A. 1961, Michigan; M.A. 1969, Ph.D. 1972, Cornell
Ricks, Shirley, Associate Professor of Management; B.A. 1957, Arizona State; M.S. 1957, Iowa State; Ph.D. 1967, Kiel (Germany)
Rice, Robert C., Assistant Professor of Economics; B.A. 1961, Michigan; M.A. 1969, Ph.D. 1971, Wisconsin
Richman, Eugene, Professor of Management; B.A. 1934, Pennsylvania; M.A. 1936, Pennsylvania; Ph.D. 1940, New York
Ridley, Richard L., Professor of Music; A.B. 1937, Nebraska; M.F.A. 1947, Yale; Ph.D. 1951, Illinois
Riddick, Mary E., Professor of Education; B.A. 1939, National C. of Education; M.A. 1943, Northwestern; Ed.D. 1967, Indiana
Reed, Helen C., Assistant Professor of Education; B.Ed. 1931, National C. of Education; M.A. 1947, Columbia
Reed, S. Arthur, Associate Professor of Zoology; B.S. 1951, Kent State; M.A. 1953, Ph.D. 1962, Michigan State
Reese, Ernst S., Professor of Zoology; B.A. 1953, Princeton; Ph.D. 1960, UCLA
Reeseer, H. Clayton, Associate Professor of Management; B.S. 1941, Southern California; M.B.A. 1957, UCLA; D.B.A. 1968, Washington
Reid, Ian E., Professor of Education; B.S. 1957, M.S. 1960, Ph.D. 1964, Utah
Reid, J. Stephen, Lecturer in Insurance; B.A. 1962, Dartmouth; M.B.A. 1964, Michigan
Reid, Lawrence A., Assistant Professor of Linguistics; M.A. 1964, Ph.D. 1966, Hawaii
Resig, Johanna, Associate Professor of Geology; B.S. 1954, M.S. 1956, Southern California; Dr. Rer.nat. 1965, Kiel (Germany)
Rice, Robert C., Assistant Professor of Economics; B.A. 1961, Michigan; M.A. 1969, Ph.D. 1972, Cornell
Richards, John A., Assistant Professor of Economics; B.A. 1967, Illinois; M.A. 1969, Ph.D. 1971, Wisconsin
Ricks, Shirley, Instructor in English; B.A. 1969, California State C. (Hayward); M.A. 1972, San Francisco State C.
Ridgway, John W., Lecturer in Biology; M.A. 1938, University of Chicago; Ph.D. 1942, California
Rolston, Theodore, Professor of Psychology; B.A. 1931, Miami; M.A. 1939, Ohio State
Robbee, Richard N., Lecturer in Music; B.A. 1967, Washington
Rockett, Jack L., Assistant Professor of Health and Physical Education A.B. 1947, California (Berkeley); M.A. 1951, State C. (Hayward); Ph.D. 1971, Southern California
Rodgers, Theodore, Assistant Professor of Psycholinguistics; B.A. 1956, Amherst; M.S. 1962, Georgetown; Ph.D. 1966, Stanford
Rogers, Kenneth, Associate Professor of Mathematics; B.A. 1951, Trinity C.; Cambridge; Ph.D. 1954, Cambridge
Rogers, Rita, Instructor in English; B.S. 1960, Northern State C.; M.A. 1962, South Dakota
Rogers, Terence A., Professor of Physiology; B.S. 1952, British Columbia; Ph.D. 1955, California
Rohrer, Ira S., Assistant Professor of Political Science; B.S. 1960, Illinois Institute of Technology; M.A. 1964, Ph.D. 1967, Michigan State
Roldan, Juana, Assistant Professor of Spanish; Licen. en Filo. y Let. 1944, Zaragoza U.; M.A. 1964, Ph.D. 1968, S. California
Roop, D. Haigh, Assistant Professor of SE Asian Languages; B.A. 1954, Harvard; M.A. 1964, Ph.D. 1970, Yale
Rosario, Florangel Z., Assistant Professor of Communication; B.S.Ed., M.A., Philippines; Ph.D. 1970, Syracuse
Rose, John C., Professor of Geophysics; B.S. 1948, M.S. 1950, Ph.D. 1955, Wisconsin
Rose, Louis, Assistant Professor of Economics; B.S. 1964, Oklahoma; M.A. 1964, California (Berkeley); Ph.D. 1970, UCLA
Rosen, Sidney M., Assistant Professor of Social Work; A.B. 1958, M.S.W. 1961, Wayne
Ross, Ernest, Professor of Poultry Science; B.S. 1946, Arizona; M.S. 1951, Ph.D. 1955, Ohio
Rostover, Fred, Associate Professor of Art; A.A. 1965, Gavilan; B.A. 1967, M.A. 1968, San Jose; M.F.A. 1970, Hawaii
Rossok, Theodore, Visiting Professor; New College; B.A. 1955, UCLA; Ph.D. 1958, Princeton
Rotar, Peter P., Professor of Agronomy; B.S. 1955, M.S. 1957, Washington State; Ph.D. 1960, Nebraska
Rowell, Annette J., Lecturer in Music; B.M. 1955, Eastman School of Music
Rowell, Lewis E., Professor of Music B.M. 1955, Ph.D. 1958, Eastman School of Music
Rummel, Rudolph J., Professor of Political Science; B.A. 1959, M.A. 1961, Hawaii; Ph.D. 1963, Northwestern
Russell, Armand K., Professor of Music; B.A. 1953, M.A. 1954, Washington; D.M.A. 1958, Eastman School of Music
Russell, Lois R., Lecturer in Music
Ryan, T. Antoinette, Professor of Education; B.A. 1948, Stanford; M.A. 1952, Sacramento State; Ph.D. 1963, Stanford
Ryang, David G., Professor of Education; B.A. 1932, DePauw; A.M. 1933, Ph.D. 1937, Minnesota

S

Sadler, James C., Associate Professor of Meteorology; B.S. 1941, Tennessee Polytechnic Institute; M.A. 1947, UCLA
Sagawa, Yoneo, Professor of Horticulture; B.A. 1950, M.A. 1952, Washington; Ph.D. 1956, Connecticut
St. Denis, Manley, Professor of Ocean Engineering; B.S. 1932, MIT; M.S. 1940, Pennsylvania; D. Eng. 1956, Catholic U. of America
Saito, Shiro, Assistant Professor of Biological Oceanography; B.S. 1932, Washington State; Ph.D. 1930, Harvard
Sakai, Robert K., Professor of History and Asian Studies; B.A. 1941, California (Berkeley); M.A. 1949, Ph.D. 1953, Harvard
Sakihara, Masako, Instructor in Japanese; B.A. 1958, Jissen Women's C. (Tokyo)
Saksena, S.K., Professor of Phycology; M.A. 1925, M.A. 1927, Allahabad; Ph.D. 1939, London
Sakumoto, Raymond E., Associate Professor of Sociology; B.A. 1955, M.A. 1957, Hawaii; Ph.D. 1965, Northwestern
Sakurai, Emiko, Acting Assistant Professor of Japanese; B.A. 1955, M.A. 1957, Alabama
Sanborn, Donald A., Associate Professor of Education; B.A. 1957, Pomona; M.S. 1959, Indiana; Ph.D. 1967, Claremont Grad. Sch.
Sanders, Daniel S., Associate Professor of Social Work; B.A. 1953, Ceylon; M.S.W. 1967, Ph.D. 1971, Minnesota
Sanderson, Sarah E., Assistant Professor of Communication; A.B. 1953, Fairmont State C.; 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, UCLA
Sang, Jürgen G., Associate Professor of German; Dr. phil. 1966, München
Sankey, June H., Assistant Professor of Fashion Design & Merchandising; B.S. 1960, M.S. 1963, Illinois
Sansone, David, Assistant Professor of Classics; A.B. 1968, Hamilton C.; M.A. 1969, Ph.D. 1972, Wisconsin
Sapp, David G., Lecturer in Music; B.M. 1968, M.M. 1969, Manhattan School of Music
Sasa, Yasuki, Assistant Professor of Drama and Theatre
Sasaki, Raymond N., Maj., Assistant Director of Military Science; B.S. 1963, Hawaii
Sato, Esther M.T., Associate Professor of Education; B.A. 1938, William Jewell C.; M.A. 1939, Columbia; M.A. 1966, Hawaii
Sato, Jesse J., Assistant Professor of Education; B.S. 1944, Hawaii; M.A. 1950, Columbia
Sato, Mamoru, Assistant Professor of Art; B.A. 1963, M.F.A. 1965, Colorado
Savard, William G., Professor of Education; B.A. 1951, Massachusetts; M.A. 1954, Springfield; Ed.D. 1960, Stanford
Saville, Allison W., Associate Professor of History; B.A. 1953, Ph.D. 1963, Washington; M.A. 1954, Columbia
Saville, Luther B., Instructor in Insurance; B.S. 1939, Michigan State
Schaefer, Larry L., Associate Professor of Chemistry; B.A. 1957, Grinnell; Ph.D. 1961, Minnesota
Scherer, William F., Associate Professor of German; B.A. 1961, Colorado; M.A. 1962, Ph.D. 1967, Southern California
Schauer, Paul L., Professor of Chemistry; B.S. 1943, Northeastern; M.A. 1947, Ph.D. 1950, Harvard
Schnell, Jerome V., Assistant Professor of Tropical Medicine & Medical Microbiology; B.S. 1956, St. Thomas C.; M.S. 1957, Ph.D. 1963, Nebraska
Schubert, Glendon, Professor of Political Science; A.B. 1940, Ph.D. 1948, Syracuse
Schumann, Frank K., Assistant Professor of Marketing; B.S. 1963, Illinois; M.B.A. 1969, San Jose State; D.B.A. 1972, Colorado
Schutz, Albert J., Associate Professor of Linguistics; B.S. 1958, Purdue; Ph.D. 1962, Cornell
Schwartz, Arnold D., Professor of Public Health; A.B. 1947, California (Berkeley); M.D. 1950, California (San Francisco); M.P.H. 1956, Harvard
Schweizer, Nikolaus R., Assistant Professor of German; M.A. 1966, Ph.D. 1968, California (Davis)
Schwind, Paul J., Assistant Professor of Geography and Planning Studies; B.A. 1964, Arizona; M.A. 1966, Ph.D. 1970, Chicago
Schwitters, Sylvia, Assistant Professor of 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., Associate Professor of English; B.A. 1950, Willamette; M.A. 1953, Hawaii
Seif, Karl, Assistant Professor of Chemistry; B.S. 1959, California (Berkeley); Ph.D. 1964, MIT
Seichi, George M., Assistant Professor of Health and Physical Education; B.Ed. 1961, Hawaii; M.S. 1964, Indiana
Seidl, Ludwig, Associate Professor of Ocean Engineering; D.Sc. 1970, Vienna U. of Technology
Seidman, Joel L., Visiting Professor of Industrial Relations; A.B. 1926, Johns Hopkins; A.B. 1928, Maryland; Ph.D. 1932, Johns Hopkins
Seifert, Friedrich, Professor of Religion; Th.D. 1959, Pacific School of Religion
Seldin, Joseph, Assistant Professor of Sociology; B.A. 1961, Hunter C.; M.A. 1963, Oregon; Ph.D. 1968, Pittsburgh
Senegal, Peter, Instructor in American Studies; B.A. 1967, George Washington; M.A. 1970, Purdue
Seo, Kap-Kyung, Professor of Business Economics and Quantitative Methods; B.A. 1956, South Carolina; M.B.A. 1957, Xavier; Ph.D. 1960, Cincinnati
Seto, Millard S.L., Assistant Professor of OB/Gyn; B.A. 1951, Michigan; M.S. 1952, Columbia; M.D. 1957, Hahnemann
Severson, Sarah, Instructor of Nursing; B.S. 1963, Oregon; M.P.H. 1969, Hawaii
Seymour, Richard K., Professor of German; B.A. 1951, M.A. 1952, Michigan; Ph.D. 1956, Pennsylvania
Shapiro, Harold J., Associate Professor of English; A.B. 1952, Cornell; A.M. 1955, Ph.D. 1962, Yale
Shapiro, Jerrold, Assistant Professor of Education; A.B. 1964, Colby C.; M.A. 1966, Northwestern; Ph.D. 1970, Waterloo
Shapiro, Michael J., Associate Professor of Political Science; B.A. 1962, Tufts; M.A. 1964, Hawaii; Ph.D. 1966, Northwestern
Shapiro, Norman, Assistant Professor of Art; A.A. 1963, Pasadena City C.; B.F.A. 1965, M.F.A. 1967, Ohio State
Shapiro, Samuel I., Associate Professor of Psychology; B.A. 1961, Brooklyn C.; A.M. 1962, Michigan; M.S. 1965, Ph.D. 1966, Pennsylvania State
Sharma, Jagdish P., Associate Professor of History; B.A. 1955, Agra; B.A. 1959, School of Oriental & African Studies (London); Ph.D. 1962, London
Shen, Yao, Professor of English; B.A. 1935, Yenching; M.A. 1938, Mills; Ed.D. 1944, Michigan
Sherman, Martin, Professor of Entomology; B.S. 1941, M.S. 1943, Rutgers; Ph.D. 1948, Cornell
Sherrill, David M., Associate Professor of Education; B.A. 1965, Ph.D. 1968, Texas (Austin)
Shimamoto, Yoshiko, Assistant Professor of Education; B.A. 1967, George Washington; M.A. 1968, Indiana
Shimamoto, Yoshiko, Assistant Professor of Education; B.A. 1967, George Washington; M.A. 1968, Indiana
Shiner, Dorothy B., Assistant Professor of English; A.B. 1932, Skidmore C.; A.M. 1945, Middlebury C.
Smith, Clifford W., Associate Professor of Botany; B.Sc. (Hons.) 1962, C. of North Wales; M.Sc. 1963, Ph.D. 1965, Manchester

Smith, Harry A., Lecturer in Law B.S. 1929, J.D. 1932, New York; M.A. 1962, Michigan State

Smith, James R., Jr., Assistant Professor of Education; B.A. 1957, M.A. 1959, Wyoming

Smith, Max B., Lecturer in Animal Science; D.V.M. 1946, Colorado State

Smith, Ray M., Associate Professor of Agricultural Engineering; B.S. 1958, Oklahoma; M.S. 1959, Illinois; Ph.D. 1956, Iowa State

Smith, Richard, Assistant Professor of Physiology; A.B. 1964, Ph.D. 1969, Indiana

Smith, Roy C., Professor of Public Health; B.S. 1952, California (Berkeley); M.D. 1961, New York Medical C.; M.P.H. 1965, California (Berkeley)

Sohn, Ho-min, Assistant Professor of Korean; B.A. 1956, M.A. 1965, Seoul National; Ph.D. 1969, Hawaii

Soalarana, Kathleen, Lecturer in Real Estate; B.S. 1946, Oregon; M.B.A. 1971, Hawaii

Solheim, Wilhelm G. II, Professor of Anthropology; B.A. 1947, Wyoming; M.A. 1949, California; Ph.D. 1959, Arizona

Solomon, Margaret C., Associate Professor of English; B.A. 1960, Hawaii; M.A. 1961, California (Berkeley); Ph.D. 1967, Claremont

Sommerstrom, Allan R., Assistant Professor of Geography; B.A. 1963, Chico State; M.A. 1966, Ph.D. 1970, Washington

Song, Zino, Assistant Professor of Japanese and Korean; B.S. 1950, Masan; M.A. 1968, Hawaii

Sonoda, Phyllis, Assistant Professor of Medical Technology; B.S. 1952, Hawaii; M.S. 1954, Northwestern

Speidel, Michael P., Associate Professor of History; Ph.D. 1962, Freiburg (West Germany)

Spencer, Charles H., Professor of Accounting; B.S. 1936, Indiana State; M.S. 1941, D.B.A. 1953, Indiana

Spielmann, Heinz, Professor of Agricultural Economics; B.A. 1949, M.A. 1954, Washington; Ph.D. 1962, Washington State

Spielvogel, Ellen, Assistant Professor of Mathematics; B.S. 1961, M.S. 1964, Ph.D. 1969, New York

Sprague, Ralph H., Associate Professor of Business Economics and Quantitative Methods; B.S. Anderson C.; M.B.A. 1962, D.B.A. 1964, Indiana

Staats, Arthur W., Professor of Psychology and Educational Psychology B.A. 1949, M.A. 1953, Ph.D. 1956, UCLA

Stalker, John N., Professor of History; B.A. 1943, Wooster; M.A. 1948, Ph.D. 1950, Wisconsin

Standal, Bluebell R., Associate Professor of Food and Nutritional Sciences; B.S. 1942, Calcutta; M.S. 1948, Ph.D. 1952, California

Stanley, Richard W., 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

Starbuck, George, Assistant Professor of Pediatrics; B.S. 1935, M.D. 1938, Vermont

Starosta, Stanley, Associate Professor of Linguistics; B.A. 1961, Ph.D. 1967, Wisconsin

Stasack, Edward A., Professor of Art; B.A. 1955, M.F.A. 1956, Illinois

Staub, William J., Associate Professor of Agricultural Economics B.S.A. 1964, M.S. 1966, Georgia; Ph.D. 1971, Missouri

Stauffer, Robert B., Professor of Political Science; B.S. 1942, Pa. State Teachers C. (West Chester); M.A. 1947, Oklahoma; Ph.D. 1954, Minnesota

Steiger, Walter R., Professor of Physics and Astronomy; B.S. 1948, MIT; M.S. 1950, Hawaii; Ph.D. 1953, Cincinnati

Stein, Burton, Professor of History B.A. 1948, Illinois; M.A. 1953, Ph.D. 1958, Chicago

Stein, Dorothy K., Assistant Professor of Public Health; B.A. 1951, Cornell; M.A. 1966, Ph.D. 1968, Minnesota

Steinberg, Danny D., Associate Professor of English as Second Language; B.A. 1960, British Columbia; M.A. 1966, Ph.D. 1966, Hawaii

Steinberg, Miho, Assistant Professor of English as Second Language B.A. 1957, Kyoto Women's U.; M.A. 1961, Michigan

Steinhoff, Patricia, Associate Professor of Sociology; B.A. 1963, Michigan; Ph.D. 1969, Harvard

Steinruck, Mark, Lecturer in Music B.M. 1970, Curtis Institute

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, C. of City of N.Y.; M.A. 1942, Ph.D. 1949, Harvard

Stenger, Victor J., Associate Professor of Physics and Astronomy B.S. 1956, Newark; M.S. 1959, Ph.D. 1963, UCLA

Sociology:

Stevens, E. Donald, Associate Professor of Sociology; B.Sc. 1963, M.Sc. 1965, Ph.D. 1968, U. of British Columbia (Victoria)

Stevens, Robert D., Professor of Library Studies; A.B. 1942, Syracuse; B.S. 1947, Columbia; M.A. 1954, Ph.D. 1965, American University

Steward, Donald L., Assistant Professor of Philosophy; B.A. 1951, Temple; M.A. 1962, California (Berkeley); Ph.D. 1969, Hawaii

Stillians, Bruce M., Associate Professor of English; B.A. 1952, M.A. 1955, Ph.D. 1962, Iowa

Stimson, John S., Assistant Professor of Zoology; B.A. 1963, Occidental College; M.A. 1965, Ph.D. 1968, California (Santa Barbara)

Stitt, Pauline G., Professor of Public Health; B.S. 1933, M.D. 1933, Michigan; M.P.H. 1954, California (Berkeley)

Stoutemyer, David R., Assistant Professor of General Engineering; B.S. 1963, California Institute of Technology; S.M. 1965, MIT; Ph.D. 1972, Stanford

Strauss, Richard H., Associate Professor of Physiology; B.A. 1960, Michigan State; M.D. 1964, Chicago

Street, John M., Professor of Geography; B.A. 1948, Ph.D. 1960, California (Berkeley)

Stringfellow, Lorraine C., Assistant Professor of Public Health; B.S. 1958, Washington; M.P.H. 1967, Hawaii

Stroup, Edward D., Associate Professor of Oceanography; B.A. 1956, Hawaii; M.A. 1958, Ph.D. 1969, Johns Hopkins

Stueber, Ralph K., Professor of Education; B.S. 1950, M.S. 1955, Ph.D. 1964, Wisconsin

Stuiver, Willem, Professor of Mechanical Engineering; Ir. 1951, Delft; Ph.D. 1960, Stanford

Suehiro, Ineko, Instructor in Japanese; B.A. 1941, Tokyo Joshi Daigaku


Suh, Se Mo, Associate Professor of Pediatrics; M.D. 1954, Severance (Korea); D.M.S. 1965, Yon-Sei (Korea); Ph.D. 1972, Toronto

Suits, Daniel B., Visiting Professor of Economics; A.B. 1940, M.A. 1941, Ph.D. 1949, Michigan

Sumida, Stephen H., Instructor in English; B.A. 1968, Amherst C.; M.A. 1970, Columbia

Sumida, Sylvia, Assistant Professor of Nursing; B.S. 1938, M.Ed. 1968, Columbia

Summersgill, Travis L., Professor of English; B.A. 1939, Bucknell; M.A. 1940, Ph.D. 1948, Harvard

Sunshine, Morris, Associate Professor of Sociology; B.A. 1949, M.A. 1954, Missouri; Ph.D. 1962, Northwestern

Susilo, Hardja, Assistant Professor of Music; B.A. 1961, M.A. 1967, UCLA

Sutton, George H., Professor of Geophysics; B.S. 1950, Muhlenberg; M.A. 1953, Ph.D. 1957, Columbia

Suzuki, Carolyn R., Instructor in Education; B.Ed. 1967, M.Ed. 1968, Hawaii

Suzuki, Yukihisa, Professor of Library Studies; B.A. 1954, M.A. 1955, M.A.L.S. 1956, Michigan

Swift, David W., Associate 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 U. C.; Ph.D. 1955, Wisconsin

Sydow, Frauke, Lecturer in New College; Ph.D. 1944, Hamburg (Germany)

Szilard, Rudolph S., Professor of Civil Engineering; Grad. C.E. 1942, Dipl.-Ing. (M.S.) 1943, Royal Tech. U., Budapest; Dr.-Ing. 1962, Technical U. of Stuttgart

T

Tabb, David, Assistant Professor of Political Science; B.A. 1962, Antioch; M.A. 1963, Massachusetts; Ph.D. 1969, N. Carolina

Tabrah, Frank L., Professor of Community Health; M.D. 1943, Buffalo

Tahara, Mildred M., Assistant Professor of Japanese Literature; B.A. 1963, M.A. 1965, Hawaii; Ph.D. 1969, Columbia

Tait, Malcolm J., Associate Professor of Music; B.A. 1955, Victoria U. of Wellington; M.A. 1956, Canterbury; E.D. 1963, Columbia

Tait, Robert J., Assistant Professor of Oceanography; B.S. 1962, M.S. 1966, California Institute of Technology; Ph.D. 1970, California (San Diego)

Takahashi, Patrick K., Assistant Professor of General Engineering; B.S. 1962, Stanford; M.S. 1969, Ph.D. 1971, Louisiana State

Takahashi, Tsutomu, Associate Professor of Meteorology; B.S. 1957, M.S. 1959, Ph.D. 1962, Hokkaido (Japan)

Takahashi, Yoshi, Instructor in Asian and Pacific Languages; B.A. 1938, Tokyo Musical Academy; M.A. 1952, San Francisco Theological Seminary

Takaki, Cecilia, Instructor in Japanese; B.A. 1964, Sacred Heart (Japan); M.A. 1970, Hawaii

Takasaki, Richard S., Professor of Social Work; B.S. 1940, Harvard; M.A. 1949, Columbia; M.P.A. 1960, Harvard

Takayama, Akira, Professor of Economics; B.A. 1957, International Christian (Japan); M.A. 1960, Ph.D. 1962, Rochester; Ph.D. 1964, Hitotsubashi (Japan)


Takeshita, Sachiko, Instructor in Japanese; B.A. 1960, M.A. 1969, Hawaii

Tamashiro, Minoru, Associate Professor of Entomology; B.S. 1951, M.S. 1954 Hawaii; Ph.D. 1960, California

Tanabe, Gilfred, Assistant Professor of Psychology; B.A. 1960, Hamline; M.S. 1966, Ph.D. 1968, Purdue

Tanaka, Jack S., Assistant Professor of Horticulture; B.S. 1951, M.S. 1960, Hawaii

Tang, Chung-Shih, Assistant Professor of Agricultural Biochemistry; B.S. 1960, M.S. 1962, Taiwan; Ph.D. 1967, California

Tanoue, Roy T., Associate Professor of Surgery; B.A. 1936, Hawaii; M.D. 1940, Rush

Tao, Tien-Yi, Assistant Professor of History; B.A. 1953, M.A. 1956, National Taiwan; Ph.D. 1972, Chicago

Taoka, George T., Associate Professor of Civil Engineering; B.S. 1958, Oregon State; M.S. 1960, Ph.D. 1964, Illinois

Tashima, Charles K., Associate Professor of Medicine; B.A. 1952, Johns Hopkins; M.D. 1956, Harvard

Tatsuta, Toshio, Instructor in Japanese; B.A. 1953, M.A. 1960, Tokyo

Taussig, Russell A., Professor of Finance; B.S. 1941, M.B.A. 1947, Ph.D. 1965, California (Berkeley); C.P.A. 1950

Taylor, Harvey, Assistant Professor of Japanese; B.A. 1957, Seattle Pacifice C.; M.A., M.A. 1969, Ph.D. 1971, Hawaii


Taylor, Patricia L., Assistant Professor of Medical Technology; B.S. 1958, Indiana; M.S. 1969, Hawaii

Taylor, Ronald C., Assistant Professor of Meteorology; B.S. 1959, UCLA; Ph.D. 1968, Hawaii

Teevan, T. Foster, Assistant Professor of English; B.A. 1936, Puget Sound; M.A. 1949, Ph.D. 1957, Washington

Teichman, Robert J., Assistant Professor of Anatomy and Reproductive Biology; B.S. 1956, Ph.D. 1969, Wayne State

Terada, Francis M., Assistant Professor of Obstetrics; B.S. 1951, M.D. 1956, Cincinnati
Terazaki, T. David, Professor of Architecture; B.A. 1944, M.E. 1947, Tokyo

Testor, Albert L., Senior Professor of Zoology; B.A. 1931, M.A. 1932, Ph.D. 1936, Toronto

Tharp, Roland G., Professor of Psychology; B.A. 1937, Houston; M.A. 1958, Ph.D. 1961, Michigan

Theobald, William L., Associate Professor of Botany; B.S. 1958, M.S. 1959, Rutgers; Ph.D. 1963, UCLA

Thomas, George W., Assistant Professor of Business Economics and Quantitative Methods; B.S. 1967, Southern Illinois; M.S. 1969, Ph.D. 1971, Purdue

Thompson, Dennis H., Associate Professor of Health and Physical Education; B.S. 1955, M.S. 1959, George Williams C.; Ed.D. 1967, Colorado State C.

Thompson, John A., Associate Professor of Education; B.S. 1946, La Crosse State; M.S. 1965, Ph.D. 1968, Wisconsin

Thompson, Laurence C., Professor of Linguistics; B.A. 1949, Middlebury; M.A. 1950, Ph.D. 1954, Yale

Thompson, Phyllis H., Associate Professor of English; B.A. 1948, Connecticut C.; M.A. 1949, Duke; Ph.D. 1958, Wisconsin

Thrall, Whitney, Lecturer in Music M.M. 1952, Syracuse

Tinker, Spencer W., Associate Professor in Education; B.S. 1931, Washington; M.S. 1934, Hawaii

Tinninwood, 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

Tomina, Henry K., Associate Professor of Health and Physical Education; B.S. 1953, Springfield; M.S. 1954, Pennsylvania State; Ed.D. 1964, Colorado State C.

Topham, Helen A., Associate Professor of English; B.A. 1935, Rutgers; M.A. 1950, M.F.A. 1956, Hawaii

Topping, Donald M., Associate Professor of Linguistics; A.B. 1954, M.A. 1956, Kentucky; Ph.D. 1963, Michigan State

Torikawa, Carol S., Instructor in Medical Technology; B.S. 1969, Hawaii

Toth, Endre, Assistant Professor of Architecture; B.S. 1948, M.S. 1951, Royal Technical U., Hungary

Townshend, Sidney J., Professor of Marine Zoology; B.A. 1948, California; M.S. 1950, Hawaii; Ph.D. 1954, Yale

Tracy, Robert A., Associate Professor of Health & Physical Education & Physiology; B.S. 1954, M.Ed. 1956, Northern State C. (S. Dakota); Ph.D. 1971, Minnesota

Trapidio, Joel, Professor of Drama and Theatre; B.A. 1935, Cornell; M.A. 1936, New York; Ph.D. 1942, Cornell

Trimiños, Ricardo, Assistant Professor of Music; A.B. 1962, San Jose; M.A. 1965, Hawaii; Ph.D. 1972, UCLA

Trubitt, Allen R., Associate Professor of Music; B.M.Ed. 1953, M.M.Ed. 1954, Roosevelt; D.Music 1964, Indiana

Trubitt, Anita, Instructor in Education; B.M. 1955, M.M. 1957, Roosevelt; C.P.C. 1969, Hawaii

Trujillo, Eduardo E., Associate Professor of Plant Pathology; B.S.A. 1936, M.S. 1957, Arkansas; Ph.D. 1962, California

Tseng, Wen-Shing, Associate Professor of Psychiatry; M.D. 1961, National Taiwan U.

Tszuki, Stanley M., Associate Professor of Linguistics; B.A. 1952, Hawaii; M.A. 1954, Colorado State; M.S. 1961, Ph.D. 1963, Michigan State

Tuan, San Fu, Professor of Physics and Astronomy; B.A. 1954, M.A. 1958, Oxford (England); Ph.D. 1958, California (Berkeley)

Tuggle, H. David, Assistant Professor of Anthropology; B.A. 1962, Transylvania C.; M.A. 1966, Ph.D. 1970, Arizona

Turnbull, Murray, Professor of Art B.F.A. 1941, Nebraska; M.A. 1949, Denver

U

Uchima, Floyd Y., Assistant Professor of Music; B.Ed. 1950, Hawaii; M.Mus.Ed. 1951, Northwestern

Uehara, Betty K., Associate Professor of Education; B.Ed. 1947, Hawaii; M.A. 1958, New York

Uehara, Goro, Professor of Soil Science; B.S. 1951, M.S. 1955, Hawaii; Ph.D. 1959, Michigan State

Uhalley, Stephen Jr., Professor of History; A.A. 1954, San Bernardino Valley C.; A.B. 1956, California (Riverside); M.A. 1957, Claremont; Ph.D. 1967, UC (Berkeley)

Ullmann, Leonard P., Professor of Psychology; A.B. 1951, A.M. 1953, Lafayette C.; Ph.D. 1955, Stanford

Umbell, Oma, Professor of Fashion Design and Merchandising; B.S. 1921, West Virginia; M.S. 1933, New York

Upadhyaya, Kash Nath, Professor of Philosophy; B.A. 1951, Patna U.; M.A. 1953, Ph.D. 1964, U. of Ceylon

Urata, Uchio, Assistant Professor of Agronomy; B.S. 1951, M.S. 1953, Hawaii; Ph.D. 1959, Cornell

Uyehara, Janet K., Instructor in Nursing; B.S. 1968, Hawaii; M.S. 1969, California (San Francisco)

Uyehara, Yoshiko T., Instructor in Education; B.Ed. 1945, M.Ed. 1970, Hawaii

V

Valentin, Pat, Lecturer in Music

Van Niel, Robert, Professor of History; B.A. 1947, M.A. 1948, Ohio State; Ph.D. 1954, Cornell

Van Reen, Robert, Professor of Food and Nutritional Sciences A.B. 1943, New Jersey State; Ph.D. 1949, Rutgers

van Weel, Pieter B., Professor of Zoology; Ph.D. 1937, State U. of Utrecht

Van Zile, Judy A., Instructor in Music; M.A. 1966, Colorado; M.A. 1971, UCLA

Vann, Douglas C., Assistant Professor of Genetics; A.B. 1960, California (Berkeley); Ph.D. 1966, California (Santa Barbara)

Vann, Sarah K., Professor of Library Studies; A.B. 1936, Georgia; A.B.L.S. 1939, N. Carolina; A.M.L.S. 1944, Michigan; Ph.D. 1958, Chicago

Varney, Sheldon S., Associate Professor of Education; A.B. 1950, M.Ed. 1964, New Hampshire; Ed.D. 1967, Colorado State C.

Vasconcellos, Henry B., Associate Professor of Health and Physical Education; B.A. 1941, M.A. 1959, San Jose State

Vaught, Raymond, Professor of Music B.A. 1938, M.A. 1940, Idaho; M.M. 1946, Eastman School of Music; Ph.D. 1959, Stanford

Veeh, H. Herbert, Assistant Professor of Geology; Vol. Dip. 1956, Erlangen; M.S. 1959, Colorado; Ph.D. 1965, California (San Diego)

Vella, Dorothy B., Instructor in English; B.A. 1941, Western Reserve; M.A. 1942, Radcliffe

Vella, Walter F., Professor of History; B.A. 1947, M.A. 1950, Ph.D. 1954, California

Venezian, Giulio, Associate Professor of Ocean Engineering; B.Eng. 1960, McGill; Ph.D. 1965, California Institute of Technology

Verdeyen, Helen C., Assistant Professor of Social Work; B.A. 1948, Indiana; M.S.S.W. 1951, Fordham

Vieht, Gary R., Assistant Professor of Agricultural Economics; B.S. 1967, M.S. 1969, Nebraska

Viglioimo, Valdo H., Professor of Japanese Literature; B.A. 1948, M.A. 1952, Ph.D. 1956, Harvard

Virta, Roger T., Instructor in Communication; B.A. 1971, Minnesota; M.A. 1972, Hawaii

Vlahos, Peter G., Assistant Professor of Business Economics & Quantitative Methods; A.B. 1966, M.A. 1967, Ph.D. 1969, Cincinnati
Wada, Betty Jane S., Instructor in Education; B.Ed. 1955, M.Ed. 1956, National C. of Education

Wade, Rex A., Professor of History; B.A. 1958, Southern Illinois: M.A. 1960, Ph.D. 1963, Nebraska

Waite, Deborah, Assistant Professor of Art; A.B. 1961, Mount Holyoke; M.A. 1964, Ph.D. 1969, Columbia

Walker, Barbara, Assistant Professor of Fashion Design, Textiles and Merchandising; B.S. 1961, State U. C., Onionta, N.Y.; M.S. 1967, Pennsylvania State

Wallen, Lawrence J., Professor of Mathematics; B.A. 1954, Lehigh; Ph.D. 1967, MIT

Wallraubenstein, Paul P., Lecturer in Agricultural Economics; Ph.D. 1941, Ohio State

Walsh, Winifred A., Professor of Social Work; B.S. 1936, Nevada: M.A. 1943, Ph.D. 1945, Chicago

Wang, Jaw-Kai, Professor of Agricultural Engineering; B.S. 1953, National Taiwan; M.S. 1956, Ph.D. 1958, Michigan State

Ward, David A., Associate Professor of English and Journalism; B.A. 1946, Yale; M.A. 1963, Michigan

Ward, Herbert, Lecturer in Music; Diploma 1947, Royal Danish Conservatory; Diploma 1950, Vienna Music Academy

Ward, Jack H., Acting Assistant Professor of Hawaiian; B.A. 1951, Kansas; M.A. 1963, Hawaii

Wargo, Robert J.J., Assistant Professor of Philosophy; B.A. 1962, UCLA; M.A. 1963, Ph.D. 1972, Michigan

Warner, Emily A., Instructor in Communication; B.A. 1970, Oklahoma State; M.A. 1972, Hawaii

Warshauer, Frederick R., Instructor in General Science; B.S. 1968, Colorado State; M.S. 1970, Hawaii

Watanabe, Michael S., Professor of Physics & Astronomy and Information & Computer Sciences; B.S. 1933, Dr.Sc. 1940, Tokyo; Dr.Sc. 1935, Paris

Watkins, Sara V., Lecturer in Music; B.M. 1967, Oberlin

Watson, David L., 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, James L., Assistant Professor of Anthropology; A.B. 1945, Iowa; M.A. 1946, Ph.D. 1972, California (Berkeley)


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

Weedle, Laurel E., Associate Professor of Food & Nutritional Sciences; B.S. 1939, Texas Tech. C.; M.S. 1954, Texas


Weeks, Shirley, Specialist in Human Development and Human Relations; B.S. 1939, Massachusetts State; M.S. 1944, Cornell; Ph.D. 1964, Wisconsin

Weiner, Betsy P., Lecturer in New College; B.A. 1940, Swarthmore; M.S. 1944, M.D. 1944, Chicago

Weinstein, Michael G., Assistant Professor of Sociology; Ph.B. 1963, Wayne State; M.A. 1966, Ph.D. 1968, Harvard

Welden, Terry A., Associate Professor of Communication; B.A. 1954, West Virginia; M.A. 1957, Pittsburgh; Ph.D. 1951, Michigan State

Weldon, Edward J., Jr., Associate Professor of Electrical Engineering; B.S.E.E. 1958, Manhattan C.; M.S.E.E. 1960, Ph.D. 1963, Florida

Weller, Donald J., Assistant Professor of Communication; B.A. Temple; M.A. 1968, Ph.D. 1971, Hawaii

Wells, Benjamin B., Jr., Associate Professor of Mathematics; B.S. 1961, M.S. 1962, Michigan; Ph.D. 1967, California (Berkeley)

Wenkam, Nao., Assistant Professor of Food & Nutritional Sciences; B.S. 1948, M.S. 1950, Chicago

Wenska, Thomas M., Assistant Professor of Mathematics; B.A. 1966, Hawaii; M.A. 1969, Ph.D. 1970, Southern California

Werner, Ralph J., Instructor in English; B.A. 1966, Pennsylvania State; M.A. 1969, San Francisco State

West, Stanley, Lecturer in Library Studies; A.B. 1933, California (Berkeley); L.L.B. 1938, Florida; B.S.L.S. 1942, Columbia; J.D. 1968, Florida

West, Lydon L., Assistant Professor of Geography; B.A. 1967, Adelaine; M.A. 1969, UCLA

Westcott, Nina A., Associate Professor of Education; B.A. 1958, St. Mary's C.; M.A. 1962, De Paul; Ph.D. 1967, Arizona


Weston, Susan, Instructor in English; B.A. 1967, M.A. 1968, Columbia

Wheelwright, Jessie, Lecturer in Library Studies; B.A. 1934, California (Berkeley); M.S.L.S. 1950, Simmons

White, John A., Professor of History; B.A. 1933, California; M.A. 1940, Columbia; Ph.D. 1947, Stanford

White, Russell E., Lecturer in Music; B.A. 1960, Portland State

Whitehill, Arthur M., Professor of International Management; B.S. 1942, M.A. 1944, Ph.D. 1945, Virginia

Whitesell, Philip A., Acting Assistant Professor of Education; A.B. 1957, Harvard; M.A.T. 1964, Indiana

Whitlock, Roger D., Assistant Professor of English; B.A. 1963, Whitman C.; M.A. 1964, Chicago; Ph.D. 1970, Washington


Whittaker, David N.E., Associate Professor of Education; B.A. 1954, B.Ed. 1960, British Columbia; M.A. 1961, Ph.D. 1967, California (Berkeley)

Whittington, Ronaele, Assistant Professor of Social Work; Ed. B. 1963, M.A. 1965, Chicago

Whitton, G. Causey, Professor of Physiology; B.Sc. 1952, M.I. Biol. 1953, London; Ph.D. 1957, Malaya

Wiedeboldt, Ned B., Lecturer in Public Health; B.A. 1950, B.Arch. 1952, Minnesota; M.Arch. 1954, Harvard

Wiens, Gerold J., Professor of Geography and Asian Studies; B.A. 1935, California; M.A. 1947, Ph.D. 1949, Michigan

Wieting, Mark W., Instructor in English; B.A. 1967, M.A. 1969, Illinois

Wiley, Bonnie, Associate Professor of English and Journalism; B.A. 1948, Washington; M.S. 1957, Columbia; Ph.D. 1965, Southern Illinois

Wilkins, Frederick J., Acting Assistant Professor of Spanish; B.A. 1959, Redlands; M.A. 1965, UCLA

Will, Richard Y., Assistant Professor of Education; B.A. 1952, Minnesota; B.Ed. 1957, M.Ed. 1960, Hawaii
Williams, Jean, Lecturer in Art
Williams, John A., Professor of Civil Engineering; B.S. 1952, M.S. 1954, Ph.D. 1965, California
Williams, Raburn, Associate Professor of Business Economics and Quantitative Methods; B.A. 1965, Stanford; M.A. 1967, Ph.D. 1970, Chicago
Williamson, Jack, Associate Professor of Mathematics; B.S. 1962, M.S. 1963, Carnegie Institute of Technology; Ph.D. 1967, Wisconsin
Williamson, Marina, Instructor in English; B.A. 1957, Manchester; M.A. 1962, Ohio State
Wilson, C. Pears, Professor of Agricultural Economics; B.S. 1938, M.S. 1940, Kansas State; Ph.D. 1958, California
Wilson, Karen M., Instructor in General Science; B.Ed. 1967, M.Ed. 1969, Hawaii
Wilson, Mark K., Assistant Professor of English; B.A. 1960, N. Carolina; M.A. 1964, Michigan; Ph.D. 1971, N. Carolina
Wilson, Ralph D., Visiting Professor of Travel Industry Management; B.S. 1947, Eastern Illinois; M.B.A. 1949, Indiana; Ph.D. 1953, Iowa
Winchester, Betty Jo, Assistant Professor of History; B.A. 1961, Baylor; M.A. 1964, Ph.D. 1970, Indiana
Wingert, Everett A., Assistant Professor of Geography; B.A. 1964, Michigan; M.A. 1967, Washington
Winters, Lee E., Jr., Professor of English; B.A. 1947, Michigan; M.A. 1952, Ph.D. 1956, California (Berkeley)
Winters, Lily C., Professor of Chinese Literature; B.A. 1937, Venching; M.A. 1950, Hawaii
Wisnosky, John, Assistant Professor of Art; M.F.A. 1964, Illinois
Wittermans, Elizabeth P., Associate Professor of Human Development B.S. 1951, Indonesia; M.A. 1954, London; Ph.D. 1964, Leyden
Wittich, Walter A., Professor of Education; B.S. 1932, M.A. 1934, Ph.D. 1943, Wisconsin
Wolf, Jack K., Visiting Professor of Electrical Engineering; B.S. 1956, Pennsylvania; M.S.E. 1957, M.A. 1958, Ph.D. 1960, Princeton
Wolfe, Suzanne, Assistant Professor of Art; B.A. 1965, B.S.D. 1968, M.F.A. 1970, Michigan
Wolff, Richard J., Assistant Professor of Physics; B.A. 1962, Carleton; Ph.D. 1967, California (Berkeley)
Wolff, Robert J., Professor of Public Health; Ph.D. 1953, Michigan
Wolstencroft, Ramon D., Associate Professor of Physics and Astronomy B.S. 1959, U. C., London; Ph.D. 1962, St. John's C., Cambridge
Wolz, Carl, Assistant Professor of Drama and Theater and Music; B.A. 1959, Chicago; M.A. 1965, Hawaii
Wong, George Y., Professor of Sociology; B.A. 1955, M.A. 1957, Hawaii; Ph.D. 1962, Michigan State
Wong, Eugene C.G., Instructor in Medicine; M.D. 1965, Washington (St. Louis)
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., Associate Professor of Mathematics; B.Ed. 1948, Hawaii; M.S. 1960, Illinois; Ph.D. 1964, Michigan
Woodruff, Charlotte V.C., Assistant Professor of Social Work; B.A. 1931, Smith C.; M.S. 1944, Columbia
Woolard, George P., Professor of Geophysics; B.S. 1932, M.S. 1934, Georgia Institute of Technology; A.M. 1935, Ph.D. 1937, Princeton
Worth, Robert M., Professor of Public Health; B.A. 1930, California; M.D. 1954, California (San Francisco); M.P.H. 1958, Harvard; Ph.D. 1962, California (Berkeley)
Worthley, Reginald G., Assistant Professor of Business Economics & Quantitative Methods; B.A. 1965, M.S. 1967, Maine; Ph.D. 1969, Kansas State
Wright, Lloyd A., Assistant Professor of English; B.A. 1964, Knox C.; M.A. 1965, Ph.D. 1969, Harvard
Wu, I-Pai, Associate Professor of Agricultural Engineering; B.S.A.E. 1955, National Taiwan; M.S.A.E. 1960, Ph.D. 1963, Purdue
Wulff, Louise M., Assistant Professor of Medical Technology; B.S. 1932, Wisconsin; M.S. 1966, Hawaii
Wytrki, Klaus, Professor of Oceanography; Sc.D. 1930, Kiel (Germany)
Y
Yamada, Chie, Lecturer in Music Natori Diploma; Tokyo
Yamada, Shigeharu, Associate Professor of Education; B.A. 1955, B.Ed. 1956, M.F.A. 1966, Hawaii
Yamamoto, George K., Associate Professor of Sociology; B.A. 1947, M.A. 1949, Hawaii
Yamamoto, Harry, Professor of Food Science; B.S. 1955, Hawaii; M.S. 1958, Illinois; Ph.D. 1962, California (Davis)
Yamamoto, Norman Y., Instructor in Japanese; B.A. 1962, Taisho U.
Yamamura, Douglas S., Professor of Sociology; B.Ed. 1938, M.Ed. 1941, Hawaii; Ph.D. 1949, Washington
Yamasaki, Beatrice T., Associate Professor of Philosophy; B.A. 1950, Mount Holyoke; M.A. 1954, Hawaii; Ph.D. 1962, Bryn Mawr
Yamashita, Pearl N., Associate Professor of Education; B.Ed. 1942, Hawaii; M.A. 1948, Iowa
Yamauchi, Hiroshi, Assistant Professor of Agricultural Economics; B.S. 1964, Ph.D. 1968, UC (Berkeley)
Yamagami, Ryuzo, Associate Professor of Anatomy and Reproductive Biology; B.S. 1952, Ph.D. 1960, Hokkaido
Yanagisako, Alvin Y., Instructor in Sociology; B.A. 1960, M.A. 1964, Hawaii
Yang, Hong-yi, Associate Professor of Pathology; M.D. 1961, Nat. Taiwan U.; Ph.D. 1967, Chicago
Yasner, Elaine, Lecturer in Music B.M. 1965, Oberlin
Yasui, Byron, Assistant Professor of Music; D.M.A. 1972, Northwestern
Yasunobu, Kerry T., Professor of Biochemistry; B.S. 1950, Ph.D. 1954, Washington
Yee, Warren, Associate Professor of Horticulture; B.S. 1942, Hawaii; M.S. 1959, Purdue
Yeh, Rui Zong, Associate Professor of Mathematics; B.A. 1953, Minnesota; M.A. 1956, Ph.D. 1959, Princeton
Yeh, Stephen K., Professor of Sociology; A.B. 1934, San Francisco State C.; A.M. 1960, Ph.D. 1965, New York
Yeh, Yeong-Her, Associate Professor of Economics; B.A. 1955, Taiwan; M.A. 1959, Ph.D. 1965, Minnesota
Yen, Anthony M.H., Assistant Professor of Electrical Engineering B.S.E.E. 1960, Taipei Institute of Tech.; Ph.D. 1969, Johns Hopkins
Yoshikawa, Meino, Assistant Professor of Japanese; B.A. 1962, Linfield; M.A. 1967, Hawaii
Young, Franklin, Associate Professor of Food and Nutritional Sciences A.B. 1951, Mercer; B.S.A. 1952, M.Ag. 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
Emeriti Faculty

Alicata, Joseph E., Emeritus Professor of Parapsychology; B.A. 1927, Grand Island, Nebraska; M.A. 1928, Northwestern; Ph.D. 1934, George Washington

Allison, John M., Emeritus Professor of Government; B.A. 1927, LL.D. 1959, Nebraska

Ascher, Leonard W., Emeritus Professor of Accounting and Finance; B.A. 1927, Ph.D. 1934, California (Berkeley)

Bell, Janet E., Emeritus Associate Professor of Library Science; B.A. 1932, Hawaii; B.S. in L.S. 1933, Washington

Bentley, Lucie F., Emeritus Associate Professor of Speech, Drama and Theatre; B.A. 1928, Stanford; M.A. 1933, Cornell

Bess, Henry A., Emeritus Senior Professor of Entomology; B.S. 1927, Alabama Polytechnic; M.S. 1931, Florida; Ph.D. 1934, Ohio State

Bilger, Leona N., Emeritus Senior Professor of Chemistry; B.A. 1913, M.A. 1914, Ph.D. 1916, L.L.D. 1950, Cincinnati

Boatman, Elsie M., Emeritus Professor of Home Economics; B.S. 1924, M.S. 1931, Iowa State

Bowers, Neal M., Emeritus Professor of Geography; B.S. 1938, Western Michigan C.; M.S. 1939, Ph.D. 1951, Michigan

Brantley, L. Reed, Emeritus Professor of Education: A.B. 1927, UCLA; M.S. 1929, Ph.D. 1930, California Institute of Technology

Brown, Hubert E., Emeritus Professor of Health and Physical Education; B.P.E. 1920, M.P.E. 1927, Springfield C.; Ph.D. 1940, New York

Bushnell, Oswald A., Emeritus Professor of Microbiology & Medical History; B.S. 1934, Hawaii; M.S. 1935, Ph.D. 1937, Wisconsin

Carr, Elizabeth B., Emeritus Professor of Speech; B.A. 1924, M.A. 1940, Oklahoma; Ph.D. 1953, Louisiana State

Carter, Walter, Emeritus Professor of Entomology; B.S. 1923, Montana; M.S. 1924, Ph.D. 1928, Minnesota

Charlot, Jean, Emeritus Senior Professor of French; B.A. 1946, Grinnell; L.L. 1956, St. Mary’s C.

Cheng, Ch’eng-K’un, Emeritus Professor of Sociology; B.A. 1932, Yenching; M.A. 1937, Ph.D. 1945, Washington

Chu, George W., Emeritus Professor of Microbiology; B.A. 1928, Lingnan; M.S. 1931, Yenching; Sc.D. 1934, Johns Hopkins

Chun, Dai Ho, Emeritus Professor of Education; B.A. 1930, M.A. 1937, Hawaii; Ph.D. 1947, Ohio State

Clark, Francis E., Emeritus Professor of Education; B.S. 1930, Northern State Teachers C.; M.S. 1937, Ed.D. 1948, Colorado

Clements, Harry F., Emeritus Senior Professor of Plant Physiology; B.S. 1924, M.S. 1925, Wisconsin; Ph.D. 1929, Chicago

Clotpon, Robert W., Emeritus Senior Professor of Education; B.A. 1926, Marysville C.; M.Ed. 1941, Hawaii; Ph.D. 1946, Northwestern

Cox, J. Halley, Emeritus Professor of Art; B.A. 1933, San Jose State; M.A. 1937, California

Crossley, John B., Emeritus Professor of Education; B.A. 1929, Pomona; M.A. 1940, Claremont; D.Litt., 1945, Howard; Ed.D. 1950, UCLA

Daniel, L. Scott, Emeritus Professor of Engineering; B.S. 1945, Montana State

Day, A. Grove, Emeritus Senior Professor of English; B.A. 1926, M.A. 1943, Ph.D. 1944, Stanford

Elbert, Samuel H., Emeritus Professor of Pacific Languages and Linguistics; B.A. 1928, Grinnell; B.Lit. 1931, Columbia; Ph.D. 1950, Indiana

Eller, Willard H., Emeritus Professor of Physics; B.S. 1914, Ph.D. 1928, California; M.A. 1925, Washington

Emory, Kenneth P., Emeritus Professor of Anthropology; B.A. 1920, Dartmouth; M.A. 1923, Harvard; Ph.D. 1946, Yale

Ernst, Earl E., Emeritus Senior Professor of Drama and Theatre; B.A. 1933, Grinnell; M.A. 1938, Ph.D. 1940, Cornell

Ewing, Claude H., Emeritus Professor of Education; Ph.B. 1933, Chicago; M.A. 1936, Colorado State C.; Ph.D. 1946, Northwestern

Fisher, Raymond, Emeritus Professor of Social Work; A.B. 1934, M.Sc. 1939, Western Reserve

Frierson, James W., Emeritus Professor of English; B.A. 1929, LL.B. 1933, Tulane; Ph.D. 1935, Stanford

George, Dorothy, Emeritus Professor of English; B.A. 1936, Louisiana State Normal; M.A. 1937, Ph.D. 1950, Louisiana State

Glick, Clarence E., Emeritus Professor of Sociology; B.A. 1927, De Pauw; M.A. 1928, Ph.D. 1938, Chicago

Gosline, William A., Emeritus Professor of Zoology; B.S. 1938, Harvard; Ph.D. 1941, Stanford

Goto, Y. Baron, Emeritus Vice-Chancellor of Education; B.S. 1924, Hawaii; Sc.D. (Hon.) 1959, Oregon

Grayson, Henry W., Emeritus Professor of Business Economics; B.A. 1937, Saskatchewan; M.A. 1947, Ph.D. 1950, Toronto

Gruelle, Katherine B., Emeritus Professor of Home Economics; B.S. 1917, Ohio State; M.A. 1925, Columbia

Hamilton, Thomas H., Emeritus President and Senior Professor of Political Science; Degrees listed under "Former Presidents"

Harloe, Bartley M., Emeritus Professor of Engineering; B.S. 1917, U.S. Military Academy; C.E. 1922, Rensselaer

Harell, Gertrude P., Emeritus Specialist Cooperative Extension Service; B.S. 1927, Georgia State C.; M.A. 1949, Columbia

Henke, Louis A., Emeritus Professor of Agriculture; B.S. 1912, M.S. 1923, Wisconsin
EMERITI

Herrick, Colin J., Emeritus Professor of Psychology; B.A. 1924, Haverford C.; M.A. 1934, Ph.D. 1939, Pennsylvania

Hiatt, Robert W., Emeritus Vice-President and Senior Professor of Zoology; Degrees listed under "Former Presidents"

Hiroshige, Herbert M., Emeritus Specialist in Agricultural Economics B.S. 1934, California; M.A. 1950, Hawaii

Holmes, Wilfred J., Emeritus Dean and Senior Professor of Engineering B.S. 1922, U.S. Naval Academy; M.S. 1929, Columbia

Honma, Haruo, Emeritus County Agent B.S. 1940, Hawaii; M.Ed. 1950, Colorado State; M.S. 1959, Michigan State

Hormann, Bernhard L., Emeritus Professor of Sociology; B.A. 1927, M.A. 1931, Hawaii; Ph.D. 1949, Chicago

Hsiao, Sidney C., Emeritus Professor of Zoology; B.A. 1928, Shanghai; M.A. 1933, Yenching; Ph.D. 1938, Harvard

Jones, Virginia A., Emeritus Dean and Professor of Nursing; R.N. 1920, Reid Memorial Hospital School of Nursing; B.S. 1933, Indiana; 1944, Hawaii

Kahananui, Dorothy, Emeritus Associate Professor of Music; B.S. 1931, New York; M.Ed. 1936, Hawaii

Kerr, Marian, Emeritus Professor of Music; B.M. 1929, M.M. 1944, Oberlin

Korn, Alfonso L., Emeritus Professor of English; B.A. 1927, Oregon; B.A. 1930, Oxford; M.A. 1937, California (Berkeley); M.A. 1968, Oxford

Lee, Richard C.K., Emeritus Dean and Professor of Public Health; M.D. 1933, Tulane; Dr.P.H. 1938, Yale

Leebrick, Karl C., Emeritus Professor of Government; B.S. 1911, M.S. 1913, Ph.D. 1916, California

Leong, Yau Sing, Emeritus Professor of Business Economics and Quantitative Methods; B.A. 1924, Hawaii; M.A. 1925, Ph.D. 1933, Columbia

Li, Fang-Kuei, Emeritus Professor of Asian Linguistics; B.A. 1926, Michigan; M.A. 1927, Ph.D. 1928, Chicago; D. Litt., 1972, Michigan

Lind, Andrew W., Emeritus Senior Professor of Sociology; B.A. 1924, M.A. 1925, Washington; Ph.D. 1931, Chicago

Lowers, James K., Emeritus Professor of English; B.A. 1935, M.A. 1937, Ph.D. 1950, UCLA

Lyman, Clarence, Emeritus Specialist in Pasture Management; B.S. 1937, A.B. 1941, Hawaii

Mason, Leonard E., Emeritus Professor of Anthropology; B.A. 1935, M.A. 1941, Minnesota; Ph.D. 1955, Yale

Matthews, Donald C., Emeritus Professor of Zoology; B.A. 1931, Ph.D. 1935, Wisconsin


Miller, Carey D., Emeritus Professor of Nutrition; B.A. 1917, California; M.S. 1922, Columbia

Miyake, Iwao, Emeritus Professor of Physics; B.S. 1926, M.S. 1929, Hawaii

Murphy, Thomas D., Emeritus Professor of History; B.A. 1933, M.A. 1934, Wesleyan; Ph.D. 1939, Yale

Nickerson, Thomas, Emeritus Director of University Press; A.B. 1925, Harvard

Pecker, Irving O., Emeritus Professor of Romance Languages; B.A. 1912, Boston

Poole, Charles F., Emeritus Senior Professor of Agriculture; B.S. 1920, M.S. 1926, Hawaii; Ph.D. 1930, California

Porter, M. Rosemonde, Emeritus Professor of Education; B.S. 1930, M.A. 1934, Ph.D. 1938, Ohio State

Rosenberg, Morton M., Emeritus Senior Professor of Poultry Science; B.S. 1938, Rutgers; M.S. 1940, Texas A. & M.; Ph.D. 1948, Wisconsin

St. John, Harold, Emeritus Professor of Botany; B.A. 1914, M.A. 1915, Ph.D. 1917, Harvard

Sakamaki, Shunzo, Emeritus Dean of Summer Session & Professor of History B.A. 1927, M.A. 1928, Hawaii; Ph.D. 1939, Columbia

Saksema, Shri K., Emeritus Professor of Philosophy; B.A. 1923, M.A. 1927, Allahabad; Ph.D. 1939, London

Saunders, Allan F., Emeritus Senior Professor of Political Science; B.A. 1918, Amherst; M.A. 1920, Ph.D. 1927, Wisconsin

Shigeta, James Y., Emeritus Specialist in Club Work; B.S. 1951, Maryland; M.S. 1958, Wisconsin

Sinclair, Gregg M., Emeritus President; Degrees listed under "Former Presidents"

Smith, Albert C., Emeritus Professor of Botany; B.A. 1926, Columbia; C.; Ph.D. 1933, Columbia

Snyder, Laurence H., Emeritus President and Senior Professor of Genetics; Degrees listed under "Former Presidents"

Stormont, John, Emeritus Specialist Cooperative Extension Service B.S. 1928, Illinois; M.Ed. 1954, Cornell

Stroven, Carl G., Emeritus Senior Professor of English and Librarian A.B. 1926, M.A. 1928, Stanford; Ph.D. 1939, Duke

Takahashi, Makoto, Emeritus Associate Professor of Agronomy B.S. 1928, M.S. 1937, Hawaii

Tuthill, Leonard D., Emeritus Professor of Entomology; B.A. 1929, M.A. 1930, Kansas; Ph.D. 1941, Iowa State

Uyehara, Yukuo, Emeritus Professor of Japanese Literature; B.A. 1931, M.A. 1936, Hawaii

Vine, Richard W., Emeritus Professor of Music; B.M. 1936, St. Olaf; M.M. 1938, McPhil C. of Music

Vollrath, Harvey M., Emeritus Professor of Animal Husbandry B.S. 1929, Colorado State; M.S. 1948, Minnesota

White, Bruce E., Emeritus Dean and Senior Professor of Education B.A. 1923, Willamette; M.A. 1932, Ph.D. 1935, Washington

Wilson, Willard, Emeritus Secretary of the University and Senior Professor of English; Degrees listed under "Former Presidents"

Winnick, Theodore, Emeritus Professor of Biochemistry; B.A. 1935, California (Los Angeles); Ph.D. 1939, California

Wiswell, Ella L., Emeritus Associate Professor of European Languages Diploma 1931, Paris; B.A. 1941, Hawaii

Wittermans, Tamme, Emeritus Professor of Sociology; Ph.D. 1955, London

Youge, Otto R., Emeritus Professor of Agronomy; B.A. 1924, M.S. 1929, Alberta; Ph.D. 1934, Minnesota

Affiliate Graduate Faculty

Allen, J.F., V.M.D., Staff Veterinarian Naval Undersea Research and Development Center/Hawaii Laboratory

Apt, W.J., Ph.D., Nematologist Pineapple Research Institute

Barkley, R.A., Ph.D., Chief Oceanography Investigation, Bureau of Commercial Fisheries, U.S. Fish & Wildlife Service

Bateson, G., M.A., Associate Director of Research, Oceanic Institute, Makapuu

Belshe, J.C., Ph.D., Technical Director Kentron Hawaii, Ltd.

Brameld, T., Ph.D., Distinguished Professor of Urban Living, Herbert Lehman College, City University of New York

Breke, J.E., M.S., Food Technologist Hawaii Fruit Laboratory, U.S. Department of Agriculture

Byther, R., Ph.D., Associate Plant Pathologist, Hawaiian Sugar Planters' Association

Chan, H.T., Ph.D., Research Food Technologist, Hawaii Fruit Laboratory, U.S. Department of Agriculture

Chang, V.C.S., Ph.D., Associate Entomologist, Hawaiian Sugar Planters' Association
Christiansen, R.L., Ph.D., Geologist
Hawaiian Volcano Observatory, U.S. Geological Survey

Claybaugh, J.R., Ph.D., Assistant
Clinical Professor, Department of Physiology, University of Hawaii

Colby, E.W., M.P.H., Assistant Medical
Director, Rehabilitation Center of Hawaii

Collier, W.L., Ph.D., Agricultural
Economist, Agricultural Development Council, Inc.

Connor, A., M.D., Chief, Division of Children's Health Services, State Department of Health

Creighton, T.H., B.A., Lecturer
Department of Architecture, University of Hawaii

Cunningham, R.T., Ph.D., Research
Entomologist, Hawaiian Fruit Flies Investigation, U.S. Department of Agriculture, Hilo, Hawaii

Davis, C.J., B.S., Chief
Entomology Branch, State Department of Agriculture

Davis, D.A., M.S., District Geologist
U.S. Geological Survey

Dollar, A.M., Ph.D., Supervisor
Hawaii Development Irradiator, State Department of Agriculture

Emory, K.E., Ph.D., Anthropologist
Bishop Museum

Evans, E.C., Ph.D., Senior Scientist
and Head, Acoustic Environment Program, Naval Undersea Research and Development Center/Hawaii Laboratory

Felton, G.E., Ph.D., Technical Director
Dole Corporation

Force, R.W., Ph.D., Director
Bishop Museum

Fosberg, F.R., Ph.D., Special Adviser
on Tropical Biology
Smithsonian Institution

Gallimore, R.G., Ph.D., Research
Specialist, Neuropsychiatric Institute, University of California (Los Angeles)

Gressitt, J.L., Ph.D., Entomologist
Bishop Museum

Gudeman, H.E., Ph.D., Director
Psychological Services and Training, Hawaii State Hospital

Haines, F., M.F.A., Lecturer
Department of Architecture, University of Hawaii

Halperin, S.L., Ph.D., Clinical
Psychologist, Tripler General Hospital

Hansen, J.E., M.D., Clinical Professor
Department of Physiology, University of Hawaii

Harvey, G.W., Ph.D., Chief Scientist
Oceanic Institute, Makapuu

Heinicke, R.M., Ph.D., Director
Chemistry and Food Research, Dole Corporation

Heinz, D.J., Ph.D., Head, Department of Genetics and Pathology, Experiment Station, Hawaiian Sugar Planters' Association

Hester, F.J., Ph.D., Area Director
National Oceanic and Atmospheric Administration, National Marine Fisheries Service, U.S. Department of Commerce

Hogg, H.C., Ph.D., Agricultural
Economist, U.S. Department of Agriculture

Isobe, M., Ph.D., Head
Agronomy Department, Experiment Station, Hawaiian Sugar Planters' Association

Joyce, C.R., Ph.D., Medical Entomologist
U.S. Public Health Service

Kohloss, F.H., M.S., President
Frederick H. Kohloss & Associates, Inc., Consulting Engineers

Krauss, B. M.S., Research Affiliate
Departments of Botany and Plant Physiology, University of Hawaii

Lai, T.M., Ph.D., Associate Agronomist
Hawaiian Sugar Planters' Association

Larsen, J.C., Ph.D., Research
Oceanographer, Tsunami Research Effort Group, Environmental Science Services Administration, U.S. Department of Commerce


Loomis, H., Ph.D., Mathematician
Tsunami Research Effort Group, Environmental Science Services Administration, U.S. Department of Commerce

McLaren, K., M.P.H., Chief
Public Health Nursing Branch, State Department of Health

Merrill, W.D., M.Arch., Lecturer
Department of Architecture, University of Hawaii

Miller, G., Ph.D., Chief, Tsunami Research Effort Group, Environmental Science Services Administration, U.S. Department of Commerce

Myers, A.L., M.S.A.E., Agricultural
Engineer, Agricultural Research Service, Agricultural Engineering Research Division, U.S. Department of Agriculture

Nickell, L.G., Ph.D., Assistant Director
of Research and Head, Physiology and Biochemistry Department, Experiment Station, Hawaiian Sugar Planters' Association

Osgood, R.V., Ph.D., Associate Agronomist
Department of Chemistry, Experiment Station, Hawaiian Sugar Planters' Association

Ota, A.K., Ph.D., Principal Entomologist
Hawaiian Sugar Planters' Association

Pegg, J., M.D., Clinical Professor
Department of Physiology, University of Hawaii

Pepper, R.L., Ph.D., Head, Advanced Concepts Research Branch, Naval Undersea Research and Development Center/Hawaii Laboratory

Peterson, D.W., Ph.D., Geologist
Hawaiian Volcano Observatory, U.S. Geological Survey

Preisendorfer, R., Ph.D., Mathematician
Tsunami Research Effort Group, National Oceanic and Atmospheric Administration, U.S. Department of Commerce

Price, S., M.S., Regional Climatologist
Water Resources Research Center

Quisenberry, W.B., M.D., Director
State Department of Health

Radovsky, F.J., Ph.D., Acarologist
Bishop Museum

Randall, J.E., Ph.D., Head Ichthyologist
Bishop Museum

Rohrback, K.G., Ph.D., Plant Pathologist
Dole Corporation

Rosen, L.M., M.D., Head, Pacific Research Section, National Institute of Allergy & Infectious Diseases, U.S. Department of Health, Education and Welfare

Sakimura, K., B.S., Entomologist
Pineapple Research Institute

Santo, Y., Sc.D., Archeologist
Bishop Museum

Steffen, W.A., Ph.D., Entomologist
Bishop Museum

Steiner, G.W., Ph.D., Associate Plant Pathologist, Hawaiian Sugar Planters' Association

Takata, M., M.S., Director, Division of Fish and Game, State Department of Agriculture and Conservation

Tom, A.Q.Y., Ph.D., President
Sunn. Low. Tom. & Hara, Inc., Consulting Engineers

Van Royen, P., Ph.D., Chairman and Botanist, Department of Botany, Bishop Museum

Wagner, W., Ph.D., Professor of Botany and Curator, Herbarium, University of Michigan

Wallrabenstein, P.P., Ph.D., Agricultural Statistician in Charge, Statistical Reporting Service, U.S. Department of Agriculture

Williams, D.D., Ph.D., Acting Director
Pineapple Research Institute

Yee, A.A., M.E., Structural Engineer
Department of Architecture, University of Hawaii

Yen, D.E., M.Agr.Sc., Ethnobotanist
Bishop Museum

Ziegler, A.C., Ph.D., Head
Division of Vertebrate Zoology,
Bishop Museum
Office of Research Administration

*McKaughan, Howard P. ........ Director and Dean
*Chiu, Arthur N.L., Associate Dean, Research, Fellowships & Special Training Programs
Ah San, Allan Y.S., Administrative Officer; B.B.A. 1969, Hawaii
Epstein, Carole L., Asst. to Dean, Fellowships & Tng. Prog.; B.A. 1967; Maryland; M.A. 1968, Stanford
Fuji, Donald M., Administrative Officer; B.B.A. 1967, Hawaii
Li, Wilfred, Administrative Officer B.B.A. 1961, Hawaii
Kakugawa, Paul K., Administrative Officer; B.Ed. 1960, B.B.A. 1963, Hawaii
Matsunaga, Ichiro, Asst. to Director of Research, Fiscal Affairs B.S.A. 1951, Walton School of Commerce
McCath, Carroll B., Jr., Asst. to Director of Research; B.S. 1932, Oregon State; M.S. 1936, New York
Ouchi, Herbert H., Administrative Officer; B.B.A. 1966, Hawaii

Center for Engineering Research

Grace, Donald J. .................. Director B.E.E. 1948, M.S.E.E. 1949, Ohio State; Ph.D. 1962, Stanford
Kamiya, Mary, Research Associate B.A. 1968, Hawaii
Sheets, George M., Engineering Editor J.D. 1963, Arizona
*Scillar, Rudolph, Professor of Civil Engineering
*Yuen, Paul C., Associate Dean, College of Engr. and Prof. of EE

Education Research and Development Center

*Ryan, David G. .................. Director
*Adkins, Dorothy C., Researcher
*Bail, Frederick T., Asst. Researcher
Daguzzo, Robert N., Research Associate
*King, Arthur R., Jr., Researcher
*Leton, Donald A., Researcher
*O’Malley, J. Michael, Asst. Researcher
*Payne, Frank D., Asst. Researcher
Pierce, Marilyn, Research Associate
*Reid, Ian E., Researcher Affiliate
*Ryan, T. Antoinette, Researcher
Suttmeier, Merle, Researcher Associate
*Staats, Arthur W., Researcher Affiliate

Hawaii Agricultural Experiment Station

*Wilson, C. Peairs .................. Director
*Swindle, Leslie D., Assoc. Director and Soil Scientist
Ahuja, Laipat, Asst. Soil Scientist B.S. 1954, India; M.S. 1961, India; Ph.D. 1968, California (Davis)
*Akamine, Ernest K., Plant Physiologist
*Allen, James G., Researcher
*Anderson, Robert N., Asst. Ag. Economist
*Arakaki, Minoru, Plant Pathologist
Awada, Minoru, Assoc. Plant Physiologist B.S. 1938, M.S. 1949, Hawaii
*Bartholomew, Duane P., Asst. Agronomist
*Beardsley, John W., Entomologist
*Berquist, Richard R., Asst. Plant Pathologist
Bevenue, Arthur, Agric. Chemist B.S. 1946, California
Bowen, John E., Assoc. Plant Physiologist; B.A. 1960, Western Maryland C.; M.S. 1963, Ph.D. 1965, Maryland
Bower, Charles A., Soil Scientist B.S. 1936, Oklahoma; Ph.D. 1941, Wisconsin
*Brewbaker, James L., Horticulturist
*Brooks, Coy C., Animal Scientist
*Buddenhagen, Ivan W., Plant Pathologist
*Burlock, Richard M., Asst. Director and Agronomist
Campbell, Charles M., Assoc. Animal Scientist; B.S. 1958, Texas A&M; M.S. 1960, Idaho; Ph.D. 1964, Oklahoma State
*Caivalletto, Catherine G., Asst. Food Technologist
Chang, Annie, Jr. Soil Scientist B.S. 1947, Michigan; M.S. 1952, Hawaii
Chang, Elaine M.L., Res. Assoc. 3 B.S. 1954, Hawaii
*Chang, Franklin, Asst. Entomologist
*Chantiny, John G., Prof. of Human Dev. Chu, Ada, Jr. Agronomist B.S. 1947, Pennsylvania; M.S. 1951, Hawaii
*Clements, Harry F., Sr. Plant Physiologist Emeritus; B.S. 1924, M.S. 1925, Wisconsin; Ph.D. 1929, Chicago
*Cool Bruce J., Plant Physiologist
*Crawley, Richard A., Asst. Horticulturist
*Davidson, Jack R., Agricultural Economist
de la Penas, Ramon S., Asst. Spec. in Agron; B.S. 1958, Philippines; M.S. 1964, Ph.D. 1967, Hawaii
*Ekern, Paul, Soil Scientist
*El-Swaffy, Samir A., Assoc. Soil Scientist
*Fox, Robert L., Soil Scientist
*Frank, Hilmer A., Food Technologist
Fukunaga, Edward T., Agriculturist B.S. 1934, M.S. 1935, Hawaii
*Garrood, Peter V., Asst. Agr. Economist
*Gilbert, James C., Horticulturist
Goo, Theodore T.S., Research Associate B.S. 1966, Hawaii
*Gopalakrishnan, Chennat, Assoc. Agricultural Economist
*Goto, Shosuke, Assoc. Plant Pathologist
*Green, Richard E., Assoc. Soil Scientist
*Hamilton, Richard A., Horticulturist
*Haramoto, Frank H., Assoc. Entomologist
*Hardy, D. Elmo, Sr. Entomologist
*Hartmann, Richard, Assoc. Horticulturist
*Herrick, Orpha, Assoc. Prof. of Fash. Des., Tex. & Merchandising
*Herrick, Raymond B., Assoc. Poultry Scientist
Higa, Stanley Y., Research Associate B.S. 1961, Hawaii
*Hilker, Doris M., Assoc. Nutritionist
*Hing, Francisco S., Assoc. Food Tech. Ho-a, Elodie B., Research Associate B.A. 1969, Hawaii
*Holtzmann, Oliver V., Plant Pathologist
*Huang, Wen-yuan, Jr. Researcher
*Hundtoft, Elgin B., Assoc. Ag. Engr.
*Hylin, John W., Biochemist
*Ikawa, Haruyoshi, Assoc. Soil Scientist
*Ishii, Mamoru, Assoc. Plant Pathologist
Izutsu, Satoru, Research Affiliate in Human Development; B.S. 1950, Hawaii; M.A. 1955, Columbia; Ph.D. 1963, Western Reserve
*Jones, Rollin C., Asst. Soil Scientist
*Kamemoto, Haruyuki, Horticulturist
*Kaneko, Yoshinori, Soil Scientist
*Kawano, Yoshihiko, Asst. Biochemist B.A. 1943, Nihon U.; M.S. 1957, Hawaii
*Keeler, Joseph T., Asst. Ag. Economist
*Keeler, Noel P., Asst. Horticulturist
*Kinich, Donald M., Agricultural Engineer
Kirschbaum, William T., Technician
Ko, Wen-hsiung, Assoc. Plant Pathologist; B.S. 1962, National Taiwan U.; Ph.D. 1966, Michigan State
RESEARCH UNITS

*Koch, Burton L., Asst. Soil Scientist
*Krathy, Bernard A., Asst. Horticulturist
Krauss, Beatrice, Research Affiliate
B.S. 1926, M.S. 1930, Hawaii
Kunisaki, John T., Asst. Horticulturist
B.S. 1960, M.S. 1964, Hawaii
*Larson, Arnold B., Agricultural Economist
*Li, Tung, Assoc. Agricultural Engineer
*Lichton, Ira J., Nutritionist
Long, Charles R., Research Associate
B.S. 1953, M.S. 1966, California
*Luykx, Nicolaas, Agricultural Economist
*Mapes, Marion O., Asst. Agronomist
*Matsumoto, Hiromu, Biochemist
Mee, John M.L., Research Associate
B.S. 1959, Taiwan; M.S. 1963, Wisconsin
*Meredith, Connie, Asst. Prof. Human Development
*Meredith, Donald S., Plant Pathologist
*Mitchell, Wallace C., Entomologist
*Mosier, Roy E., Food Technologist
*Moy, James H., Assoc. Food Technologist
*Murdock, Charles, Asst. Horticulturist
*Nakamura, Robert M., Assoc. Animal Scientist
*Nakasone, Henry Y., Horticulturist
Nakata, Shigeru, Assoc. Plant Physiologist
B.S. 1946, M.S. 1949, Ph.D. 1965, Hawaii
*Nakayama, Tommy, Food Technologist
*Namba, Ryoji, Entomologist
*Nishida, Toshiyuki, Entomologist
*Nishimoto, Roy K., Asst. Horticulturist
*Ogata, James N., Jr. Chemist
*B.S. 1956, M.S. 1972, Hawaii
*Okazaki, Ernest, Jr. Researcher
B.S. 1959, Hawaii
*Olbrich, Steven E., Research Associate
B.S. 1965, Wisconsin; M.S. 1968, Hawaii; Ph.D. 1971, Missouri
*Palafox, Anastacio L., Assoc. Poultry Scientist
Parvin, Philip E., Horticulturist
B.S.A. 1950, Florida; M.S. 1952, Mississippi; Ph.D. 1965, Michigan
Pati, Suresh S., Assoc. Plant Pathologist
B.S. 1955, Sir Parashuramibhau C. (India); M.S. 1959, Ph.D. 1962, Oregon State
*Philipp, Perry F., Agricultural Economist
*Plucknett, Donald L., Agronomist
*Putman, Edison W., Assoc. Plant Physiologist
*Reimer, Driedrich, Animal Scientist
B.S.A. 1950, Manitoba; M.S. 1955, Ph.D. 1959, Minnesota
*Ross, Ernest, Poultry Scientist
*Rotar, Peter P., Agronomist
*Sagawa, Yoneo, Horticulturist
Sakai, William, Asst. Soil Scientist
B.S. 1966, Michigan; Ph.D. 1970, Hawaii
*Sanford, Wallace G., Agronomist
*Scott, Frank S., Agricultural Economist
*Schwitters, Sylvia, Asst. Prof. Human Development
Sekioka, Terry T., Asst. Horticulturist
B.S. 1963, Hawaii; M.S. 1967, Ph.D. 1969, Minnesota
*Sherman, Martin, Entomologist
Shigeura, Gordon T., Horticulturist
B.S. 1939, M.S. 1947, Hawaii
*Silva, James A., Assoc. Soil Scientist
*Smith, M. Ray, Assoc. Agric. Engineer
*Spielmann, Heinz, Agric. Economist
*Standal, Bluebell R., Assoc. Nutritionist
*Stanley, Richard W., Animal Scientist
*Staub, William J., Assoc. Agric. Economist
Suehisa, Robert H., Research Associate
B.Sc. 1959, Colorado; M.Sc. 1961, Hawaii
*Tamashiro, Minoru, Assoc. Entomologist
Tamami, Yusuf N., Assoc. 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
*Tang, Chung-Shih, Asst. Biochemist
Thompson, John R., Agronomist
B.S. 1949, M.S. 1952, Minnesota; Ph.D. 1964, Iowa State
Toma, Wayne Y., Research Associate
B.A. 1969, Hawaii
*Trujillo, Eduardo E., Assoc. Plant Pathologist
Tsuda, Dick M., Research Associate
B.S. 1969, Hawaii
Tsui, Gordon, Asst. Soil Scientist
B.S. 1965, M.S. 1967, Hawaii; Ph.D. 1971, Purdue
*Uehara, Goro, Soil Scientist
*Uetara, Ukio, Asst. Agronomist
*Van Reen, Robert, Nutritionist
*Vieht, Gary R., Asst. Agr. Economist
*Vogt, Dale W., Assoc. Animal Scientist
*Walker, Barbara, Asst. Prof. of Farm. Des., Text. & Merchandising
*Wang, Jaw-kai, Agricultural Engineer
Watanabe, Roger T., Asst. Soil Scientist
B.S. 1956, Hawaii
*Wayman, Oliver, Animal Scientist
Wenkam, Nao, Asst. Nutritionist
B.S. 1948, M.S. 1950, Chicago
Whitney, Arthur S., Assoc. Agronomist
B.S. 1935, Ohio; M.S. 1938, Cornell; Ph.D. 1966, Hawaii
*Wittermans, Elizabeth, Assoc. Prof. Human Development
*Wu, I-Pai, Assoc. Agric. Engineer
*Yamamoto, Harry Y., Food Technologist
*Yamauchi, Hiroshi, Assoc. Agric. Economist
*Young, Franklin, Assoc. Nutritionist
*Young, Hong Yip, Assoc. Agronomist

Economic Research Center
*Miklius, Walter ................. Director
*Comini, Salvatore, Assoc. Prof. of Econ.
*Ebel, Robert, Asst. Prof. of Econ.
*Ghali, Mohamad, Assoc. Prof. of Econ.
*Heller, Robert, Prof. of Econ.
*Pollock, Richard, Asst. Prof. of Econ.
*Renaud, Bertrand, Assoc. Prof. of Econ.
*Shang, Yung, Asst. Economist
B.A. 1958, Taiwan Provincial
Chung-Hsing; M.S. 1962, Southern Illinois; Ph.D. 1969, Hawaii

J.K.K. Look Laboratory of Oceanographic Engineering

*O'Brien, John T. .................. Director
Bathen, Karl H., Assoc. Researcher in Ocean Engineering
B.S. 1956, Connecticut; M.S. 1968, Ph.D. 1970, Hawaii
*Bretschneider, Charles L., Prof. of Ocean Engineering
Furuto, Gordon T., Technician
Ho, Henry F., Technician
*Gerritsen, Franciscus, Prof. of Ocean Engineering
Lee, Theodore T., Researcher in Ocean Engineering
B.Sc. 1947, National Peiyang U., China; M.Sc. 1960, State U. of Iowa
Palmer, Robert Q., Assoc. Researcher in Ocean Engineering
A.S. 1935, New Mexico
*Seidl, Ludwig H., Assoc. Prof. of Ocean Engineering
St. George, A. John, Technician
B.S. 1930, Michigan

Land Study Bureau
*Baker, Harold L. .................. Director
and Land Economist
DeVight, Gary D., Jr., Spec. in Economics
B.A. 1971, M.A. 1972, Hawaii
Fujimura, Faith N., Asst. Spec. in Cartography
B.A. 1950, Hawaii
Haughton, Fred A., Jr., B.S. Research Affiliate
State Conservationist, Soil Conservation Service
Murabayashi, Edwin T., Asst. 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
**Institute for Astronomy**

**Jefferies, John T. Director**
Bandermann, Lothar. Asst. Astronomer A.B. 1963, California; Ph.D. 1968, Maryland

Bigelow, Kathryn A. Research Associate B.S. 1965, California

Bishop, Robert L. Technician B.S. 1965, California

Boegaard, Ann M. Assoc. Professor B.A. 1937, California

Brelher, Gale E. Technician B.A. 1960, Midwestern

Brund, Kamalu A.C. Research Associate B.S. 1962, M.S. 1966, Wayne State

Cairns, Stanley D. Research Associate B.S. 1962, Ph.D. 1966, Wayne State

Carter, William E. Research Assoc. B.S. 1961, Pittsburgh; M.S. 1965, Ohio State

Cheigh, Francis. Research Assoc. B.A. 1962, Hawaii


Cruise, William L. Technician

Crump, Philip C. Research Assoc.

Eldey, Yuri. Technician

Emarine, Lester L. Supv., Machine Shop Enos, Ernest B. Technician

Finn, Gerard D. Asst. Astronomer B.S. 1962, Ph.D. 1965, Queensland

Fischer, Edward E. Technician

Fukuhara, Roy C. Technician

Gradney, Walter. Technician B.S. 1968, Lamar State College of Technology

Graham, Roy T. Supv. of Maintenance, Holekula Observatory

Gray, Harold A. Research Assoc. B.S. 1960, Ohio State


Harwood, James V. Research Assoc. A.B. 1958, Columbia

Hendricks, Peter L. Research Assoc. B.A. 1961, California (Berkeley); M.A. 1967, Hawaii

Hendrickson, Dufl C. Research Assoc. B.A. 1964, Maryland

Hiplman, William W. Technician

Honda, Albert A. Technician

Kawamura, Setsuji, Technician A.A. 1940, Indiana Technical C.

Kemp, James C. Astronomer A.B. 1955, Ph.D. 1960, California (Berkeley)

Kempton, David B., Technician

King, Mary J., Technician

Knudsen, Derek W., Technician

Kowalski, Alexander T., Research Associate


Lohofte, Robert, Admin. Officer B.E. 1943, U.S. Coast Guard Academy; M.B.A. 1957, Harvard

Lu, Wayne M.T., Technician

McCabe, Marie K., Assoc. Astronomer B.S. 1945, N. Zealand; M.S. 1955, London

McGinnis, Lyle O., Technician


Miller, Kenneth R., Technician

Missbach, Mary F., Spec. (Librarian)

Miyahara, Judith M., Admin. Officer B.A. 1965, Hawaii

Miyashiro, Glenn, Technician


Oda, Sadao, Research Associate B.A. 1957, Heald Engineering Co.

*Orrall, Frank Q., Professor

Phelps, William E., Technician

Raabe, John C., Research Associate

Ryerson, Herbert R., Research Assoc. B.S. 1949, Fenn C.; M.S. 1970, Hawaii

Siefermann, Pauline F., Admin. Officer


*Sinton, William M., Professor

Smith, Peter H., Research Assoc. B.A. 1969, California (Berkeley)

Stahlberger, Werner E., Technician

Stockton, Alan N., Asst. Astronomer B.A. 1964, California (Berkeley); Ph.D. 1968, Arizona

Taylor, William A., Research Assoc.

Uemura, Paul K., Technician

Urqueta, Arturo E., Research Assoc.

Ward, James H., Research Assoc. B.A. 1966, Texas

Williams, James D., Research Assoc. B.S.E.E. 1959, Oklahoma State

Williams, Weston, Research Assoc. B.A. 1962, Humboldt


Woodcock, Alfred H., D.Sc. (Hon.), Research Affiliate: Oceanographer, U. of Hawaii

*Wyrtki, Klaus. Oceanographer (Physical Oceanography)

Young, Edith H., Spec. (Librarian) A.B. 1930, Oberlin

**RESEARCH UNITS**

Miller, Gaylord R., Ph.D., Research Affiliate: Oceanographer, Tsunami Research, National Oceanic Atmospheric Administration

Moberly, Ralph M., Jr., Geologist

Monges-Caldera, Julio (Ing.), Research Affiliate: Geophysicist, Universidad Nacional de Mexico

*Naughton, John J., Chemist (Geochemistry)

Norris, Roger A., Jr., Geophysicist B.A. 1960, M.S. 1963, Hawaii

Odegard, Mark E., Jr., Geophysicist B.A. 1962, Montana; M.S. 1965, Oregon

*Pankiewsky, Kost A., Assoc. Geologist

*Parvulescu, Antares, Ocean Engineer (Acoustics)

Pryor, Taylor A., A.B., Research Affiliate: President, Oceanic Foundation, Makapuu

Ramananantoandro, Ramanantsoa, Asst. Geophysicist; B.S. 1963, U. of Strasbourg (France); M.S. 1965, New Mexico Inst. of Mining and Tech.; Ph.D. 1971, Washington

*Resig, Johanna M., Assoc. Geologist

Rex, Robert Walter, Ph.D., Research Affiliate: Geologist, U. of California (Riverside)

Rhodes, Richard R., Technician (Drafting); B.F.A. 1938, Chicago

Rollinson, George R., Technician (Property Officer)

*Rose, John C., Geophysicist

Roxburgh, Kenneth, Asst. Geophysicist B.Sc. 1966, U. of Alberta (Canada); Ph.D. 1970, British Columbia (Canada)


Schlabach, David R., Technician (Electronics)

Severson, William B., Spec. (Computer) B.S. 1964, California (Berkeley)

Sokolowski, Thomas J., M.S., Research Affiliate: Geophysicist, Tsunami Research, National Oceanic and Atmospheric Administration

Stearns, Harold T., Ph.D., Research Affiliate: Consulting Geologist, East Palo Alto, California

*Stroup, Edward D., Assoc. Oceanographer (Physical Oceanography)

*Sutton, George H., Assoc. Director and Geophysicist

Thayer, Fritz, Asst. Geophysicist Licenciado (M.S.) 1966, U. of Concepcion (Chile); Ph.D. 1972, Southern California

Thompson, Noel J., Research Assoc. (Electronics Engineer); B.S. 1951, Wisconsin

Vitousek, Martin J., Spec. (Oceanographic Instrument) B.S. 1949, Ph.D. 1955, Stanford

Walker, Daniel A., Jr., Seismologist (Geophysics); B.S. 1963, John Carroll (Cleveland); M.S. 1965, Ph.D. 1971, Hawaii

Hiplman, William W. Technician
Hawaii Institute of Marine Biology

Bardach, John E. Director
B.S. 1946, Queen's; M.S. 1948, Ph.D. 1949, Wisconsin
Helfrich, Philip Associate Director
B.S. 1951, Santa Clara; Ph.D. 1958, Hawaii
Ahearn, Gregory A. Asst. Marine Biologist
B.S. 1965, California (Los Angeles); M.S. 1967, Hawaii; Ph.D. 1970, Arizona State
Akiyama, Gerald Research Associate
B.S. 1968, Hawaii
Balazs, George H. Jr. Marine Biologist
B.S. 1967, M.S. 1969, Hawaii
Baldwin, Wayne J. Asst. Marine Biologist
B.S. 1952, Humboldt State
*Banner, Albert H. Professor of Zoology
*Bitterman, M.E. Professor of Psychology
Boylan, David B. Asst. Marine Chemist
B.S. 1962, Rhode Island; Ph.D. 1966, Hawaii
Brock, Julie H. Asst. Prof. of Zoology
*Caperon, John Assoc. Prof. of Oceanog.
*Cattell, S. Allen Asst. Prof. of Oceanog.
*Chave, Keith E., Chmn. of Oceanography
*Clarke, Thomas, Asst. Prof. of Oceanog.
*Doty, Maxwell S. Prof. of Botany
*Grigg, Richard W. Asst. Marine Biologist
B.A. 1958, Stanford; M.S. 1964, Hawaii; Ph.D. 1969, California (San Diego)
*Gundersen, Kaare R., Prof. of Microbiology
*Haley, Samuel R., Asst. Prof. of Zoology
Hashimoto, David Y., Research Associate
B.S. 1963, Hawaii
*Herman, Louis M. Prof. of Psych.
*Jokiel, Paul L., Research Associate
B.S. 1964, Northwestern; M.S. 1971, Hawaii
*Kay, E. Alison, Prof. of General Science

Kinzie, Robert A. III, Asst. Prof. of Zoology
Kosaki, Thomas J., Jr. Pharmacologist
B.S. 1959, Utah
Leary, Daniel F., Asst. Marine Biologist
B.S. 1958, U.S. Naval Academy; M.S. 1967, Maryland; Ph.D. 1972, Auburn
Leis, Elizabeth W., Research Associate
B.S. 1971, Arizona
*Losey, George S., Asst. Prof. of Zoology
Maciolek, John A., Assoc. Zoologist
B.S. 1950, Oregon State; M.S. 1953, California; Ph.D. 1961, Cornell
May, Robert C., Asst. Marine Biologist
B.A. 1964, California (Berkeley); M.S. 1967, Hawaii; Ph.D. 1972, California (San Diego)
Miller, John M., Asst. Marine Biologist
A.B. 1961, Indiana; M.A. 1964, Texas; Ph.D. 1970, Wisconsin
*Murphy, Garth L., Prof. of Oceanog.
*Popper, Arthur N., Asst. Prof. of Zoology
Randall, John E., Affil. Faculty, Zoology
B.A. 1959, UCLA: Ph.D. 1955, Hawaii
*Reed, S. Arthur, Assoc. Prof. of Zoology
*Reese, Ernst S., Professor of Zoology
Smith, Stephen V., Research Associate
B.A. 1964, Texas; M.S. 1966, Northwestern; Ph.D. 1970, Hawaii
*Stevens, E. Donald, Asst. Prof. of Zoology
Sumida, Barbara Y., Research Associate
B.A. 1969, Hawaii
*Tester, Albert L., Sr. Prof. of Zoology
*Townsley, Sidney, Prof. of Marine Zoology
Wagner, Patricia J., Research Associate
B.S. 1967, Colorado C.
Watarai, Lloyd T., Research Associate
B.A. 1961, Southern California
*Young, Richard, Asst. Prof. of Oceanog.

Harold L. Lyon Arboretum

*Sagawa, Yoneo Director
Anderson, Donald, Technician (Retired)
*Arakagi, Minoru, Assoc. Plant Pathologist
*Bergquist, Richard R., Asst. Plant Pathologist
Bristol, Melvin L., Research Affiliate
Carlquist, Sherwin, Ph.D., Research Affiliate
Professor of Botany, Claremont Graduate School, California
*Carson, Hampton L., Geneticist

Clay, Horace F., Ph.D., Research Affiliate: Assoc. Dean, Special Programs, Leeward Community C.
*Criley, Richard A., Asst. Horticulturist
*Doty, Maxwell S., Botanist
*Friend, Douglas J.C., Botanist
Gillett, George W., Ph.D., Research Affiliate: Professor of Botany and Director of Botanical Gardens, California (Riverside)
*Hamilton, Richard A., Horticulturist
*Hartmann, Richard W., Assoc. Horticulturist
Research Units

Pacific Biomedical Research Center

- Greenwood, Frederick C. ...... Acting Director
- Allen, Richard D. Assoc. Prof. of Microbiol.
- Batkin, Stanley, Professor of Surgery
- Chungh, Chin Sik, Prof. of PH and Genet.
- Gibbons, Allan, Admin. Officer B.S. 1954, Temple
- Gibbons, Ian, Prof. of Biophysics B.S. 1954, Ph.D. 1957, Cambridge
- Hanna, Joel M., Asst. Prof. of Anthro.
- Hayashi, Edwin M., Technician
- Hong, Suk Ki, Prof. of Physiology
- Humphreys, Tom D., Assoc. Prof. of Biochem.
- Kane, Robert E., Assoc. Director S.B. 1953, MIT: Ph.D. 1957, Johns Hopkins
- Klemmer, Howard W., Microbiologist B.S. 1949, M.S. 1950, Saskatchewan: Ph.D. 1954, Wisconsin
- Norton, Ted R., Prof. of Pharmacology
- Palumbo, Nicholas, Prof. of Comparative Medicine
- Perri, Sam, Research Associate B.A. 1951, New York
- Rand, David, Research Associate B.B.A. 1958, Hawaii
- Smith, Richard M., Asst. Prof. of Physiology
- Szekeresz, Joseph, Research Associate B.A. 1967, Hawaii
- Whittow, G. Causey, Prof. of Physiol.

Population Genetics Laboratory

- Morton, Newton E. Director B.A. 1951, Hawaii; M.S. 1952, Ph.D. 1955, Wisconsin
- Harris, Donald, Research Mathematician and Computer Supv.: B.A. 1961, Hawaii
- Lew, Ruth, Specialist (Programmer)
- Yee, Shirley, Specialist (Programmer) B.A. 1965, M.S. 1971, Hawaii
- Grove, John, Asst. Researcher, Ph.D. 1961, Hawaii
- Rao, D.C., Asst. Researcher Ph.D. 1971, India

Visiting Investigators:
- Dr. Robert C. Elston, School of Public Health, U. of North Carolina
- Dr. Charles Smith, Dept. of Human Genetics, Western General Hospital, Scotland

Water Resources Research Center

- Lau, L. Stephen Director
- Burbank, Nathan C., Jr., Sanitary Engineer
- Chang, Jen Hu, Climatologist
- Chu, Ada, Research Associate
- Ekern, Paul C., Hydrologist
- Fok, Yu-Si, Assoc. Hydrologic Engineer
- Fujikawa, Roger, Research Associate B.S. 1960, M.S. 1966, Hawaii; Ph.D. 1970, Michigan
- Gossweini, Kishore, Research Associate
- Huang, Wen Yuan, Research Associate
- Klemmer, Howard, Microbiologist B.S. 1949, M.S. 1950, Saskatchewan Ph.D. 1954, Wisconsin
- Miller, Jacquelin, Research Affiliate Board of Water Supply, C & C: B.S. 1949, Pennsylvania; M.S. 1951, Chicago
- Mink, John, Research Affiliate
- Shultz, Cynthia, Research Associate
- Watanabe, Alan, Research Associate
- Yamauchi, Hiroshi, Assoc. Agr. Economist
- Yamauchi, Hiroshi, Assoc. Agr. Economist
- Young, Reginald H.F., Assoc. Sanitary Engineer

Social Welfare Development and Research Center

- Nagoshi, Jack T. Director B.A. 1964, Michigan; M.A. 1967, California
- Omura, Robert T., Asst. Director B.S. 1954, Springfield
- Stanley, Kathleen G., Program Spec. M.S.S. 1967, Syracuse

Pacific and Asian Linguistics Institute

- Topping, Donald M. Director
- Afendras, Evangelos A., Asst. Prof.
- Bickerton, Derek, Assoc. Prof.
- Hsu, Robert W., Asst. Prof.
- Peters, Ann Marie, Asst. Linguisit
- Reid, Lawrence A., Asst. Linguist
- Young, Reginald H.F., Assoc. Sanitary Engineer
ALLIED ACADEMIC FACILITIES

College of Arts and Sciences
Student Services Office

*Levy, Alfred J. .......... Associate Dean
*Bilsborrow, Eleanor J., Academic Adviser
Burchard, Elizabeth B., Academic Adviser; B.A. 1963, Texas; M.A. 1969, Hawaii
*Collier, Roy, Academic Adviser for Foreign Students
Hirai, Karen, Specialist, Services to Handicapped; B.A. 1969, Hawaii
Ito, Ann, Specialist, Services to Handicapped; B.A. 1966, Hawaii; M.S.W. 1969, Hawaii
*Koehler, Dorothy, Academic Adviser
Livingston, Mary, Academic Adviser
Merritt, Grace, Academic Adviser, Director of Kokua; B.A. 1941, Montana; M.A. 1949, Denver
Omori, Rachel T., Academic Adviser; B.Ed. 1944, 5 Yr. Cert. 1945, Hawaii
*Ozaki, Flora, Pre-Nursing Adviser
*Putman, Ed, Academic Adviser
Suttle, Joyce, Academic Adviser; B.Ed. 1959, M.A. 1962, Hawaii
*Wulff, Louise, Pre-Medical Adviser

Computing Center

Yee, Walter S. ............... Director
B.S. 1960, Hawaii
Arashiro, Daniel Y., Mgr. of Tech. Serv.: B.S. 1965, M.S. 1972, Hawaii
Carey, Helen, Computer Spec., M.A. 1969, Western Michigan
Higashi, Albert M., Asst. Director
B.S. 1963, Hawaii
Hu, Julie, Computer Spec., M.A. 1968, California (Berkeley)
Kotaka, James, Systems Programmer B.A. 1970, Hawaii
Leong, Diantha L., Systems Programmer B.A. 1965, Vassar; M.S. 1972, Hawaii
Motou, Warren, Fiscal Officer B.B.A. 1967, Hawaii
Nagamine, Sheila S., Computer Spec., M.A. 1969, Hawaii
Soong, William Y., Jr., Mgr. of Systems & Operations; B.A. 1964, Hawaii
Yonemoto, Edward M., Computer Spec., B.B.A. 1967, Hawaii

Office of Foreign Contracts

Ihara, Teruo .................... Director
Allen, Leslie R., Assoc. Prof. of Education
B.S. 1940, Hawaii; M.S. 1941, Temple; M.S. 1969, Hawaii
Butler, Lucius A., Jr., Assoc. Prof. of Education, Chief of Party
Daeufer, Carl J., Asst. Prof. of Education, Coordinator, UH-American Samoa Contract
Fultz, Jane N., Assoc. Prof. of Education
B.A. 1954, Concordia C.; M.S. 1969, Iowa State
B.S. 1937, M.B.A. 1969, Southern California
B.S. 1950, Southern California; M.Ed. 1970, Hawaii
Rantala, John W., Educ. Spec.
B.S. 1951, Stout State; M.Ed. 1953, Illinois
B.Ed. 1962, 5 Yr. 1963, Hawaii
B.A. 1971, Hawaii
Yamauchi, Shozun, Educ. Spec.
B.S. 1940, Hawaii; M.S. 1966, Illinois Wesleyan
Zane, Ah Chong, Educ. Spec.
B.A. 1942, Santa Barbara; M.Ed. 1947, Missouri

Course of Continuing Education and Community Service

Mayer, Frederick R. ....... Acting Dean
Sakata, Betsy Y., Asst. Dean B.Ed. 1953, M.Ed. 1968, Hawaii

Courses and Curricula

Yatsushiro, Tosio, Director
B.A. 1944, Redlands; Ph.D. 1953, Cornell
Grado, Fausto, Program Specialist
B.A. 1964, Hawaii
Tamaru, Jean Y., Program Specialist
B.A. 1968, Hawaii

Center for Governmental Development

Nagoshi, Kunio, Director (Acting)
B.A. 1953, M.A. 1954, Hawaii
Medeiros, Lionel, Program Specialist
B.A. 1959, M.A. 1962, Hawaii
Tuttle, Daniel W., Asst. Director
A.B. 1945, Illinois; M.A. 1947, Ph.D. 1964, Minnesota

Center for Labor-Management Education

Busch, Gary K., Acting Director
B.A. 1957, Rutgers

Community Services Program

Lawrence, James W., Director
B.A. 1953, M.A. 1959, Whittier

Brown, Harold P., Program Spec., Conferences; B.S. 1934, Michigan; M.A. 1955, Stanford
Carpenter, Thomas F., Program Spec., Speakers Bureau; B.A. 1957, Kansas State; M.A. 1960, Northwestern
Furstenberg, Barbara, Program Spec., Lyceum; B.S. 1961, M.A. 1964, Ph.D. 1968, Wisconsin
Hardin, Herb H., Training Coord., Civil Defense
Hew, Jerome Y.K., Director, Kapaa Project; B.A. 1964, Pacific Union C.
Lard, Harry E., Program Coord., Civil Defense; B.S. 1934, West Point
Miller, William R., Program Spec., Mass Media; B.A. 1954, Kenyon

Special Programs

Gray, Mary F., Program Spec., Study Abroad; A.B. 1947, Stanford; B.D. 1950, Pacific School of Religion; Ph.D. 1956, Hebrew Union
Pagliaro, Penny, Program Spec., Continuing Education for Women B.A. 1964, Earlham C.
Saunders, Marion G., Program Spec., Continuing Education for Women B.A. 1935, New Mexico; M.A. 1942, Southern California; M.A. 1960, Hawaii

Student Services

Fleece, Jeffrey A., Director
B.A. 1941, Central C. (Missouri); M.A. 1942, Vanderbilt; Ph.D. 1952, Iowa
Cooperative Extension Service

*Hundtoft, Elgin. Asst. Spec. in Agricultural Engineering
Ikedo, Warren S., County Extension Agent, Hilo: B.S. 1939, Hawaii
Ikehara, Dennis K., Asst. County Extension Agent, Kauai: B.S. 1961, Hawaii

*Ishida, Jack T., Specialist in Ag. Economics
Ito, Mable I., Extension Home Economist, Maui: B.S. 1941, 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, Asst. County Extension Agent, West Oahu: B.S. 1955, Hawaii; M.S. 1968, Oregon State
Kohashi, Kikuye. Extension Home Economist, Hilo: B.S. 1950, Hawaii

*Koshi, James H., Area Spec. in Dairy Sci.
Krakauer, Lucile B., Asst. Spec. in Extension Agricultural Information B.A. 1960, California (Berkeley)
LaPlante, Albert A., Jr., Asst. Spec. in Entomology: B.S. 1944, Massachusetts; Ph.D. 1949, Cornell
Lenk, Sachiko, Extension Home Economist, Kamuela: B.S. 1949, Hawaii; M.S. 1958, Pennsylvania State

*Martinez, Albert P., Asst. Spec. in Plant Pathology
Matsumoto, Eleanor A., Asst. Spec. in Home Economics: B.S. 1941, Hawaii; M.S. 1953, Columbia
McOmber, Phyllis Ann, Clothing Specialist: B.S. 1958, Florida State; M.S. 1968, Iowa

Moser, Roy, Spec. in Food Technology B.S. 1947, M.S. 1949, Massachusetts
Nakagawa, Yukio, Spec. in Horticulture: B.S. 1940, Hawaii
Nakamura, Charlotte C., Asst. Extension Home Economist, Maui B.S. 1966, Hawaii; M.S. 1968, Purdue

Nakano, Richard, Assoc. County Extension Agent, Kamuela: B.S. 1962, M.S. 1964, Hawaii
Nelson, Donald P., County Extension Agent, Hilo: B.S. 1963, Iowa; State: M.S. 1970, Kentucky
Ohama, Masako, Asst. Extension Home Economist, Kauai: B.S. 1947, Hawaii
Okagawa, Tomoyuki, Assoc. County Extension Agent, East Oahu: B.S. 1954, Hawaii
Okazaki, Dora T., Assoc. Extension Home Economist, Hilo: B.S. 1959, Stout State
Ota, Robert M., Asst. Dean, Hilo B.S. 1950, Colorado State; M.S. 1959, Purdue

*Rauch, Fred D., Asst. Spec. in Horticulture
Reid, Vera Y., Asst. Spec. in Housing & Home Furnishings: B.S. 1942, Auburn: M.S. 1959, Florida State
Sakuma, Mabel Y., Asst. Extension Home Economist, Maui: B.S. 1956, Hawaii
Shigenaga, Roy S., Assoc. County Extension Agent, Hilo: B.S. 1957, Hawaii
Shigeta, Daniel T., County Extension Agent, Maui: B.S. 1950, Hawaii; M.Ed. 1964, Colorado
Shimabukuro, Betty Z., Assoc. State Leader, 4-H—youth: B.S. 1946, Hawaii; M.S. 1953, Michigan
Shirakawa, Takumi, County Extension Agent, Naalehu: B.S. 1948, Hawaii; M.S. 1963, Michigan State
Takaba, Beverly I., Asst. Extension Home Economist (Nutrition), Hilo B.S. 1967, Whittier
Takeguchi, Elsie F., Asst. Extension Home Economist, East Oahu B.S. 1964, Iowa State
Tanaka, Tokushi, Assoc. Area Spec. in Poultry Science: B.S. 1948, M.S. 1953, Hawaii
Telfaw, Fortunato G., Assoc. Spec. in Visual Aid: B.S. 1927, Hawaii
Thompson, Betty Jo, Extension Home Economist, Hilo: B.S. 1953, Oklahoma
Vasold, M., Amalie, Assoc. Spec. in Youth Prog.: B.S. 1940, Central Michigan: M.S. 1944, Columbia

*Wilson, C. Pearis .......... Director
Goodell, Dale N. ....... Assoc. Director
B.S. 1942, Iowa State; M.S. 1952, Minnesota

Alexander, Bernardine, Media Specialist
B.S. 1948, Queens C.; M.Ed. 1969, Hawaii

Anderson, Margaret E., Asst. Extension Home Economist, West Oahu: B.S. 1960, Los Angeles State

Arakawa, Bernice. Assoc. Extension Home Economist, West Oahu: B.S. 1964, Hawaii

Au, Frances, Assoc. Extension Home Economist, South Oahu: B.S. 1964, Hawaii

BERRY, Eugenia, Extension Home Economist, Kauai: B.S. 1947, M.S. 1957, Kentucky

Blalock, John R., County Extension Agent, Kauai: B.S. 1946, M.S. 1949, Massachusetts

Bleiker, Peggy A., Program Leader. Young Families: B.S. 1964, New Mexico State; M.S. 1968, Tennessee


Chong, Wing You, County Extension Agent, Hilo: B.S. 1943, California; M.S. 1958, Maryland

*DALE, Verda M., Spec. in Home Economics and Chairman


DOL, M. James, County Extension Agent, Maui: B.S. 1942, Hawaii

Donoho, Harry R., Area Spec. in Livestock Management: B.S. 1949, Kentucky; M.S. 1951, Ph.D. 1955, Ohio State

DOue, Stephen M., Assoc. Spec. in Agricultural Economics: B.S. 1947, M.S. 1959, Hawaii

Fujimoto, Frederick W., Assoc. County Extension Agent, Molokai: B.S. 1953, M.S. 1969, Hawaii

Garcia, Clarence W., Assoc. County Extension Agent, Kauwela: B.S. 1957, Hawaii; M.A. 1968, Oregon

Gitlin, Harris M., Assoc. Spec. in Agricultural Engineering: B.S. 1940, B.Agr. Engr. 1941, Ohio State; M.S. 1962, Michigan


Higaki, Tadashi, County Extension Agent, Hilo: B.A. 1938, M.S. 1961, Hawaii


Hori, Ted M., Asst. County Extension Agent, Kula: B.S. 1955, Hawaii

*Hugh, Williams I., Assoc. State and Area Swine Specialist
Watanabe, Roger T., Jr. Spec. in Soil Management; B.S. 1956, Hawaii

Watanabe, Yoshio, Assoc. County Extension Agent, Hilo; B.S. 1958, Hawaii


*Watson, Donald P., Spec. in Horticulture

*Weeks, Shirley, Spec. in Human Development & Human Relations

Wetters, Doris E., Asst. Dir. of Human Resources Development; B.S. 1951, Ball State; M.S. 1958, Ohio State; Ed.D. 1967, Pennsylvania State

Wong, Rose K., Asst. Extension Home Economist, Wahiawai; B.S. 1970, Kansas State

Yamaguchi, Rokuro, Assoc. Spec. in Agricultural Economics; B.S. 1942, Hawaii; M.S. 1954, Missouri

Yamamoto, Tom, Assoc. County Extension Agent, Hilo; B.S. 1957, M.S. 1964, Oregon State

Yee, Warren Y.J., Assoc. Spec. in Horticulture; B.S. 1942, Hawaii; M.S. 1959, Purdue

Yonamine, Charles N., County Extension Agent, West Oahu; B.S. 1951, California State Polytech

Yoshida, Richard S., Assoc. County Extension Agent, South Oahu B.S. 1958, M.S. 1969, Hawaii

Yoshino, Rhoda M., Extension Home Economist, South Oahu; B.S. 1963, Hawaii; M.S. 1970, Maryland

Drama and Theatre

Caldeira, Arthur B., Asst. Spec. in Drama and Theatre; B.A. 1951, Hawaii

Miji, Takeo, Asst. Spec. in Drama and Theatre; B.A. 1955, M.A. 1970, Hawaii

Environmental Center

*Cox, Doak C. ..................... Director
*Johnson, Jerry M. ........ Asst. Director
*King, Irvin, Asst. Prof. of Education
*Kleinjans, Edith K., Specialist A.B. 1943, Hope C.; M.A. 1944, Michigan
*Krause, Loretta, Assoc. Prof. of Speech & Education & Asst. Director

Ombudsman’s Office

James, Charles S. .......... University Ombudsman; B.A. 1947, California

Curriculum Research and Development Group
(University Laboratory School)

*King, Arthur R., Jr. .......... Director
*Allen, Leslie R., Assoc. Prof. of Education
*Belshe, Mirella M., Assoc. Prof. of Education
*Bennett, Hannah Lou, Assoc. Prof. of Education

*Burton, Leon H., Assoc. Prof. of Education

Cornell, Lois J., Specialist B.A. 1963, Pacific Lutheran; M.Ed. 1971, Hawaii
*Curtis, Delores M., Assoc. Prof. of Education
*Daley, Gloria T., Specialist B.A. 1950, UCLA; M.A. 1964, Stanford

Demanche, Edna Louise, Education Assoc. B.S. 1940, St. Vincent; M.S. 1964, Notre Dame

Everist, Gary, Education Assoc. B.A. 1964, Washington

Falk, Ruth, Specialist Nurse’s Trng. 1958, Anchor Hosp. Sch. of Nsg., St. Paul

Fetterman, Alan, Specialist B.M. 1956, Miami; M.A. 1966, T.C., Columbia

Fetterman, Donna, Lecturer B.S. 1957, Westchester State Teacher’s C.: M.A. 1972, Hawaii

Gordon, Ira, Education Assoc. B.S. 1967, Rollins

Goris, Betty Lou C., Education Assoc. B.A. 1942, California (Berkeley); Prof. Cert. 1963, Hawaii

Greenberg, Marvin, Assoc. Prof. of Education

Hampson, Susan, Specialist B.S. 1965, McGill


Higa, Harold T., Asst. Prof. of Education


Johnson, Lynne, Specialist B.A. 1966, Colorado C.


*King, Irvin, Asst. Prof. of Education

Kleinjans, Edith K., Specialist A.B. 1943, Hope C.; M.A. 1944, Michigan


*Krause, Loretta, Assoc. Prof. of Speech & Education & Asst. Director


Kuroda, Kathleen T., Education Assoc. B.F.A. 1971, Hawaii

*Kyselka, Will, Assoc. Prof. of Education

Lani, David, Education Assoc. B.A. 1966, M.A. 1968, Hawaii

Lee, Kathleen, Education Assoc. B.S. 1969, Hawaii

*Leib, Edna Lee, Assoc. Prof. of Education

Matsuda, Laura, Specialist B.A. 1972, Hawaii

Mitchell, Ronald L., Specialist A.B. 1950, Illinois; M.A. 1962, Claremont

Nishimura, Kathleen, Education Assoc. B.Ed. 1969, M.Ed. 1971, Hawaii

Nunes, Shilo S., Specialist B.A. 1938, 5th Yr. Cert. 1939, Hawaii


*Patterson, Harry, Act. Asst. Prof. of Education


*Portwood, Charles, Asst. Prof. of Education

Pottenger, Francis, Assoc. Prof. of Education

Read, Vernon, Specialist B.M. 1958, So. California; M.M. 1959, Rochester; D.M.A. 1966, USC

*Reed, Helen, Asst. Prof. of Education

*Rodgers, Theodore, Assoc. Prof. of Psycholinguistics


*Sanborn, Donald, Assoc. Prof. of Education

Schumaker, Leon, Specialist B.A. 1960, California (Santa Barbara); M.A. 1962, UCLA

Snook, Joan, Specialist B.S. 1970, M.S. 1973, Hawaii

Stevens, Jeanne E., Education Assoc. B.Ed. 1967, Hawaii


*Trubitt, Anita, Instr. in Education


Walsh, Caren V., Education Assoc. B.Ed. 1967, M.Ed. 1969, Hawaii

Watson, Roger, Specialist B.A. 1962, Union; M.A. 1968, Stanford

*Whitman, Nancy C., Assoc. Prof. of Education

Woodward, Mitsuyo, Education Assoc. B. Law 1956, Chuo U.; Prof. Diploma 1970, Hawaii

ALLIED ACADEMIC FACILITIES

255


Tsui, Mille J., Asst. Lib. Spec., Cataloging; B.A. 1954, M.L.S. 1955, California (Berkeley)


Yee, Wai-Chee, Asst. Lib. Spec., Cataloging; B.A. 1938, Hawaii; B.S.L.S. 1939, Columbia


Young, Verna H.F., Asst. Lib. Spec., Cataloging; B.A. 1962, Chaminade; M.L.S. 1963, California (Berkeley)

School of Public Health

Asuncion, Kahaunaniomaunakea, Spec. 1

*Bertellotti, Ernest E., Spec. in PH

Boylan, Gloria, Asst. Spec. in PH B.A. 1964, Rhode Island; M.Ed. 1966, Hawaii

Chaine, Jean-Paul, Spec. 2 B.A. 1964, Connecticut; M.S. 1969, Hawaii

Geronimo, Conrad, Tech. 2; B.S. 1964, Philippine C of Criminology

Higuchi, Asa, Asst. to Dean, Business Affairs; B.S. 1949, M.S.W. 1953, Hawaii

Hiraoka, Carol K., Research Assoc. 2 B.A. 1963, M.A. 1966, Hawaii

Ho, Claire H., Asst. Spec. in PH B.S. 1958, Oregon State; M.S. 1969, Hawaii


Kada, Jimmy M., Spec. 4 (Trust Territory); B.S. 1957, M.P.H. 1965, UCLA

Kaneshiro, Cynthia K., Research Assoc. 2; B.Ed. 1971, M.S. 1972, Hawaii

Kimura, Leonard, Admin. Officer 1 B.B.A. 1964, Hawaii

Kumasaka, Linda, Research Assoc. 1 B.A. 1967, Hawaii

Lane, Margaret, Spec. 2; B.A. 1963, New Brunswick; M.S. 1967, Simmons

Lau, Linda, Research Assoc. 1 B.A. 1970, M.S. 1971, Hawaii

Little, Marjorie A., Spec. 2 B.A. 1957, Arizona


Morikawa, Ronald, Admin. Officer 2 B.B.A. 1953, Hawaii

O'Reilly, Katherine A., Asst. Spec. in Public Health; B.S. 1963, Tufts; M.P.H. 1969, Hawaii

Ryder, Brooks, Spec. in PH (Indonesia) A.B. 1940, Harvard; M.D. 1943, Tufts; M.P.H. 1948, Harvard

Stewart, Cynthia, Assoc. Spec. in PH B.S.N. 1935, Syracuse; M.P.H. 1965, Michigan

Stranger, Sharyn F., Spec. 4; B.A. 1967, California (Berkeley); M.P.H. 1972, Hawaii

Suehiro, Richard Y., Spec. in PH B.A. 1949, Hawaii; M.A. 1951, Indiana; M.P.H. 1962, Michigan

Tatsuta, Winifred, Spec. 1 B.A. 1970, Hawaii

Terauchi, Mildred M., Asst. to Dean, Student Affairs; B.A. 1960, Hawaii; M.P.A. 1961, Syracuse

Tilton, Floyd H., Spec. in Public Health; A.B., M.A. 1950, UCLA; M.D.C. 1954, McGill; M.P.H. 1963, California (Berkeley)

*Wiederholt, Ned B., Spec. in PH

School of Nursing

Beckstrom, Wilhelmina, Specialist B.S. 1941, Washington

Edo, Gilbert, Multi-Media Specialist B.S. 1967, New Mexico Highlands; M.Ed. 1968, Indiana

*Ozaki, Flora T., Asst. Prof. of Nursing

Test, Lawrence, Counselor B.S. 1962, Ursinus C.; M.S. 1964, George Washington

Foreign Language Laboratories

Chang, Gerald K. ... Acting Director B.A. 1965, M.A. 1968, Hawaii

Aspinwall, A. Lauren, Lab Asst. B.A. 1967, 5 Yr. CPC 1970, Hawaii

Drake, Sally H., Programs Coord./Librarian B.S. 1957, Indiana State; M.L.S. 1969, Hawaii

Inatsuka, Nancy C., Lab Asst. B.A. 1971, Hawaii

Office of University Relations and Development

Smith, Frederick Y. .......... Director B.S. 1950, M.S. 1951, Northwestern

McDonald, Charles S. .......... Associate Director; B.S. 1949, Oregon; M.A. 1964, Hawaii
EAST-WEST CENTER STAFF

Kleinjans, Everett ................................................., Chancellor
A.B. 1943, Hope C.; M.A. 1948, Ph.D. 1958, Michigan

*Browne, John A., Deputy Chancellor
Schramm, Wilbur, Director, E-W Communication
Institute: A.B. 1928, Marietta; A.M. 1930, Harvard;
Ph.D. 1932, Iowa

Bickley, Verner C., Director, E-W Culture Learning

*Demeny, Paul, Director, E-W Population Institute
Alba, Manuel, Director, E-W Technology & Development
Institute: CPA, A.A. 1955, B.S. 1957, Philippines:
M.B.A. 1961, Minnesota; Ph.D. 1967, Northwestern

Makey, Sumi, Executive Officer of Open Grants, Open
Grants Program: B.A. 1948, Hawaii; M.A. 1951,
Columbia

Katekaru, Ray T., Director, Contract Training
B.S. 1940, Wisconsin State

Boggs, Ronald D., Director of Administration
A.B. 1962, California State C. (Long Beach)

Wheaton, William L., Director, Participant Services

Hewett, Robert B., Director, Publications and Public
Affairs

Cl—Communication Institute: CLI—Culture Learning
Institute: Fl—Food Institute: OGP—Open Grants
Programs: PI—Population Institute: TDI—Technology
and Development Institute: PS—Participant Services:
OCT—Office of Contract Training: PPAO—Publications
and Public Affairs Office

Adamson, Keith E., Exec. Officer for
Administration, PI: B.A. 1943,
George Washington

Adehikary, Ronny, Jr. Researcher, CI
B.A. 1971, New York: M.P.S. 1972,
Cornell

Adler, Peter S., Asst. Coordinator,
Participant Activities, PS: B.A.
1966, Roosevelt: M.S. 1970, Missouri

Ajirogi, Harold H., Sr. Program
Officer, TDI: B.S. 1949, Brigham
Young; M.Ed. 1957, Illinois

Albores, Sonia C., Research Asst., PI
B.A. 1967, U. of San Carlos:
M.A. 1971, Hawaii

Allison, Frances H., Community
Relations Officer, PS

Anzai, Lyn F., Assoc. Program Officer,
CLI: B.A. 1965, Mills C.:
M.A. 1968, Hawaii

Arnold, Carol W., Resource Materials
Spec., CI: B.Mus. 1953, New
England Conservatory of Music:
M.Mus. 1961, George Peabody C.:
M.L.S. 1971, Hawaii

Arnold, Fred S., Jr. Researcher, PI
A.B. 1967, Harvard: M.A. 1971,
Ph.D. 1972, Michigan

Bellinger, Roger S., Assoc. Program
Officer, OCT: B.A. 1956, Michigan
State; M.Ed. 1967, Hawaii

Bennington, Jeanette, Alumni Liaison
Officer, PS: B.S. 1957, Western
Reserve & Cleveland Institute of Art;
M.A. 1969, Hawaii

Bhuiyan, Sadiqu I., Asst. Researcher,
PI: B.S. 1963, E. Pakistan U. of
Engineering & Technology; M.S. 1968,
Ph.D. 1971, Texas A&M

Bloedon, Robert V., Asst. Researcher,
1970, Hawaii

Brislin, Richard W., Asst. Researcher,
CLI: B.A. 1966, U. of Guam;
M.S. 1967, Ph.D. 1969, Pennsylvania
State

Buck, Elizabeth B., Jr. Researcher,
1967, Hawaii

Burian, Fredrich J., Sr. Program
Officer, TDI: B.A. 1963, M.A.
1971, Hawaii

Chakrabarti, Alok K., Asst. Researcher,
TDI: I.Sc. 1959, Calcutta U.:
B.Ch.Ed. 1963, Jadavpur U.: M.B.A.
1966, Indian Institute of Management,
Ahmedabad: Ph.D. 1972, Northwestern

*Chao, Dennis N.W., Asst. Researcher,
PI

*Chapman, Murray T.. Asst. Researcher,
PI

*Cho, Lee-Jay, Asst. Director for
Professional Study & Training, PI

Choe, Minja K., Jr. Researcher, PI
B.S. 1983, Yonsei U.: M.S. 1966,
Chicago

Danzer, Sanford E., Assoc. Researcher,
CI: B.A. 1961, Arizona; M.D.
1965, Baylor Medical School

Dolan, Virginia, Sr. Admin. Asst.,
PI: B.A. 1935, Hawaii

Durham, Jack L., Admissions Officer,
PS: B.A. 1968, M.A. 1969,
Hawaii

Fawcett, James T., Asst. Director for
Graduate Study/Assoc. Researcher,
PI: B.S. 1960, Pennsylvania State:
M.D. 1961, Yale: Ph.D. 1965,
California (Berkeley)

Feney, Griffith M., Asst. Researcher,
PI: B.S. 1968, Antioch C.: M.A.
1970, Ph.D. 1972, California
(Berkeley)

Feltz, William E., Resource Materials
Spec., CLI: B.A. 1966, Lewis &
Clark C.: M.A. 1970, Hawaii

*Finney, Ben R., Assoc. Researcher, TDI

Fujikawa, Wallace A., Housing
Manager, Office of Administration

*Fuller, Gary A., Asst. Researcher, PI

Gardner, Robert W., Jr. Researcher, PI
B.A. 1962, Stanford: M.A. 1969,
California (Berkeley)

Goodman, Louis J., Asst. Director for
Education and Training/Researcher,
TDI: S.B. 1947, MIT: M.S.
1949, Harvard

Gould, Miriam L., Program Asst., OGP
B.A. 1940, Whittier C.: M.A. 1941,
Columbia U. Teachers C.

Green, Donald G., Assoc. Researcher,
PI: B.S. 1953, M.S. 1954, Iowa
State: Ph.D. 1964, Cornell

Gregg, Lucien A., Consultant, PI
B.S. 1933, M.D. 1934, Pittsburgh

Gugelyk, Ted M., Sr. Program Officer,
CI: B.A. 1963, M.A. 1967, Hawaii

Hahn, Young-Whan, Asst. Researcher,
National U.: Ph.D. 1971, Pittsburgh

Hamada, Edward M., Controller, Office
of Administration: B.B.A. 1968,
Hawaii

Hansen, Gary E., Asst. Researcher/Slr.
Prog. Officer, TDI: B.S. 1961,
Oregon: M.P.I.A. 1963, Pittsburgh:
Ph.D. 1971, California (Berkeley)

Harada, Irene J., Sr. Admin. Asst.,
OCT: B.B.A. 1966, Hawaii

Harris, Alice D., Resource Materials
Spec., PI: B.A. 1951, Russel Sage
C.: M.S. 1956, Drexel Institute
Harris, M. Jane, Coordinator, Participiant Activities, PS; B.A. 1961, Iowa; Cert. in Bus. Adm. 1962, Harvard-Radcliffe
Hatch, Daniel L., Participiant Logistic Services Officer, Office of Administration; B.A. 1966, California (Berkeley)
Hayden, Jay R., Data Processing Officer, Office of Administration B.A. 1962, M.A. 1964, Hawaii

*Miga, Masanori, Researcher, CLI

Hoke, Kay H., Systems Spec., Office of Administration; B.S. 1957, Arizona State

Hong, Vera Z., Sr. Admin. Asst., CI B.A. 1947, Hawaii

*Howard, S. Alan, Researcher, PI
Howard, Kajorn L., Jr. Researcher, PI B.S. 1959, Chulalongkorn; M.S. 1966, Hawaii

Hoyer, Michael Ann, Research Asst., PI B.A. 1972, Hawaii


Ikeda, Jared S., Administrative Services Officer, FI; B.B.A. 1968, Hawaii

Iwamura, James K., Admin. Analyst, Office of Administration; B.A. 1966, Hawaii; M.A. 1972, Oklahoma

Jamieson, Virginia A., Publications Officer, CI; B.A. 1958, Dunbarton C.


Kato, Hidetoshi, Researcher, CI B.A., M.A. 1952, Hitotsubashi U.

Kaya, Robert I., Jr. Researcher, PI B.S. 1970, Dayton


Kokubun, Herbert T., Special Asst. for Personnel & Budget, Office of Administration; B.A. 1952, M.A. 1968, Hawaii


Kusuha, Harriet A., Sr. Admin. Asst., TDI

Lee-Kai, Fannie, Sr. Admin. Asst., FI

Lester, Mark P., Researcher, CLI B.A. 1956, Pomona: M.A. 1961, Ph.D. 1964, California (Berkeley)

*Lim, Maggie, Assoc. Specialist, CI

*Long, Herbert D., Assoc. Researcher & Coord., Office of the Chancellor

Mad, Kenzi L., Assoc. Program Officer, CLI: B.Ed. 1971, U. of Guam

*Matsumoto, Y. Scott, Researcher, PI

McNicoll, Geoffrey, Asst. Researcher, PI; B.S. 1964, Melbourne: M.A. 1971, Ph.D. 1972, California (Berkeley)

*Meyerson, Harvey E., Project Coord., CI


Miller, Allan W., Information Spec., PPAO: B.A. 1965, Ohio State

Mizu, Evelyn Y., Asst. Controller, Office of Administration


Muramoto, Roy H., Assoc. Program Officer, OCT: B.A. 1965, Hawaii

Nakamura, Rose S., Assoc. Program Officer, OGP: B.S. 1950, Hawaii


Nishida, Jeanne E., Information Spec., PPAO: B.S. 1968, Northwestern

Nordyke, Eleanor C., Jr. Researcher, PI; B.S. 1950, Stanford; M.P.H. 1969, Hawaii


*Overbeek, Johannes, Asst. Researcher, PI

*Palmore, James A., Jr., Asst. Director for Institutional Cooperation/Assoc. Researcher, PI

Palmore, Susan P., Assoc. Program Officer, PI; B.A. 1962, M.A. 1964, Hawaii

*Park, Chai Bin, Researcher, PI

*Pirie, Peter N.D., Researcher, PI

Punu, Joanne K., Student residence Head, Office of Administration B.A. 1969, Pittsburgh


Retherford, Robert D., Asst. Researcher, PI; B.A. 1964, M.A. 1966, Ph.D. 1970, California (Berkeley)

*Richards, John A., Asst. Researcher, TDI


Ring, Gordon R., Staff Aide to Chancellor; B.A. 1963, Hamilton C.: M.A. 1967, Hawaii

Roberts, Dorothy E., Field Liaison Officer, PS; B.S. 1930, Iowa; B.Ed. 1965, Michigan State

Robert, Dorothy E., Field Liaison Officer, PS; B.S. 1930, Iowa; B.Ed. 1965, Michigan State

Rokos, Dorothy E., Field Liaison Officer, PS; B.S. 1930, Iowa; B.Ed. 1965, Michigan State

Seichi, Judith, Asst. Personnel Officer, Office of Administration

Shaw, Cuyler E., Sr. Program Officer, CI: A.B. 1963, Yale; L.L.B. 1966, Harvard; M.A. 1971, Yale


Starr, Max W., Systems Spec., Office of Administration

Staub, William J., Assoc. Researcher, FI; B.S.A 1960, M.S. 1966, Georgia; Ph.D. 1971, Missouri

Tachibana, Allen E., Production Manager, PPAO

Tama, Osamu, Asst. Program Officer, CLI: B.A. 1963, Hawaii

Tanioka, Sandra L., Researcher, PI B.A. 1967, M.S. 1968, Hawaii


Tatsuno, Hozumi, Sr. Admin. Asst., CLI

Thompson, James H., Asst. Researcher, Office of Administration B.S.E.E. 1972, Hawaii

Trifonovitch, Gregory J., Sr. Program Officer, CLI: A.B. 1960, Wheaton C.


Urley, Kathryne L., Asst. Community Relations Officer, PS B.S. 1947, Manchester

Unserasami, Michael T., Finance Officer, Office of Administration; B.A. 1968, M.B.A. 1970, Hawaii


Walsh, John E., Researcher, CLI B.A. 1945, Notre Dame; Ph.D. 1953, Yale


Ward, Sandra E., Sr. Publications Officer, PI; B.A. 1960, Oberlin C.

White, Margaret E., Assoc. Program Officer, CI: B.A. 1968, Marquette; M.A. 1970, Hawaii

Worrall, Robert P., Assistant Director/Researcher, CI: B.S. 1947, Ohio State; M.S. 1953, Wisconsin; Ph.D. 1965, Michigan State


Yoshizumi, Dorothy K., Sr. Admin. Asst., PI

Yount, Barbara W., Assoc. Program Officer, CI: B.A. 1959, Illinois; M.A. 1961, Columbia; Foreign Student Dipl. 1961, Strasbourg

Zeug, Mark E., Publications Officer, PPAO: B.A. 1965. C. of St. Thomas; M.A. 1971, Maryland

Zuidema, Lawrence W., Sr. Program Officer, FI: B.S. 1962, Georgia; M.S. 1964, Cornell
## UNIVERSITY OF HAWAI'I AT MANOA
### SUMMARY OF ENROLLMENT, 1972-1973

### REGULAR CREDIT ENROLLMENT

<table>
<thead>
<tr>
<th>Degree and Diploma Candidates</th>
<th>1st Sem.</th>
<th>2nd Sem.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Graduate Division</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doctor's Candidates</td>
<td>800</td>
<td>789</td>
</tr>
<tr>
<td>Master's Candidates</td>
<td>2,759</td>
<td>2,765</td>
</tr>
<tr>
<td></td>
<td>3,559</td>
<td>3,554</td>
</tr>
<tr>
<td><strong>College of Arts and Sciences</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seniors</td>
<td>1,951</td>
<td>1,694</td>
</tr>
<tr>
<td>Juniors</td>
<td>2,609</td>
<td>2,407</td>
</tr>
<tr>
<td>Sophomores</td>
<td>2,931</td>
<td>2,907</td>
</tr>
<tr>
<td>Freshmen</td>
<td>2,806</td>
<td>2,849</td>
</tr>
<tr>
<td></td>
<td>10,297</td>
<td>9,857</td>
</tr>
<tr>
<td><strong>College of Business</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seniors</td>
<td>665</td>
<td>542</td>
</tr>
<tr>
<td>Juniors</td>
<td>748</td>
<td>732</td>
</tr>
<tr>
<td>Sophomores</td>
<td>513</td>
<td>533</td>
</tr>
<tr>
<td>Freshmen</td>
<td>385</td>
<td>383</td>
</tr>
<tr>
<td></td>
<td>2,311</td>
<td>2,190</td>
</tr>
<tr>
<td><strong>School of Travel Industry</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seniors</td>
<td>121</td>
<td>91</td>
</tr>
<tr>
<td>Juniors</td>
<td>134</td>
<td>119</td>
</tr>
<tr>
<td>Sophomores</td>
<td>118</td>
<td>131</td>
</tr>
<tr>
<td>Freshmen</td>
<td>129</td>
<td>117</td>
</tr>
<tr>
<td></td>
<td>502</td>
<td>458</td>
</tr>
<tr>
<td><strong>College of Education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professional Diploma Candidates</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seniors</td>
<td>376</td>
<td>329</td>
</tr>
<tr>
<td>Juniors</td>
<td>990</td>
<td>836</td>
</tr>
<tr>
<td>Sophomores</td>
<td>731</td>
<td>825</td>
</tr>
<tr>
<td>Freshmen</td>
<td>18</td>
<td>98</td>
</tr>
<tr>
<td></td>
<td>2,115</td>
<td>2,088</td>
</tr>
<tr>
<td><strong>College of Engineering</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seniors</td>
<td>305</td>
<td>258</td>
</tr>
<tr>
<td>Juniors</td>
<td>302</td>
<td>278</td>
</tr>
<tr>
<td>Sophomores</td>
<td>210</td>
<td>182</td>
</tr>
<tr>
<td>Freshmen</td>
<td>234</td>
<td>206</td>
</tr>
<tr>
<td></td>
<td>1,051</td>
<td>924</td>
</tr>
<tr>
<td><strong>School of Medicine</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical Students</td>
<td>134</td>
<td>133</td>
</tr>
<tr>
<td>Seniors</td>
<td>81</td>
<td>77</td>
</tr>
<tr>
<td>Juniors</td>
<td>50</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>265</td>
<td>270</td>
</tr>
</tbody>
</table>

### School of Nursing

<table>
<thead>
<tr>
<th></th>
<th>1st Sem.</th>
<th>2nd Sem.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seniors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Juniors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sophomores</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freshmen</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### College of Tropical Agriculture

<table>
<thead>
<tr>
<th></th>
<th>1st Sem.</th>
<th>2nd Sem.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seniors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Juniors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sophomores</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freshmen</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### East-West Center Students

**On Field Education**

<table>
<thead>
<tr>
<th></th>
<th>1st Term</th>
<th>2nd Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asians</td>
<td>40</td>
<td>17</td>
</tr>
<tr>
<td>Americans</td>
<td>42</td>
<td>19</td>
</tr>
</tbody>
</table>

**Continuing Education Credit Program**

<table>
<thead>
<tr>
<th></th>
<th>First</th>
<th>Second</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Term</td>
<td>2,333</td>
<td>2,254</td>
</tr>
<tr>
<td>Second Term</td>
<td>1,832</td>
<td>1,958*</td>
</tr>
<tr>
<td>Estimated 21/23/73</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fall</td>
<td>2,391</td>
<td>2,512*</td>
</tr>
<tr>
<td>Spring</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Summer Session 1972

<table>
<thead>
<tr>
<th></th>
<th>1st Term</th>
<th>2nd Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical Students</td>
<td>11,711</td>
<td>5,764</td>
</tr>
</tbody>
</table>
Index

Abbreviations in course descriptions, 3
Absence from classes, 29
Academic advising
   (See individual colleges)
Academic chairs, 218
Academic distinction, 36
Academic failure, 32
Academic regulations, 23-32
Academic year, 8
Academy of Arts, Honolulu, 11
Accounting, courses in, 118
Accreditation of the university, 7
Activities for students, 12
Administrative intern program, 131
Administrative officers, 215
Administrative organization, 8
Admission information, 24-28
   (See also individual colleges)
Advance tuition payment, 20
Advanced placement exams, 31
Advisers (See individual colleges)
Advisory Council on International Relations, 11
Aerospace studies program, 39
Affiliate graduate faculty, 245
Agricultural biochemistry, courses in, 186
Agricultural economics, courses in, 186
Agricultural engineering, courses in, 187
Agricultural Experiment Station, 203, 247
Agriculture, College of Tropical, 184-201
Agriculture, courses in, 186
Agriculture curricula, 185
Agronomy, courses in, 187
Allied academic facilities, 252
Allied medical sciences, 161
American studies, courses in, 51
Anatomy, courses in, 163
Anesthesiology, 164
Animal sciences, courses in, 189
Anthropology, courses in, 53
Application fee, 24
Application for admission, 24
Application for degree, 36
Applied music, courses in, 101
Aquarium, 11
Arabic, 91
Arboretum, 10, 253
Architecture, courses in, 54
Armenian, 91
Art, courses in, 57
Arts and Sciences, College of, 44-115
Asian studies, courses in, 59
Associated Students of the University of Hawaii, 12
Astronomy and physics, courses in, 106
Athletics and sports, 13
Attendance at classes, 29
Audio-visual services, 10
Auditors, 23, 29
Avestan, 91
Awards and prizes, 18
Bachelor's degrees, programs leading to, 33
   (See also individual colleges)
Balinese, 91
Batak, 91
Bengali, courses in, 91
Biochemistry, courses in, 164
Biological sciences, 60
Biology, courses in, 60
Biomedical Research Center, 10, 252
Biomedical science, courses in, 165
Biophysics, courses in, 164
Bisayan, 91
Bishop Museum, 11
Board of regents, 8, 215
Botany, courses in, 60
Budget, student expenses, 15
   (See also Tuition and fees)
Bureau of Student Activities, 12
Burmeese, 91
Business affairs office, 217
Business Administration, College of, 116-125
Business analysis and statistics, courses in, 120
Business economics, courses in, 121
Business education program, 129
Business, graduate courses in, 125
Business law, courses in, 120
Cafeterias, 15
Calendar, University, 2
Cambodian, courses in, 91
Campus Center Board, 12
Campus housing, 15
Campuses of the University, 7
Career planning office, 14
Center for Engineering Research, 151, 247
Center for Governmental Development, 206
Center for Labor-Management Education, 206
Ceramics, courses in, 58
Certificates (See subject listings)
Certification programs, 131
Chemistry, courses in, 64
Chinese, courses in, 68
Chinese literature, courses in, 70
Civil defense training program, 206
Civil engineering, courses in, 148
Civil engineering curriculum, 147
Class attendance, 30
Classification of students, 23
College aptitude tests, 24, 26
Colleges and schools of the University, 7
Colors of the University, 8
Communication, courses in, 65
Communication Institute, 208
Communication, courses in, 208
Community colleges, 213
Community college teaching program, 130
Community health, 165
Comparative literature major, 38
Comparative medicine division, 161
Computing Center, 8, 253
Conference programs, 206
Continuation at the University, 32
Continuing Education and Community Service, College of, 205-206
Continuing education for women, 206
Cooperating institutions, 11
Cooperative Extension Service, 201, 254
Core requirements, 34
Costs, 15 (See also Tuition and fees)
Counseling and Testing Center, 14
Course changes, 29
Course examinations, 31
Course numbering system, 3
Course schedules, 3, 31
Courses, announcement of (See listings under individual departments)
Credit and grade-point requirements, 35
Credit by examination, 31
Credit for foreign language study, 31
Credit-no credit option, 30
Credits, grades, and examinations, 30
Culture Learning Institute, 208
Curricula:
   Arts and Sciences, 46
   Business Administration, 117
   Education, 127
   Engineering, 147
   Health Sciences and Social Welfare
      (See individual schools)
   Tropical Agriculture, 185
   Human Resources Development, 192
   Curricular requirements, general, 34
   Curriculum and instruction, courses in, 132
   Curriculum Research and Development Group, 255
   Deadlines for application, 24
   Dean's list, 18
   Degree applications, 35
   Degree programs, 33
   (See also respective colleges)
   Dental hygiene, courses in, 174
   Design courses, see Art and Architecture
   Directory for students, 12
   Dismissal and suspension, 32
   Doctor of philosophy, 33, 202
   Dormitories, 15
   Drama and Theatre, courses in, 66
   Dutch, courses in, 83
   Early admission program, 28
   Early childhood education program, 127
   East Asian languages, 67
   East Asian literature, 70
   East-West Center, 11, 207, 258
   Economic Research Center, 8, 248
   Economics, courses in, 71
   Economics, business courses in, 121
   Education, bachelor of, 130
   Education, College of, 126-143
   Education Research and Development Center, 8, 247
   Educational administration, courses in, 136
   Educational communications, courses in, 136
   Educational foundations, courses in, 138
   Educational psychology, courses in, 139
   Electrical engineering, courses in, 151
   Electrical engineering curriculum, 147
   Elementary education program, 128
   Emeriti of the University, 244
INDEX

Employment, student, 18
Engineering, College of, 144-157
Engineering curricula, 145
English, courses in, 74
English as a second language, courses in, 77
English Language Institute, 38:
courses in, 76
Enrollment, University, 260
Entomology, courses in, 159
Entrance requirements, 24
Environmental Center, 8, 255
Equal opportunity policy, 8
Ethnic studies program, 45
European languages, courses in, 78
Evening courses, 205
Examinations, credit by, 31
Examinations, 31
Exchange program, National Student, 40
Expenses, student, 15
(See also Tuition and fees)
Faculty and staff, 215
Failure, academic, 32
Fashion design, textiles and merchandising, courses in, 194
Federal loan programs, 18
Federal scholarships and grants, 16
Fees and tuition, 20
Finance, courses in, 119
Financial aids, 16
Financial obligations, 16
Fine arts, bachelor of, 49
Food and nutritional sciences, courses in, 197
Food institute, 208
Food science and technology, courses in, 190
Food services, 15
Foreign Contracts Office, 253
Foreign language labs, 8, 257
Foreign language placement exams, 31
Foreign student admission, 26
Foreign student adviser, 14
Foreign students, rights and freedoms of, 16
Former presidents, 214
French, courses in, 79
Freshmen admission
Residents, 24
Out-of-state, 25
Freshmen orientation period, 13
Freshmen seminar program, 41
Fruit flies lab, 11
Full-time students, definition of, 23

GI bill, 18
General curricular requirements, 34
General education core, 34
General engineering, courses in, 151
General engineering curriculum, 147
General information, 7-11
General science, courses in, 113
Genetics, courses in, 166
Geography, courses in, 84
Geology, courses in, 86
Geophysics, Hawaii Institute of, 9, 249
Geophysics, courses in, 86
German, courses in, 80
Grade-point ratios, 31
Grade-point requirements, 35
Grades, 31
Graduate credit for seniors, 35
Graduate Division, 202
Graduate faculty, affiliate, 245
Graduate students, admission of, 28
Graduation requirements, 34

Grants and scholarships, 16
Graphics services, 9
Greek courses in, 81
Haleakala observatory, 9
Hamilton library, 10
Handicapped student services, 41
Hawaii Agricultural Experiment Station, 201, 247
Hawaii Cooperative Fishery Unit, 8
Hawaii Institute of Geophysics, 9, 249
Hawaii Institute of Marine Biology, 9, 251
Hawaiian, courses in, 91
Hawaiian studies, major in, 37
Hawaiian Sugar Planters Association, 11
Health and physical education, courses in, 140
Health insurance plan, 14
Health requirements, 13
Health Sciences and Social Welfare, College of, 189-183
Health service, student, 13
Hilo College, 211
Hindi, courses in, 92
History, courses in, 88
History of the University, 7
Home economics, courses in, 199
Honorary societies, 18
Honor courses, 36
Honors programs, 28, 36
Horticulture, courses in, 190
Housing, student, 15
Human development, courses in, 200
Human resources development curricula, 192

“I” grades (Incompletes), 30
Ilokano, 92
Indo-Pacific languages, 91
Indonesian, courses in, 92
Industrial education, courses in, 135
Industrial Relations Center, 9, 249
Infirmary SHS, 13
Information about University, 7
Information and computer sciences, courses in, 94
Injuries in sports, 13
Inquiries by prospective students, 8
Institute for Astronomy, 9, 250
Instructional staff, 218-244
Instructional Resources Service Center, 9, 256
Insurance, courses in, 119
Insurance, student health, 14
Intercollegiate athletics, 13
Interdisciplinary courses, 36
International programs, 11
International Student Office, 14
Intramural-extraflurial sports, 13
Italian, courses in, 83
Japanese, courses in, 69
Japanese literature, courses in, 71
Javanese, 91
Journalism, courses in, 76

Ka Leo, 12 (See also Journalism)
Kapa, 12
Kapaa Community Service, 206
Kokua, 41
Korean, courses in, 70
Korean literature, courses in, 71

Labor-Management Education Center, 207
Laboratory of National Marine Fisheries Service, 11
Laboratory of Sensory Sciences, 9, 249
Land Study Bureau, 9, 248
Language labs, 8
Language placement exams, 31
Law, courses in, 92
Late registration, 29
Latin, courses in, 81
Law, business, courses in, 120
Liberal studies program, 37
Library activities, 256
Library facilities, 9
Library fines, 16
Library Studies, School of, 203-204
Linguistics, courses in, 95
Listening Center, 9
Living accommodations, 15
Loan programs, 18
Lyceum Laboratory, 10, 248
Lyceum program, 205
Lyon Arboretum, 10, 251
Lockers, book, 14

Madurese, 91
Majors and requirements:
Arts and Sciences, 46
Business Administration, 118
Education, 127
Engineering, 147
Health Sciences and Social Welfare (See individual schools)
Tropical Agriculture, 185, 192
Management, courses in, 122
Manuscript criticism service, 206
Marathi, courses in, 92
Marine Fisheries Lab, 11
Marine option program, 41
Marketing, courses in, 122
Mass media programming, 206
Master’s degrees, 33, 202 (See also respective schools and colleges)
Mathematics, courses in, 96
Mathematics, courses in, 96
Maxwell, admission of, 27
Mechanical engineering, courses in, 154
Mechanical engineering curriculum, 148
Media specialist program, 131
Media, training in (See Educational communications)
Media lab, IRSC, 9
Medical clearance for registration, 14
Medical division, 161
Medical technology division, 161
Medicine, courses in, 166
Medicine, School of, 159
Merchandising, fashion design, textiles, courses in, 193
Meteorology, courses in, 97
Microbiology, courses in, 61
Military science program, 39
Minangkabau, 91
Mon, 91
Motto of the University, 8
Muong, 91
Music, courses in, 98
Music degree program, 49

National student exchange program, 40
New College, 42
No credit-credit option, 30
Noncredit courses, 205
Nonmajor, see Liberal studies